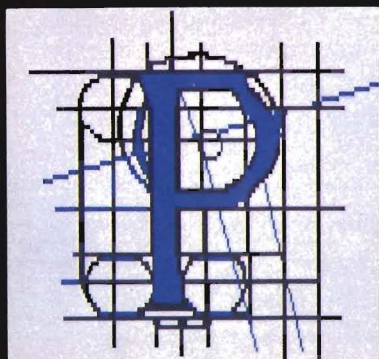


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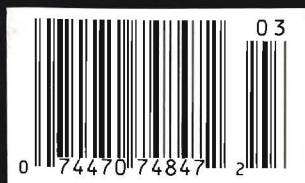
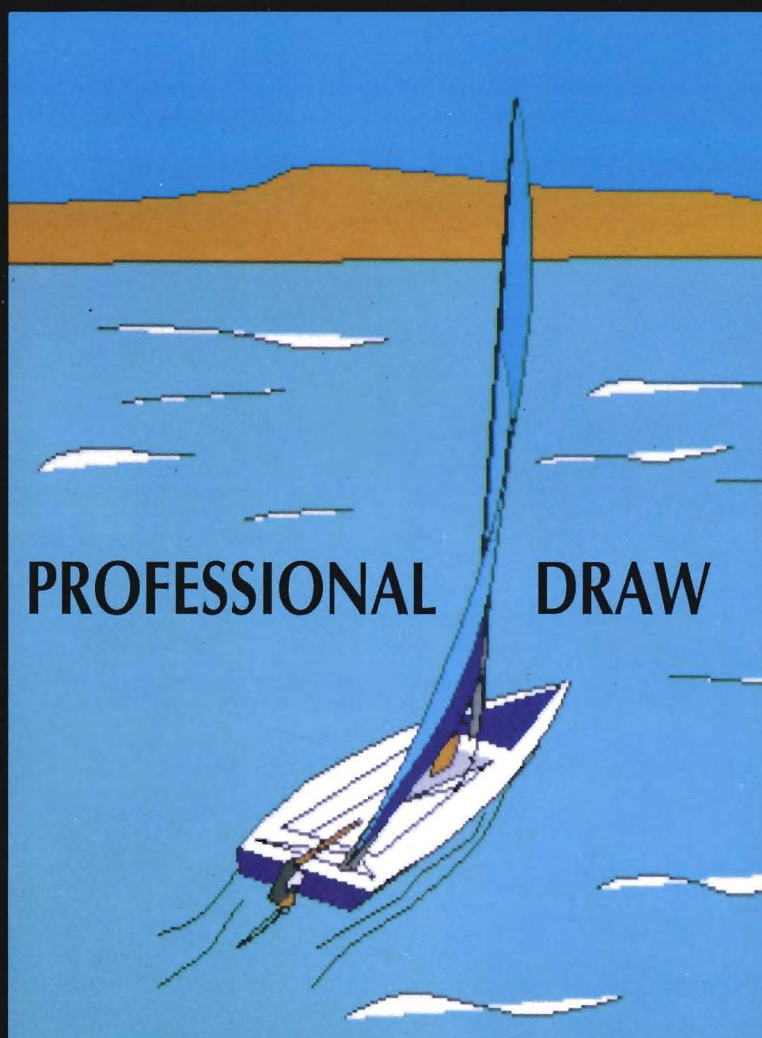


Pagestream

Desktop Publishing Realized?

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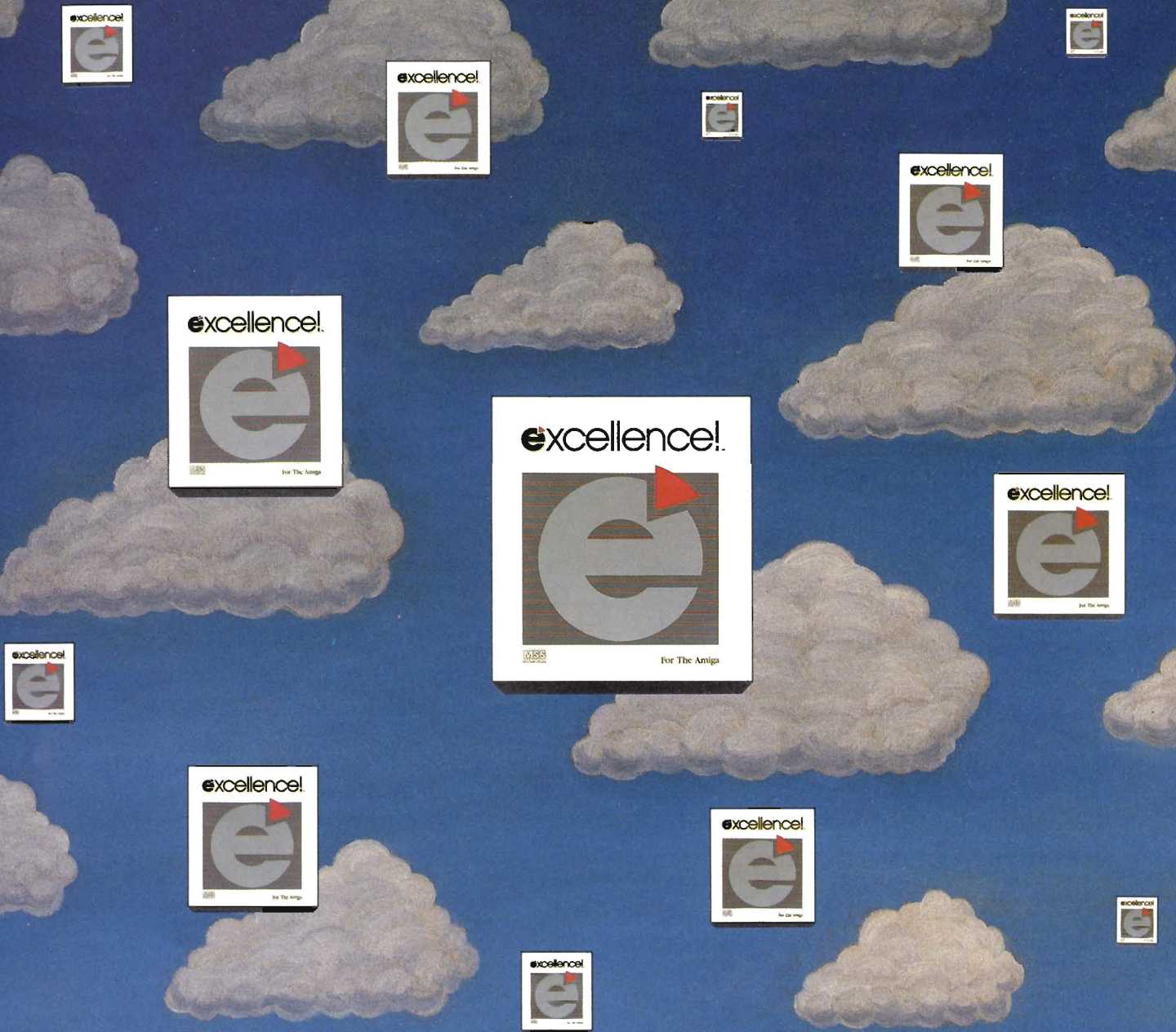
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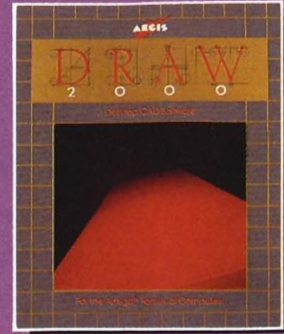
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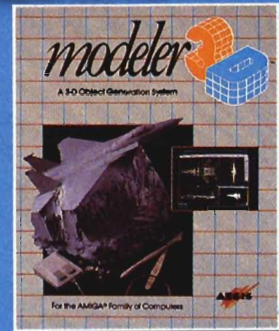
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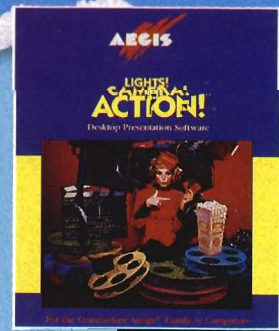
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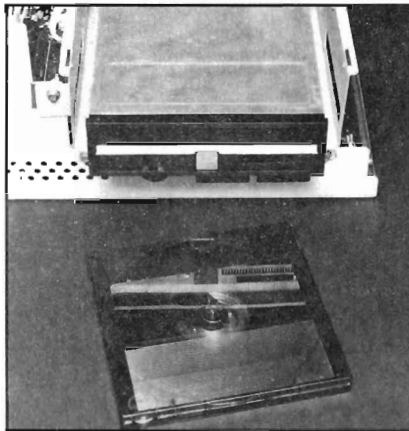
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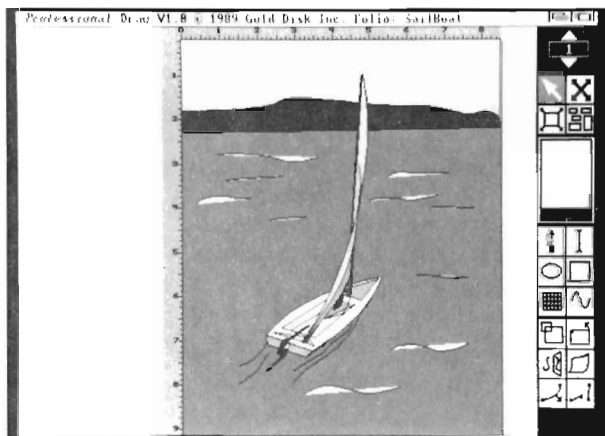
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On Point

Notes from Editor, Tom Bucklin

Well, I know it is starting to follow an ongoing theme, but here we go again. You probably noticed the new look and feel of The Amiga Sentry this month. We decided it was time to go to a gloss stock and begin to add color to our interiors. This is, of course, no small thing. The cost of making such a move boggles the mind in relative terms. But it is a perfect enhancement for The Amiga Sentry. Our readers have always been reading the latest breaking news, and now, they don't have to wait to see it in color, either!

This will open up a lot of new doors for us in terms of the type of products we review, and I think you'll like what we have in store for the coming months.

We've stayed up extra long putting in time on this month's issue. Between going to our "Extra_Halbrite" mode and getting the stories for you on products like Pagestream and Professional Draw, we could all use a vacation.

Speaking of Pagestream, we've taken a close look at this significant program in our lead article. There has been a lot of anticipation as to whether or not it was going to live up to its claims, and we were pleasantly surprised to find that this package can do some astonishing things. Coupled with the release of Professional Draw, these are significant days for Amiga productivity.

Enjoy the issue...

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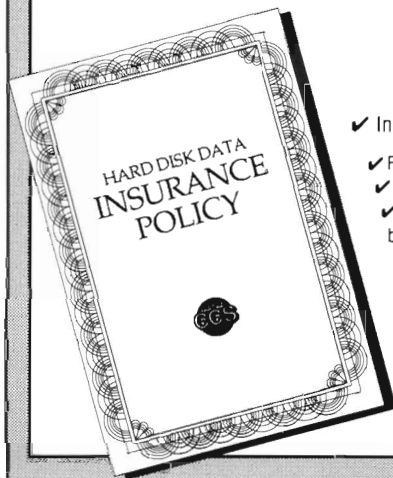
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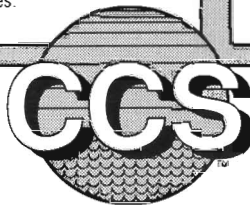
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PageStream

Has SoftLogik Pushed Desktop Publishing to New Heights?

by Tom Bucklin &
Steve Dock

It was in Los Angeles at the January 1988, AmiExpo that we first learned that Softlogik had begun development of a desktop publishing package for the Amiga. We were aware that Softlogik had already successfully marketed a Desktop Publishing (DTP) package for the Atari ST and, therefore, spent some time speaking with the principals. Like many others, we were impressed by the detailed plans and broad scope of "Publishing Partner Professional." Even more impressive was the scheduled delivery date of February or March 1988. A blitz of advertising followed with an attractive "trade-up" offer which attracted many purchasers.

Time passed and we continued to see Softlogik in Chicago, and again in Los Angeles. Unfortunately, the product continued to be in development. In November at the World of Commodore in Philadelphia, SoftLogik showed the latest development version of what was now called "Pagestream." The version which was on display could perform amazing feats with fonts and graphics, but was still too unstable to ship. Just a few more weeks, we hoped. The better part of a year later, PageStream is here and the question burns luminously: Was it worth the wait? In order to answer

that question completely, one has to consider the program on its technical merit.

PageStream was, and still is, one of the most ambitious undertakings in the desktop publishing discipline. Scalable fonts, full color separation support, facing pages, style sheets, tags, spell-checker, hyphenation, etc., all rolled into one powerhouse of a spec sheet. The original SoftLogik promotional materials compared PageStream's list of features to Pagemaker and gave clear notice that the product was aimed over Amiga competitors and at the established "big-guns." We can forgive relatively small shortcomings and even large delays if PageStream comes close to this level of performance. But would it reach this level?

The PageStream package is professional in approach and appearance. A dark blue book-sized box provides a

place to store the documentation and software. The manual has been produced in a three ring loose-leaf style, (with PageStream) of course. It is attractively printed with five main sections. These include introductory materials, three tutorials, hints and tips, command menu reference, and appendices. There is a well written section introducing typographic terminology, as well as a glossary of DTP terms. Most sections of the text include illustrations of menus and operations, with the notable exception of the third tutorial. A new user can become productive quickly and easily based on these materials.

PageStream can be started from the WorkBench or CLI. The WorkBench ICON includes two important tooltypes which control your working mode. You can set SCREEN= to either Custom or WorkBench, and you can set COLORS= to 2, 4, 8, etc. (CLI

Page Size

<input checked="" type="checkbox"/> Letter - 8.5" x 11"	<input type="checkbox"/> Business Card - 3.5" x 2"
<input type="checkbox"/> Legal - 8.5" x 14"	<input type="checkbox"/> A3 Size - 297mm x 420mm
<input type="checkbox"/> Manual - 5.5" x 8.5"	<input type="checkbox"/> A4 Size - 210mm x 297mm
<input type="checkbox"/> Tabloid - 11" x 17"	<input type="checkbox"/> A5 Size - 148mm x 210mm
<input type="checkbox"/> Index Card - 5" x 3"	<input type="checkbox"/> B4 Size - 256mm x 364mm
<input type="checkbox"/> User - <input type="text"/> x <input type="text"/>	<input type="checkbox"/> B5 Size - 182mm x 257mm

Single Sided Document
 Double Sided Document

Page Orientation Portrait (vertical)
 Landscape (horizontal)

users can accomplish the same thing with command line switches.) A custom screen provides increased speed when used with two colors. In fact, unless you are creating color output, you should always work in two-color mode. The option for a WorkBench screen is important for using the A2024 and Moniterm monitors and for future display developments. This flexibility is good, but once you begin the program, you cannot change the number of colors you have selected.

This brings up the point of memory management. Like most display intensive programs, PageStream needs its share of Chip RAM. Since all drivers and all fonts are loaded upon startup, it is recommended that you delete all irrelevant files from your work disk (that's right, PageStream is NOT copy protected). If you are like most users that have just a couple of printers at best, deleting some of the inapplicable printer drivers is a great place to start to free up valuable program space.

The PageStream screen is made up of three familiar components; the document window, a toolbox, and menus. The custom screen is hi-res, but the default colors have been chosen to reduce flicker. The document window takes up 80% of the screen, and can be resized or moved behind with normal Amiga gadgets and keystrokes (left Amiga-N). The toolbox is on its own window, so you can move it around with a tiny drag-bar or push it behind the workpage with gadgets if you want maximum viewable space. Since there are keyboard equivalents for most every tool, this is a practical method of using PageStream.

There are eight sets of menus, many with more than ten selections! Don't be scared off, the menus are arranged logically and keyboard equivalents are listed for the most used options. The

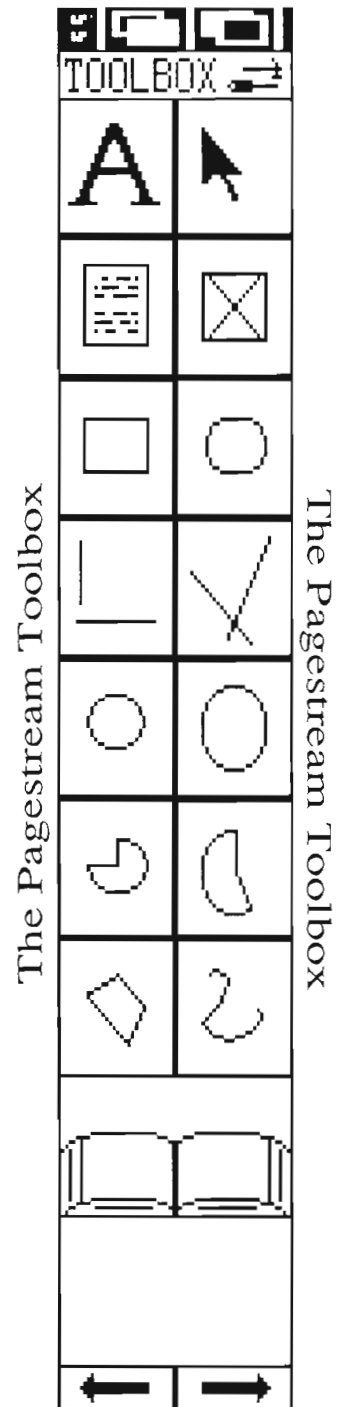
File menu provides for loading and saving documents, importing text and graphics, printing, and opening a new CLI. Let's start at the beginning and select NEW. A setup window will appear which lets you select a page size from twelve standard sizes, or create your own custom page. Some of the unusual and useful sizes included are specifications for index and business cards. You can also select horizontal or vertical page orientation. For the sake of this exploration, we'll start up with the typical 8.5 by 11 inch vertical page. PageStream will represent this by default in "100% of actual size" mode. This means that a little more than the top half of the page will be visible, and you can use scroll bars or cursor keys to move to the lower half.

Text is what DTP is all about, so clicking on the large letter "A" will allow you to deposit your text cursor anywhere on the page (column or not). The disk-drive will spin a while as the default font is loaded, and then your text will appear. Those of you who are only familiar with Amiga DTP programs will notice a conspicuous absence of a usual obligatory step in this process. I bet you thought that you had to create columns or boxes to receive text before you could type to the screen.

When we began typing anywhere, we created what is known as a "text object." Change to another tool, and that object is finished. You can move it, change its shape and size, rotate it, duplicate it and much, much more.

You can accomplish this feat because PageStream supports two kinds of text categories: Columns and Objects. For the first type, there are two choices for creating conventional columns; either click on the column tool, or use the layout menu. The column tool works

(continued on next page)



Pagestream (continued from previous page)

almost as you would expect. Once activated, you click once on the page and move the mouse to a second location. Then click again to complete the column (you don't hold down the mouse button as you move to the second point, as in other programs).

After activating the text tool and placing the text cursor in the new column, you can enter text. The large arrow tool, which is sometimes called a "null pointer," is described in Pagestream as an "Object tool." Clicking on a column with this object tool will produce a series of little boxes that surround the column. Their presence indicates that this object has been "selected," and a number of operations can now be performed on the column. These boxes can be used to change the size, and in some cases the shape, of objects in Pagestream.

Any object may, of course, be moved by first selecting and then dragging. Selecting "Edit Coordinates" from the Object menu allows you place objects in specific locations by typing in numerical values, as well as providing scaling options. Many of these capabilities can be found in a number of products on the market today. But the concept of a text object as it is implemented in Pagestream is very powerful. Because the program does see this as an object, a variety of manipulations and transformations become possible. Let's get back to basics, though, and create a multi-page document with linked columns. Sliding over to the Layout menu and selecting Create Columns will cause a requestor to pop up with default values provided. You can specify the margins, number

of columns per page, number of pages, and linkage. Just moving the mouse or cursor around and entering values is all that is required to change the number of columns from one, highlight linked columns, and change the number of TO: pages to five.

Selecting "Show column outline" will display the current column locations. You can click on the right pages of the book tool to advance to another page if you like. The columns AND pages will all be there. Returning to the FILE menu and selecting Import Text will bring up a window for you to iden-

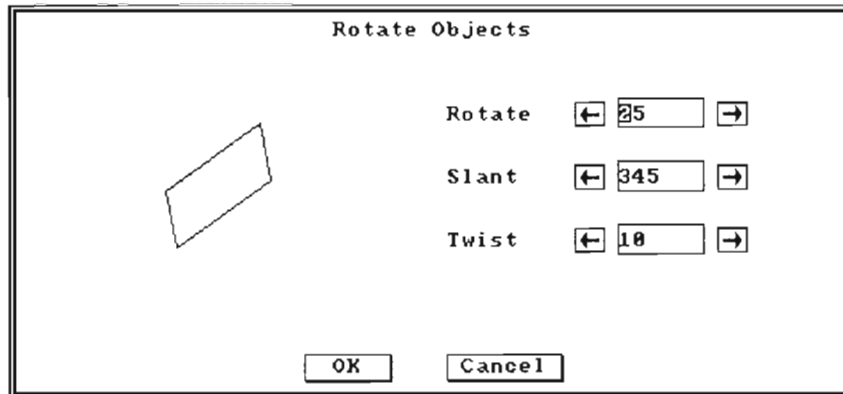
derstand that small things, like the ability to close a window with a return stroke, are important to the masses.) In a few seconds the requestor will disappear and the columns begin to fill with text. When the text-bar reappears, moving around the pages confirms the operation.

By highlighting some text (using the select and drag method) you can experiment with the many text styles and fonts included with Pagestream. The STYLE menu is packed with interesting, and in some cases, novel text style tools. As you would expect, the normal compliment of Bold, Italics, and underline styles are supported. But Pagestream can also create mirrored, backslanted, and upside down text as well. The text remains selected after an operation, so you can return to this menu to combine styles. PageStream also supports shad-

ow, reverse, outline and single outline on this menu, but we did encounter some inconsistencies with mirror and upsidedown styles. Not all text or all fonts were redrawn when these options were selected. On the plus side, you can return to Normal with a single menu choice or keystroke.

Speaking of fonts, probably the single most important feature of Pagestream is the use of scalable outline fonts. You are familiar with this technology through Adobe's Postscript. Postscript fonts usually reside in a laser printer and are scaled, rotated, clipped, etc. in the printer's CPU without losing resolution. These printers are very expensive and require DTP software with

(continued on page 8)



tify the text file name. You can type in the name, or click on it if it is listed.

A second requestor will appear with a list of format translators which is currently limited to ASCII and WordPerfect. (Softlogik has stated that they will continue to support this program in a very real sense in terms of an ongoing supplication of printer drivers, fonts, and import modules). Assuming that your file has been saved as Ascii text, click on Ascii v1.5. There are two choices for determining paragraph endings. Amiga software generally uses LF and CR to indicate a paragraph, so clicking on this one would be the safest bet. You signify "okay" by either clicking on OK or tapping return. (It is good to see that the programmers un-

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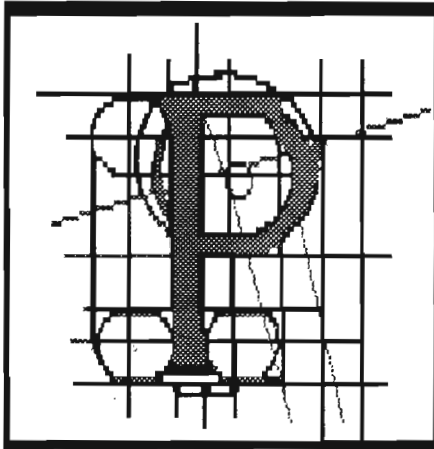
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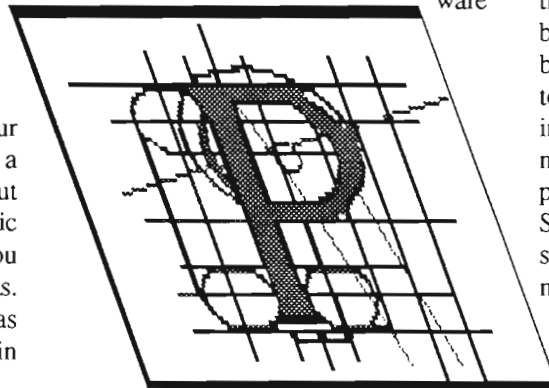
screen fonts that match the proprietary Adobe fonts closely. SoftLogik has gone Adobe one better. Not only have they designed their own scalable fonts and matched them to common Adobe laser fonts, but they are using the Amiga processor and memory to provide the same benefits to all dot-matrix output devices!

The documentation describes the four types of files provided for each font: a screen representation, a scalable output font, a PostScript version, and a metric file. With all those variations, you might expect a small selection of fonts. On the contrary, SoftLogik has provided us with ten "typefaces" in many sizes ranging up to 200 points!

But before you try to print, you'll need to select the "Configure Printer" option from the last menu, Global. Clicking on LOAD from this new setup screen will bring up a list of custom printer drivers developed by Softlogik. If your printer is not listed, you should select "dot matrix printer." This will activate the standard Workbench printer.device and driver. However, even with this configuration, the printout was not "standard" at all. That's because Pagestream conveys the instructions to print, even to dot matrix, through a method that describes the outline of text and objects, and then

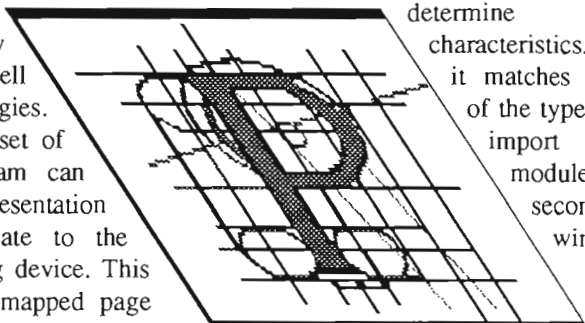
fills them in. In this respect, this process is very similar to Postscript. Currently, these include EpsonQ and X models and QC/XC models, Star Gemini Printers, Okimate 10/20, Nec 6/7, HP Laserjet, Xerox 4020, and of course, Postscript lasers.

This method of importing the printer driver is a far superior system than having to go out to Preferences to pre-choose a driver which then statically appears in the print requestor window. From within the Configuration window, you set up your page size and choice of parallel, serial, or disk output. We tested PageStream on 9 Pin Epsoms and Gemini's, as well as both Postscript and HP laser printers. The results were outstanding. This has not been the case with other Amiga software



which supports the HP. Unless you used the built-in HP fonts, you were faced with jagged representations of Amiga screen fonts.

Even more amazing is the quality of the 120 DPI Epsoms. The headlines and text body looked even and well formed with very few jaggies. By developing its own set of outline fonts, PageStream can compute the output representation of each page appropriate to the resolution of the printing device. This act of producing a bit-mapped page



which is then sent to the printer may make Pagestream the first program to fully utilize the capabilities of the now numerous 24 pin printers capable of 300 DPI. Postscript is the DTP standard and Pagestream had better produce expected results when printing here. Our tests confirmed that the SoftLogik fonts map properly to the laser printer. In fact, Pagestream automatically downloads the necessary Postscript font file for a given document to speed up processing. Amiga DTP specializes in color separations. Pagestream provides these too, with the addition of Color Postscript support.

Graphic Handling Capabilities

This section could be called, "what it's got, what it's not." What it's got is the expandable ability to import a number of different types of object or bit-mapped graphics. What it's not, is totally implemented. The module to import Draw Plus type formats did not make it into the product before shipping. However, sources within Softlogik assure us to assure you that support for Draw files should be implemented by the time you read this review. This module, and others to come are easily added to your program by simply copying the new driver file into your PSDrivers directory. The procedure for bringing bit-mapped or structured graphics into the program is very similar to the previously mentioned text import function. When asked to load a graphic, the program examines your selected file to determine its characteristics. If it matches one of the types of import modules, a second window

dow will appear allowing some choice in the way you wish to bring the graphic in.

In the case of an IFF file, you can import the image either as an "Object" or a "Picture Window." Essentially, these different paths might be accurately described as, "crop or no crop." The Picture Window is an overlaid window where, after the necessary automatic calculations, your image will appear. You are then presented with a cross-haired cursor with which you can box out a section of the picture to be imported into your document. Selecting "Copy" from the Edit menu will copy your cropped section into the program's buffer. At this point, you can either close the picture window, or leave it open for multiple "snips" from the image that you can assemble on your page. Applying the image to your page is both easy and powerful at once. Easy because the whole principal is very much like that of the cut and paste functions commonly associated with word processors; powerful because of Pagestream's drag/paste operation. After you choose "Paste" from the edit menu (or use the appropriate keyboard shortcut), your arrow pointer will turn into a framing square, signifying that you are ready to place your graphic on the page. Simply hold the upper left corner of the framing square over your intended upper left corner of your graphic and clicking the left mouse button will copy the image from the buffer onto the page. However, clicking and holding down the button as you drag the square will create a sizable box outline that is representative of your image. This sure beats typing in coordinates for a quick placement within a document.

The "Object" option back at the import requester works much the same way except that the program copies the entire uncropped image directly into

the buffer. This is the option that should be used for speed whenever possible. I say this because there is a delay (sometimes considerable depending on the complexity of the graphic) both when a picture window opens AND when you paste the object onto the page. Using the Object option cuts down the wait to one, and uses the drag/paste method as well.

In either case, the fun begins when you start to experiment with your newly installed object. Most notable, the "Rotate" selection from the Object menu allows you to twist, slant, or rotate the object. As discussed previously, this also works with "text objects" as well. The power of Pagestream really becomes apparent during the rotate function with the text run around option active. We conducted many tests where objects were turned every which way but loose, and the speed with which the program could recalculate what the new perspective of the object would look like, place the object back on the page, and reflow text around this new irregular shape was impressive, to say the least. Like any product, Pagestream has some weak points. Some Amiga users may find the requestor system that Pagestream uses for disk access a bit clumsy. We ran Pagestream hard on a variety of machines and configurations, and ran in single and multi bit-planes (two or more colors). In most cases, the program was well behaved, but not perfect. At other times, it seemed to be unexplainably sluggish, and occasionally went to see the GURU. And, of course, this is key. We think people have learned to expect the process of the seemingly inevitable bug fixes, many times in programs far less complex than Pagestream. But the place where most will draw the line is if the product loses its usefulness to them because it is down right unstable. Pagestream does not fall into the unsta-

ble category, but it does seem to need to be a little "tighter" in its control responsiveness.

Also, there are some functions that are sort of implemented, and sort of not. One limitation is that your graphic images are displayed in black and white only. However, printout quality is not affected by that. Also needed is a color driver to drive the color printers supported through Amiga Preferences. Some color printers are supported from within the program, but through the custom drivers. (The Xerox 4020, for instance.)

Fortunately, these are all things that Soft Logik will be monitoring as part of their maintenance on the program, and they would like to receive your comments and suggestions. In the meantime, it is not an understatement to say that Pagestream breaks major new ground. With the open architecture of the program that allows you to install new custom drivers and modules as they become available, we expect to see constant activity in and around Pagestream in the upcoming months. But the far greater activity will probably be the sound of money shuffling as dot-matrix and HP owners flock to get their hands on this, the first program to do their printers justice.

How does it stack up??

One can not review a product of this type without thinking about Professional Page, Gold Disk's high-end DTP system which was billed as having the capability to bring the Amiga into the same league as the MacIntosh in terms of publishing software sophistication. Since both of these products require a considerable investment in time and money, a comparison was in order. Immediately apparent, however, is the fact that Pagestream's list of capabilities literally dwarfs that of ProPage. (continued on next page)

Beyond that, many top-flight Macintosh programs come up short against Pagestream's object and bitmap manipulation abilities. The features are so many and varied in Pagestream that we thought we'd get more to the point and spell out some of the notable abilities that we have tested. What follows is just a sampling of the features that make Pagestream unique and powerful. It should also be noted that with very few exceptions, these are features that Professional Page DOES NOT support.

Text Handling Abilities:

- * Text Runaround of objects, text, or irregularly shaped graphics
- * Integral Hyphenation, with editable exceptions
- * Integral Spelling Checker
- * Extensive wildcard protocols for search and replace operations
- * Global Or Selective Replace Text Attributes
- * Text tagging
- * Can export all or part of document text
- * Can create customized fonts with user defined x-y sizing
- * Automatic Page numbering with choice of alphanumeric or Roman numbering systems
- * Text-routing order indicators
- * Text Justification by either Word, Character, or both
- * Make Lowercase, Uppercase, or Capitals function
- * Greeking Support for refresh speedup

PostScript LaserJet Dot Matrix

General Capabilities and Layout Tools:

- * User definable Macros
- * Allows editing of multiple simultaneous documents with cutting and pasting between separate windows
- * Displays Facing Pages
- * Has user definable view magnification scale
- * Variable Display Zoom
- * Has extensive keyboard equivalents, including shortcuts for choosing toolbox tools
- * Snap to Guides/Grid layout function
- * Mechanical or 4 Color Separations
- * Can Print to disk for output later (in addition to Postscript)
- * Supports the maximum resolution of the output device

Graphic Handling Capabilities:

- * Slanting, Twisting, or Rotation of Text and Graphic Objects
- * Can import a variety of graphic formats, including IFF, Ham, and Img
- * Encapsulated Postscript Files (EPS)
- * 40 Different editable Fill Patterns

Output:

- * Uses Proprietary Scalable fonts for "no jaggies" on a variety of supported printers
- * Custom fonts provided with support for Postscript and Dot Matrix versions

According to representatives from Softlogik, they intend to support this product in the same way they currently do for the Atari ST versions. They describe their support of the product as an ongoing interactive process with their users, much of which takes place through Softlogik's own bulletin board system, as well as through Compuserve and Genie. I (T.B.) have been on-line with Softlogik's BBS and found this to be true. There is a continual development going on behind the scenes to support increasing numbers of printers and protocols for the program.

This review constitutes only a first look at Pagestream. We intend to keep you posted as new developments arise and significant additions become available. But for now, we feel confident in saying that Pagestream may have been a long time coming, but the results were worth waiting for.

Pagestream \$199.95
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St. Louis, MO 63123
(314) 894-8608

GVP's SyQuest Connection

Is Infinite Storage Enough?

by Steve Dock

"**W**hen I was your age, I walked two miles to school, a Hershey bar was 5 cents, and we never talked back to parents." My kids call these statements "dinosaur stories," since these events obviously occurred when Stegasaurus walked the streets. Well I've recently come to believe that this term is at least partially applicable to me. I DO remember when a large IBM mainframe had 256 KB of mem-

ory and the largest commercially available harddisk could hold 100 MegaBytes. We thought those room-size units were marvels of power. Just fifteen years later, many of you are owners of Amiga's with 3, 5 or even 9 Megabytes of memory. Harddrives with 80 and 100 Megabyte capacities are available (if costly) and most of the bulletin-boards I call boast of 180 to 220 Megabytes of total storage!

It was just three years ago that a 10 MB harddrive was standard on the IBM/PC-XT. When the PC/AT premiered with a 20 MB drive, I won-

dered who could ever use that much storage. It has taken very little time for these units to become dinosaurs. Any Amiga owner who purchased a 20 MB harddrive can tell you how quickly all 20,000,000 bytes are occupied. All it takes is a few new public domain commands added to your C directory every couple of weeks, a disk of Fonts here and there, and one or two 3-D animations. If you use your Amiga professionally, the problem is even more serious. Offloading programs and data files to floppy disks is some help, but leaves you limited in the number of projects you can have underway at the same time.

Those who work with animations, graphics, or desktop publishing know that each project can easily fill up 20 MB before its finished. Obviously the large 80 MB and 100 MB drives can be a solution, but even they fill-up sooner than expected. Remember Parkinson's Law:

The task expands to the limits of the resources made available.

Is there no hope? Will every magnetic storage device become a dinosaur before its useful life is over? Will someone provide a solution in time? Read on...

One solution to the requirement for ever expanding storage is as close as

(continued on next page)

The SyQuest unit uses removable media, and is autobootable under the GVP autoboot ROMs



DF0: removable media. Removable disk drives have been around at least as long as the IBM 7090. Those 100 MB units I mentioned were removable drives. And removable harddrives have become quite popular for business applications using IBM PC's. A firm called "IOmega" dominates this market segment with something called the Bernoulli Box. Many a small business keeps each division's accounts on a separate disk.

The Bernoulli's were originally bulky 8 inch disks which held 10 MB. Their drawbacks are well known; slow access and high cost. Bernoulli technology has been adapted to the Amiga for more than a year, but hasn't taken our world by storm. Other harddrive vendors have developed competitive products which are smaller physically, cheaper, and have larger capacities. GVP is the first Amiga manufacturer

to introduce a removable harddrive based on the SyQuest products. The SyQuest 555 is a 42 Megabyte unit which fits nicely in the 5.25 inch disk-bay of an Amiga 2000. The specifications are impressive:

- 42 MB formatted storage capacity
- 25 millisecond Average Seek Time
- 8K Buffer
- 20,000 Hours Mean Time Between Failures
- 15 Watts power consumption

The 25 millisecond access time and 8K buffer caught my attention. If you could have a removable harddrive which was as fast as a fixed unit, why wouldn't you buy it? Well of course you'd expect a price difference, but if it were reasonable... Infinite storage. No more dinosaurs. With these thoughts in mind, I waited eagerly for my evaluation unit. I was pleasantly surprised to

find that GVP provided their latest SCSI controller along with the SyQuest drive. The IMPACT 2000-2/2 is the current version of the first GVP product we reviewed almost a year ago. The Impact controllers were the first multi-function cards for the Amiga and included RAM on the same board as the SCSI controller. The 2000-2/2 is an autobooting, autoconfiguring controller with 2 MB of RAM onboard. (The concept of multi-function cards is even more important today with the growing number of products competing for the limited number of A2000 card slots.) GVP uses 1 megabit by 1 DRAMS rated at 150 Nanoseconds, so this will be really FAST ram.

Installing any harddrive requires opening the case of the A2000 and inserting the controller card in an open slot. You will be running cables from the controller to the front disk-bay area, so using

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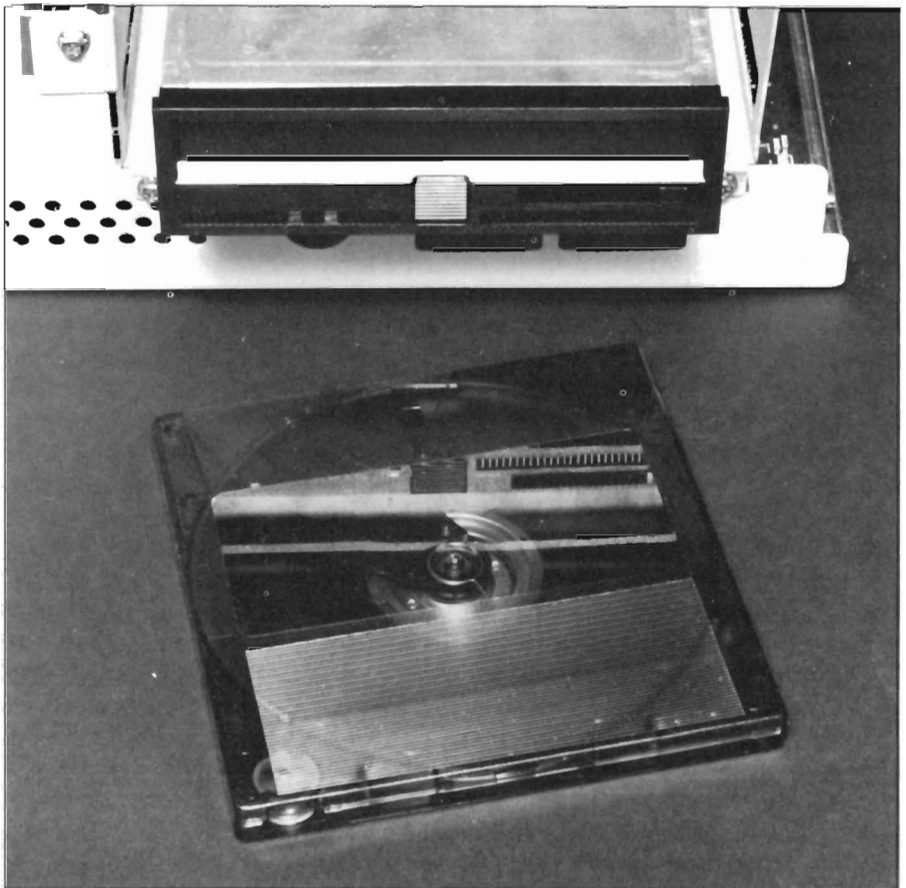
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the slot closest to the drives is logical. If you've never installed a circuit card remember to press firmly and steadily. With the controller in place, its time to mount the harddrive. The SQ 555 uses the disk-drive bay underneath the 3.5 inch floppy drive(s), so you may want to remove the metal tray on which they are mounted. If you have long and nimble fingers this can be avoided. Position the SyQuest and align the mounting screw holes. Four screws later and you're left with cabling. Connect the 24 Pin ribbon cable to the back of the drive, being sure to align pin 1 with the mark or notch. Now locate an available power cable from the Amiga power supply and connect it to the ribbon cable. The SyQuest has its own built-in drive activity light, so we don't get to run a wire to the Amiga's disk drive light.

Check your connections and tighten the screws on the case. The black faceplate of the SyQuest doesn't exactly blend in with Amiga grey, but it is professionally finished. When you turn on the power, you should hear a new sound. As the SQ 555 builds up to 3220 revolutions per minute, it sounds like a small jet or turbine engine. Once the full rotational speed is reached, the sound quiets some, but is definitely louder than a comparable fixed drive. Now it's time to discuss the removable media. Each disk cartridge comes with instructions for inserting and removal. It is very important to follow the instructions. Haste or carelessness can destroy your data, the cartridge, and possibly damage the drive mechanism itself.

The dark plastic cartridge has a curved section with a moving door which slides back when inserted. The front of the cartridge includes a red cylinder which can be rotated to two positions to provide write-protect or write-enable. You must only insert or remove



The unit installs inside the 5 1/4" bay on the A2000

the cartridges when power is on. The drive unit has a ribbed button in its center which is pressed to begin the ejection sequence. Press this and to the right a lever will extend about 1/2 inch. Slide the lever all the way to the left to disengage the drive mechanism. Now you can insert the blank cartridge. Next move the lever to the right until it is flush with the drive case. A red light will blink, then turn solid, and finally a green activity light will turn on signaling all is ready.

With some harddrives, the hardware could be the easy part of the installation process. In fact, the famous Bernoulli units often require a Master's of DOS to install and integrate into PC applications. Fortunately GVP has de-

veloped its "Advanced Autoboot EPROM Kit" and automated installation software to make the SyQuest completely compatible with Amiga DOS, and a snap to install. The EPROMS are ROM chips which reside on the controller card and handle automounting, autoconfiguring, and provide a SCSI device driver which can support removable media. The same controller will work with Bernoulli drives, SyQuest drives, and other SCSI hardware such as CD-ROM, WORM, streaming tape drives, etc. GVP has invested significant resources in developing this firmware so that their Amiga customers can have access to the same wide range of hardware that IBM and MAC users have. This may not seem like a "big deal" at

(continued on next page)

SyQuest (continued from previous page)

first, but according to Gerard Buccas of GVP, there were several problems to overcome. First there is a problem unique to AmigaDos. Once a device is mounted, it cannot be demounted. This

means that every SyQuest or Bernoulli cartridge has to be formatted with the same number and size of partitions unless, of course, you don't mind rebooting. Next is the problem of diskchang-

ing. On other removable drives you must type the AmigaDos command "Diskchange" or the system will not be aware of a new disk. This usually results in clobbered data. GVP tested several solutions and decided to include code in the autoboot ROM's which is activated only if a removable device is sensed. This code starts a small task which polls the removable drive every few seconds to determine if the media has been changed. If it has, the task issues a diskchange command which forces AmigaDos to recognize the change and locate that cartridge's root block and bitmap. Another problem occurred with supporting Bernoulli devices. All Amiga devices use 512 byte blocks or sectors. AmigaDos can handle devices with sectors larger than 512, but not smaller. Of course, Bernoulli drives use 256 byte sectors. GVP has included code in their ROM to pack two sectors together whenever AmigaDos reads or writes to a Bernoulli device.

Perhaps the most significant user feature of the GVP SCSI technology is the inclusion of support for autobooting and fast-file system for the removable media. One major advance of Kickstart 1.3 is support for autobooting devices. Your system is up and running in seconds without access to a floppy disk. Till now, you would have to rule out a removable drive if autobooting was a requirement. Think about this a minute. The Amiga 2000 starts up with Kickstart in ROM, but there is no AmigaDos until the various libraries and drivers are loaded from disk. Question: If you have to mount a disk before you can read from it, where does the device driver and file-system come from? (Which comes first, the chicken or the egg?) Enough philosophy for now, lets get back to software installation. GVP provides an installa-

(continued on page 16)

Performance Tests - Single Task Running			
	<u>SyQuest</u>	<u>Seagate</u>	<u>Floppy Disk</u>
Copies:			
350 K File to RAM:	3 Sec	2 Sec	33 Sec
100 K File to RAM:	2 Sec	2 Sec	10 Sec
10 9K Files to RAM:	3 Sec	3 Sec	16 Sec
200 Files, 4000 K to Seagate Drive	114 Sec	--	n/a
200 Files 4000K to SyQuest Drive	--	89 Sec	n/a
DIR:			
197 Files	12 Sec	11 Sec	73 Sec
LIST:			
197 Files	19 Sec	18 Sec	96 Sec
Load Excellence!			
350 K	7 Sec	6 Sec	28 Sec
Results of DiskPerf- Single Task Running			
	<u>SyQuest</u>	<u>Seagate</u>	<u>Floppy Disk</u>
File create	8 files/sec,	12/files/sec	0 files/sec
File delete	12 files/sec	24/files/sec	1 files/sec
Directory Scan:	96 entries/sec	104 ent/sec	42 ent/sec
Seek/read test:	72 seek/reads/sec	55 s/rds/sec	19 s/rds/sec
Read / Write Speed: (Buffer 8192 bytes)			
READ	174762 byte/sec	187245 byte/sec	12249 byte/sec
Write	137970 byte/sec	154202 byte/sec	5050 byte/sec
(Buffer 32768 bytes)			
READ	201649 byte/sec	187245 byte/sec	12365 byte/sec
Write	131072 byte/sec	154202 byte/sec	5060 byte/sec

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tion disk which should be inserted in DF0: and booted from. The programs and scripts on the disk will query the SCSI controller, determine what device(s) are attached, and their capacity and physical characteristics. In the case of the SyQuest, you will be asked just a few questions as the script proceeds. First, you will be warned that all data on unit 0 will be erased. Next, the script will inform you that a 42 MB SqQuest drive is present. (Note that blocks and sectors are irrelevant to a user, megabytes is the unit of measure used throughout.) Now you will be presented with a default configuration:

1 Fast File System partition 42 MB. If you accept this, the drive will be prepped, formatted, FFS installed, and Workbench copied to the cartridge without further intervention! If you choose to create multiple partitions, just respond to the prompts. Your answers will be checked against the capacity of the drive and the operations will proceed. The whole software installation took about 5 minutes and seemed both bullet proof and user friendly. For the first-time owner of an Amiga harddrive this is a major improvement over the cumbersome processes provided by Commodore and other manufactures. GVP has removed all of the jargon and confusion regarding mountlists, # of sectors, heads, etc., and replaced it with common-sense default decisions.

Now remove the GVP installation disk and reboot. In seconds the Workbench screen will appear and you will get your first experience of the other SyQuest sound-effect. All harddrives have read/write heads which must move over the surface of the rigid-platter. These movements are very rapid and make sounds. The sounds made by the SQ 555 are more like distinct clicks than the buzz sounds made by standard drives. It's not much louder, just different. My first impression of

the GVP Impact - SyQuest was speed. From power-on to Workbench was about 13 seconds. Click on Preferences and almost instantly it's loaded. Maybe it's not fair to compare to the two year old harddrive on my A1000, but every task seemed to finish in about half the time. I proceeded to load up the 20 MB of software and utilities which I use every day and put the machine to use as my main computer for a while.

The experience was very positive. Unlike my IBM-Bernoulli experiences, I found the GVP-SyQuest and Amiga-DOS combination fully compatible. All the software I used worked without a glitch, including disk back-up, disk-editing, file editing, and disk optimizing software. Constant writing from partition to partition and running for days caused no read/write errors or lock-ups. The unit seemed rugged and if you are careful with cartridge changes, it should last for years. The only time I needed to call the GVP customer service number was when I wanted to make a new cartridge auto-bootable. You can format any number of cartridges using the normal Amiga format command, but the GVP install process includes much magic to make them bootable. The secret is a program in the GVPScripts directory. Simply type GVPprepHD 0 FFS and the cartridge will be prepped, etc. (Note: you must type the second operand in all caps.)

After confirming compatibility and reliability, I turned my attention to measuring performance. A second harddrive was installed on the same 2000 and Impact controller to provide a comparison. This was a 45 MB Segate ST157N, which is rated at 40 milisecond access time. My tests included DIR and LIST operations, copies of large files, copies of sets of small files, and loading a 350 K program. I performed the same operations on the SyQuest, the Segate, and a standard Ami-

gaDos floppy drive for comparison. I also included the results of DiskPerf run on the two units. Finally, I copied 4 MB of data from the SQ 55 to the Segate and then in the other direction.

The Amiga operating system benefits from a harddrive more than any other computer I've used and I'd recommend the purchase of at least a 20 MB drive for anyone who does more than play games. As you can see from the data tables, the SQ 555 is just about as fast as the fixed drive, and at least 10 times faster than a floppy. So a purchase decision should be based on the cost/benefits of this drive compared to a fixed unit. GVP plans to package the SyQuest 42 MB unit, an Impact controller, the new EPROM kit and a second 42 MB cartridge for about the same price as an 80 MB Fixed drive and controller; (Current pricing for the Quantum 80Q hardcard is \$1450.) With this pricing, anyone who needs more data storage than 40 MB, or whose work is project oriented would be lacking not to consider the SyQuest 555 alternative. After all, its not very often you have a chance to buy infinity.

GVP Impact 2000-2/0 Controller -
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ProDraw

A Structured Graphics Program for the Amiga

by Edward L. Fadigan

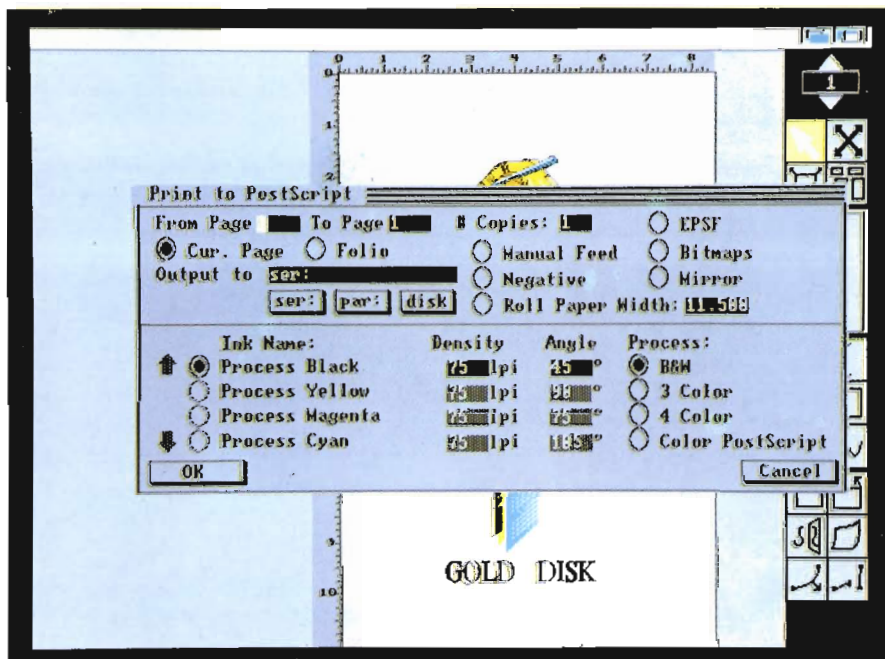
Gold Disk has added another program to its growing line of productivity software for the Amiga. This time they've come to the rescue of the graphic artist who needs high-quality output and doesn't have the time to be messing around with those leaky technical pens. Professional Draw is intended for those who work in advertising and design. It can be used alone, or to great advantage as a companion product with Gold Disk's Desktop Publishing program, Professional Page.

Professional Draw (ProDraw) is a *structured graphics* program designed to reduce the amount of "jaggies" in your printed work. It does this by drawing using vector objects, not dots. This approach is similar to CAD programs, which also use objects defined by their lines and curves. The difference between a design and a CAD program is the tools provided. ProDraw's tools are not oriented to measurement and depiction of real-life objects, but to letting a creative person work in color, line and form. ProDraw makes use of a mathematical family of curves called *Bezier* curves for all its text and lines. A Bezier curve requires only three points to describe and it is drawn smoothly and precisely. By changing the coordinates of any one of the

points, the shape of the curve changes, but not the smoothness. Professional design programs like ProDraw also address the need for very high quality output by translating what you see on your screen into a language called *Postscript* developed by Adobe Systems. Postscript also creates images,

come to characterize desktop publishing. The quality output by this process can be very high indeed.

ProDraw comes in a handsome box with two disks and a spiral bound manual. The main program is on one disk, with the fonts and utilities on the



This recent incarnation of Gold Disk's Postscript capabilities has built-in support for EPSF (Encapsulated Postscript Files)

graphic or text, by describing the elements of the image as points and lines. Every letter, circle, or curve is drawn in the PostScript output device's memory as a series of lines, then solid or shaded areas are filled. This results in the smooth letters and lines that have

other. Although ProDraw will work on any Amiga with at least 1 megabyte of memory, in order to use it comfortably, you should have two floppies drives or, even better, a hard drive. You'll also need Kickstart 1.2

(continued on next page)

ProDraw (continued from previous page)

or higher and Workbench 1.3. The program disk itself is bootable, and comes with the 1.3 printer drivers. The utility disk comes with a set of programs that will install the 1.3 printer drivers on your hard drive for you.

Double clicking the ProDraw icon brings up the program in one of several modes. These modes are configurable using INFO and Workbench. You can "tune" the ProDraw icon so that it starts in the mode most comfortable for you and your system. These modes are color or black and white, the use of a Workbench screen, or it's own custom screen. Running ProDraw on the Workbench screen will use less chip memory, but you'll be limited to four colors on your display screen. Any of the available modes apply to the screen display only. You can work on a multi-color picture in black and white wire-frame mode, or in full color "What-YouSeeIsWhatYouGet" mode. In all cases, the printed output will remain the same.

Once the program is loaded, the display will be very familiar to users of ProPage. The tool box occupies the right side of the screen. At the top of the toolbox is a page selector and a set of four pointing tools. Below that is the GoldDisk trademark sliding box for moving around the page. Next are the six drawing tools and finally six editing tools. Pressing the right mouse button reveals a series of menus; Project, Page, Object, Clips, Draw, Color and Preferences.

Although the screen may seem familiar, you'll find working with ProDraw unlike working with other Amiga graphic programs. With Dpaint for example, you can sketch your lines on the screen, laying down different colors as if you were using a pencil and eraser. With ProDraw you point and click your lines and shapes down as if using different thickness ink pens.

There is no sketching your lines. In practical terms, you had better have an idea what you want your illustration to look like before you open the ProDraw drawer. ProDraw allows the import of IFF bitmaps to trace over, so it's a good idea to do your experimenting with either a paint program or a digitizer.

Let's start by selecting a pen thickness of 2 points and a color of blue. Note that this pen thickness refers to the thickness of the line on the printed page, not as pixels on the screen. If you're in WYSIWYG mode, lay down a line and your line will appear at the resolution of the screen. Zoom in on that line and it will appear thicker and STILL be displayed at the resolution of the screen. You'll see none of the blockiness or "Fat Bits" associated with zooming close up in other paint programs. The display will always be the best that the current screen resolution can deliver. With WYSIWYG mode turned off, all lines will be displayed as one pixel thick, no matter what the magnification.

The tool set provided by ProDraw includes: the Pen, Text, Ellipse, Rectangle, Grid, and Freehand Tool. All your work must be created with these six tools. The Pen Tool will draw a straight line at the current pen thickness and color. The line is created by moving the mouse and clicking to indicate two anchor points. Continue pointing and clicking to create a path of straight line segments. Dragging the mouse after dropping an anchor point will cause that line to curve in a tangent towards the next point. This is the way that almost all paths are created with ProDraw. The other tools are used to make pre-defined geometric shapes. Point and click twice with the Ellipse Tool and an oval will be created with those dimensions. There are no separate tools for Squares or Circles. Instead, you use keyboard commands

to make an ellipse into a circle or a rectangle into a square. Using the ALT key constrains rectangles to squares, ellipses to circles, and tangents to 45 degree angles. The SHIFT key forces a previous line segment to become a straight line when editing a curve. The CTRL key forces two end points to be joined together in the same situation. In this way, ProDraw can offer you many tools with a minimum of icons cluttering your display.

The freehand line tool is a special case. You can use it like the Dpaint continuous line tool. Just sketch away, and the program will create control points and Bezier curves that fit your sketch. Used carefully, this tool can perform many tasks that the more rigid shapes cannot. The disadvantage to the freehand tool is the large number of control points which are produced. With many points in an object, editing and moving become difficult. You might be tempted to load an IFF picture and trace its areas using only freehand. This will work, but it's worth the extra time to fit lines and curves where possible.

Creating text involves selecting the text-bar tool then pointing to a location on the current page. A text requestor will appear where you select font, point-size, and slant. A string-gadget is included on the requestor. You type your text up to a maximum of 255 characters in this gadget then click on OK. ProDraw will spin its fonts disk and present the busy indicator for a while. When the text finally appears onscreen, you'll notice that it is made up of many lines and dots. The lines make up the outline of each letter and each dot is a control point. Text created in this manner can be manipulated in amazing ways. Any letter or word can be resized and stretched like any other object made with ProDraw tools. Text can also have different sized outlines and colors. Gold Disk provided two

fonts for ProDraw in many sizes. One is a plain "swiss" style and the other is fancy. These two can be used in many situations, but since the font format is unique to ProDraw, we can only hope that other fonts will be on the way soon. The limit of 256 characters for each text object makes structured-text useful only for headlines and such. If you need to design with large blocks of text, you should import your ProDraw illustration into ProPage 1.3 (when it is available).

There are six editing tools which provide much of the power in ProDraw. These are: resizing, rotation, mirror, distortion, cut and hook. Since all parts of a drawing are represented as mathematical objects, resizing an object or letter does not alter its precision. In contrast to Dpaint and all other bit-mapped graphic programs, Prodraw zooms or rotations produce NO JAGGIES. The resizing, rotation and mirror tools all work similarly. First select the tool, then click on one control point of the object you wish to change. Now move the mouse and click a second time. Hold the left mouse-button and move to expand, rotate up or down, or mirror left or right. The changes are shown on screen so you can be sure of what you are doing.

The distortion tool starts off in the same manner, but provides unlimited creativity since you click on a control point then hold the mouse button to bend the entire object around the movement of that point. If you start with a rectangle and distort a point on the bottom by pushing it in towards the center, you can create a boomerang shape quite easily. The hook tool is used to add more control points along a line and the cut to remove them. More control points means a more complex object, the less points, a simpler one. To "draw" a complex object like the hands used on ProDraw's box, the artist must carefully place a series of curves

on the page. Then the lines are moved and adjusted to give the desired effects. Changing objects attributes is done through ProDraw's menus. Select an object using the pointer, then choose an option from the Draw, or Color menu. The draw menu includes selections for line weight, pattern, join type and fill. A high degree of control is provided here including custom line patterns and weights. ProDraw lets you assign black, white or one of seven grey shades to a line or fill area. You can also define your own colors and save them as sets to reuse in other drawings. To create a color, choose define on the Color menu. A requestor will appear with the familiar Amiga-style Red, Green, and Blue sliders. Another option on this requestor is very important for printing. You can specify percentages of Yellow, Magenta and Cyan to create colors matched to those provided by professional printers. While this is not exactly the Pantone system of color specification, if you have a Pantone catalog you will find the YMC percentages for each color. You can even specify that a color you have created is not to be separated in postscript output, but placed on its own page as a "mechanical color." This control of color specification is not critical when printing to color dot-matrix or inkjet printers, but is vital when using ProDraw in commercial applications where the Pantone color-set is an industry standard.

Other operations on objects (text or graphic) are handled through the object menu. Here you can group or ungroup several objects. You can create a copy of any selected object(s) by pressing the TAB key or using the menu choice "Clone." You can control the placement of objects over one another, and even lock objects so that they are immune to further changes. Finally, you can delete selected objects through this menu or by pressing SHIFT-DEL.

Varying magnification is an important part of using ProDraw. One of the pointing tools is used to outline the area you wish to zoom on. You can zoom in up to 8 times magnification for precise work. If you double click when selecting the zoom gadget, a requestor lets you type-in the specific magnification you desire. Single keys can be used to zoom in by 2 (-) or zoom out by 2 (+). Pressing the 0 key will show the full page, and 1 will show the page at 100% of actual size.

ProDraw provides for operations on Folio's, Pages and Clips, as well as objects. A Folio is a group of pages and can be loaded or saved together. A single page can be created, saved, loaded, and altered. Page creation and alteration define the size and format of the page (e.g. 8.5 by 11 horizontal). Clips are ProDraw's version of brushes. You can create an object, select it and save it as a Clip for use in other folio's or pages.

Although ProDraw's power lies in it's creation of these "structured objects," it also allows you to include bitmaps in your printed work. These can be IFF files created with a paint program, or digitized HAM pictures. A major reason for including Bitmaps is to trace them using structured-tools and color areas. The traced design can then be resized or modified and output without jaggies. This is particularly useful when an artist wants to include a scanned or digitized image in a design. There may also be reason to include "native" IFF files as part of the design. Raw bitmaps do not look as clean and smooth as the structured objects when printed, but the ability to include them in your document is a great feature. When your page is finished, it can be printed on anything from a dot-matrix printer to a Linotronic Typesetter with

(continued on next page)

ProDraw (continued from previous page)

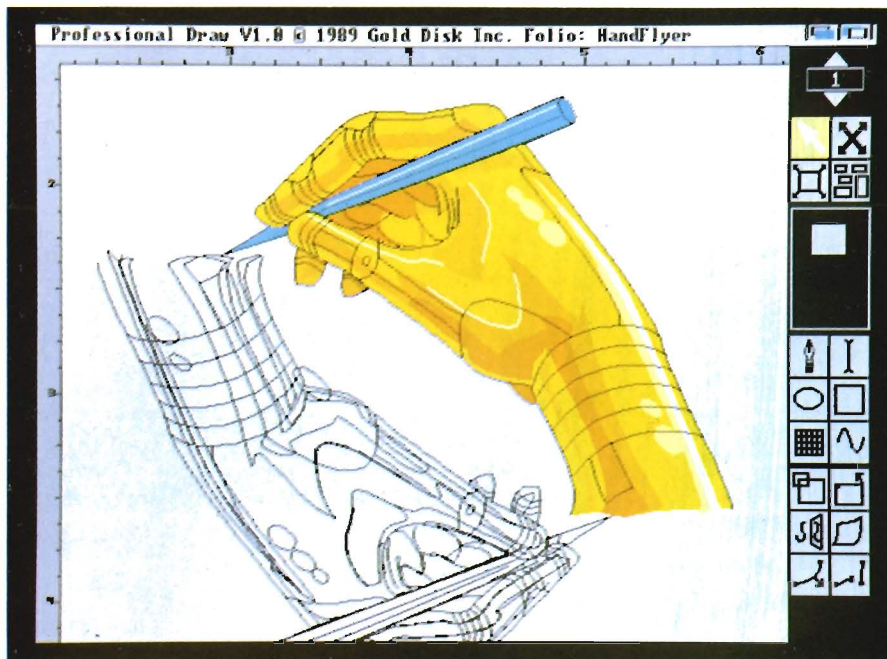
marvelous results. Any printer that Amiga preferences supports, and will also print graphics, will print ProDraw's documents to the best of its ability. Testing with a variety of printers verified the very real benefits of structured objects and text. From a 9 pin Epson clone, to a 120 DPI, Canon PJ-1080, to the HP Deskjet at 300 DPI the entire drawing is reproduced at the full resolution of the output device. ProDraw is the first Amiga program released to break the PostScript monopoly of high-quality dot-matrix text production!

In some ways it's hard to believe that ProDraw is a just-released Amiga program. We're all used to gaps and problems with first releases, not to mention visits from the GURU. In these respects, ProDraw seems more like a third release. It is extremely well behaved and difficult to crash. The file requestors, menus, provision of keyboard equivalents and mouse actions are all predictable and very functional. You can double click on any tool and a requestor will pop-up to allow direct numerical input for speed and precision! Now that's a well thought-out user interface.

In other ways ProDraw is in need of speedy enhancement. Let me qualify the comments that follow by stating that I work 8 hours a day with a similar program called "Freehand" on a Macintosh II. ProDraw is obviously meant to compete with Freehand and Adobe's

"Illustrator." If Gold Disk is seriously aiming at this market, then how could they release a professional program without an UNDO feature? When I couldn't find one, I turned to the index which ends with "tutorial." I was sure that a page was missing from my manual. UNDO is part of the beauty of using computers for this type of work. The ability to experiment is the forte of computer graphics. The exclusion of an UNDO makes it necessary to save

on an object a requestor will pop-up showing the number of points in the object. You can quickly change a box to a triangle by retyping this number. There are more suggestions I could make but I'm sure that Gold Disk is well aware of the competition. I can only hope that release 1.1 will include Undo and several other improvements which will make ProDraw less stiff and cumbersome.



This impressive ProDraw illustration is made up of many layers, which took a considerable amount of time to create

your work before every major move.

Other notable omissions include the lack of alignment tools, object requestors, control over points, and movement constraints. There are many occasions when you need to align two or more objects by their centers, or tops, or top to horizontal. The Mac programs include a wealth of these features. Although ProDraw is working with structured objects and control points, you cannot delete a single point, or change it from a line anchor to a tangent control. In Freehand, if you double click

Finally, I must mention speed -- or more accurately the lack of it. ProDraw provides a WYSIWIG, high-resolution color mode, but once you are working with more than two simple objects, screen refresh becomes snail-like. In practice you will work in black and white, wire-frame mode which reduces the immediacy and accuracy of the artists vision. (I also used the ProDraw option which suspends redraw until the space bar is pressed.)

ProDraw's slowness makes one afraid to "see what your picture looks like stretched a bit." Those of you with a 68020 CPU or a math co-processor will not suffer quite as much. For the rest of us, I'd recommend that Gold Disk hire the author of IntroCad as a consultant as soon as possible.

In conclusion, ProDraw deserves recognition for several Amiga firsts: great looking dot-matrix results, structured fonts and objects, "Pantone-like" color, and camera-ready color PostScript out-

In these printouts from an HP Paintjet, the virtues of structured drawing become apparent. The adjacent copy is a direct bit-map dump from ProDraw. In the example below, areas of the bit-mapped image have been traced and the appropriate fill colors assigned, resulting in a much more defined image with solid colors.



put. Along with a consistent and solid user interface, ProDraw can be used to produce many types of design work not possible on an Amiga until now. This is more than enough to justify a purchase for many Amiga users. However, until a number of improvements in features and speed are included, I could not recommend ProDraw for use in a high volume-high speed production environment.

ProDraw \$199.95

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The Anomaly



Color Splitter

Electronically Separate Video into RGB Components

by Thomas Reed

I knew what had to be done and SunRize Industries knew how to do it. A local realtor presented me with the following request, "We want you to design a data base that includes statistical information about a property and has a picture of the listing." They wanted their agents and clients to get as complete an idea about the property as possible. Not too difficult a project if they didn't need color pictures in the data base. Black and white images - no problem! Color files - a problem!

I wanted to use a digitizer that I already owned and liked for the project. The problem seemed simple - send separate red, green and blue signals to my digitizer. However, the answer was not so obvious. Databases for the Amiga regularly include the option for IFF picture files. Some data bases can even handle color picture files of any resolution. That wasn't the problem. The problem was how to digitize many picture files for use in the data base.

A number of possibilities existed: take color prints or slides and then convert them to digitized files using the conventional method, figure out a way to take the computer setup on location to digitize the listing on site, or

record the properties on video tape and then convert the composite signal to IFF files. The last idea seemed to be the most practical method except for the lack of a way to get color images from a previously recorded composite video signal. I had to have a friend make a special cable to get an RGB signal to a Polaroid film recorder. This cable worked well. So, I decided to check back with the party concerned to try my luck again. Consultations yielded no satisfactory results. I checked with a friend that has an RGB video camera. The camera had a different syncing system and was not compatible.

I knew what had to be done and checked with Sentry Editors for something that might help. Fortunately, SunRize Industries had recently introduced a product which might be the answer. A Color Splitter! A Color Splitter electronically separates a composite NTSC video signal into its RGB components for use with video digitizers. The Color Splitter from SunRize Industries is compact and efficient. The package comes with the main unit, an external power supply, and a manual. The case dimensions are approximately 4 1/2" x 4" x 1 1/2." The front panel has two knobs. One adjusts saturation and one controls hue. On the far right of the front panel is a three position RGB switch to select the output of the video signal. The back of the unit has connectors for

video in and out, 15V DC power connection, an "L" jack for a S-VHS luminance input, and a special color splitter connection to be used with SunRize Industries Perfect Vision video digitizer.

The 12 page manual provides useful information on how best to digitize images with the Color Splitter. There are brief sections on setting up the hardware, digitizing an image, using composite video or super VHS (to use super VHS a small jumper cable must be cut), and trouble shooting. Because of the variety and diversity of equipment that can be used with the Color Splitter numerous hints and suggestions are offered if you are running into problems. Despite this list of potential problems, I encountered none of them with the equipment that I was using.

Using the color splitter is extremely simple and efficient. I used my DigiView digitizer to conduct tests of the device. I found setup of the unit to be easy. With my Panasonic S-VHS AG-450 camcorder aimed at a set of wooden animals on a desk, the composite video signal comes from the camcorder to the video in jack of the Splitter. The signal connections continue from the video out of the Color Splitter to the DigiView unit connected to Amiga. With the three position toggle switch in the top position (R), I merely press the right Amiga key and "R" and

my first exposure is made. Move the switch down one position (G) and press the right Amiga key and "G" and the second part of the process is complete. Repeat the process for the blue portion of the signal and you have a digitized color picture. Display your picture and enjoy. No more filters to hold in front of the lens of your camera! No more blurred images from knocking the camera during the exposure! Simple! Easy! Effective!

It is worth the price of the Color Splitter to set aside the red, green and blue filters. This is a vastly more civilized process.

Using the unit in place of your filters is an improvement on something you can already do. But, you cannot use your filters to digitize an image that has already been recorded on to video.

Enter the Color Splitter. Feed your recorded composite NTSC video signal into the Color Splitter and it will separate the signal into its component red, green, and blue elements necessary for this type of additive color mixing. This results in a color picture that is similar to the ones done conventionally with use of the filters.

The Color Splitter now makes it possible for me to record on video the homes and properties that the realtor would like listed in his data base. First the sites are recorded on video tape. The tape is reviewed and frames selected to use in the data base. These selected frames are then digitized using the Color Splitter. The digitized images can now be loaded into a paint program or an image processing program to touch up or manipulate. Many times I will resize a picture with PixMate or edit out areas of an image with one of the paint programs.

To get an idea about the quality of the image processing ability of the Color

Splitter I digitized the same objects once using the filters and another time using the Color Splitter. It seemed that there was slight improvement in the quality of the image that was digitized using the Color Splitter. My computer "work station" includes a Panasonic

developed and printed out for client review. A sense of order can be brought to my video collection by digitizing highlights of the contents of a particular video and storing them on disk, or even printing out the pictured scenes into a catalog. Being able to freeze a frame

An image of the Color Splitter produced with the Color Splitter



digital S-VHS tape deck, a Sony PVM 2030 Trinitron monitor as well as an Amiga 2000. This set-up gives me many of the features found in systems costing many times more. The digital S-VHS deck will do freeze frames, mosaics, posterizations, zooms, strobe effects, and four or nine screen divisions with individual video frames presented in each of the areas. Now, with the Color Splitter, I can store these processed images in my computer as IFF files.

If I am working on a video presentation, individual scenes can be stored with appropriate notes or editing information. With a color printer or a black and white printer, story boards can be

of an on air program permits me to do a full color digitization. My project list for the Color Splitter has taken on enormous proportions. This list of creative endeavors will be fun to undertake with a product that is straight forward, easy to use and yields fine results. Now all that I need is a winter storm to provide the unexpected time I need to work on these projects.

Color Splitter \$99.95

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Superplan

A New Spreadsheet from the Makers of Superbase

by Glenn M. Heck, Jr.

Superplan is Precision Software's latest entry into the Amiga business productivity software field. It lists an impressive array of features, including the traditional spreadsheet features, time management and scheduling, and powerful graphing capabilities. It contains its own powerful macro commands and is compatible with the ARexx multitasking programming environment. Compatibility is assured

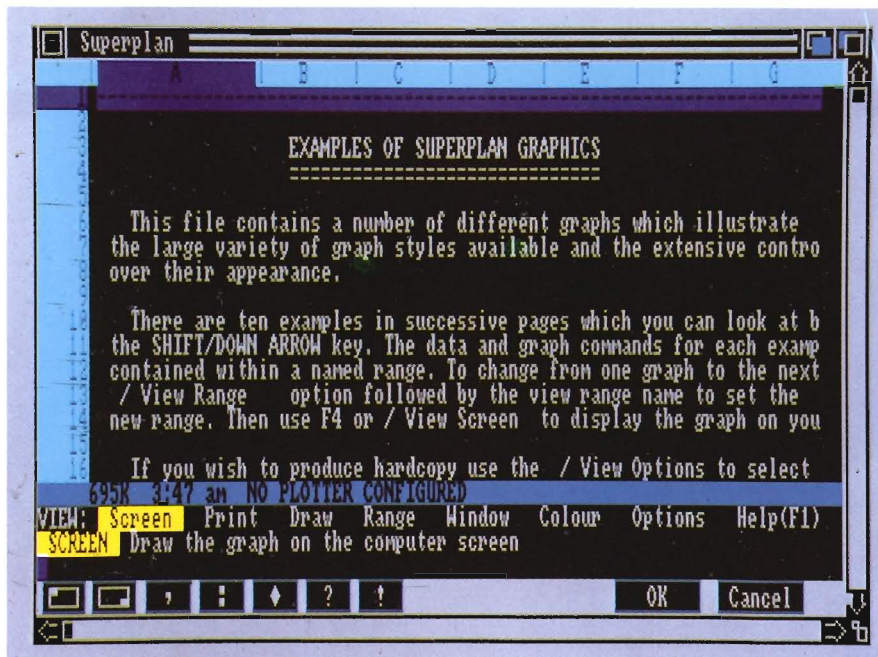
since Lotus 1-2-3, dBase, Logistix, text, DIF, and CSV files can be automatically transferred into and out of Superplan. A complete turn key application can be designed and implemented from within Superplan, using custom menus, autos, macros, and ARexx modules. Precision's Superbase Professional relational database includes specific commands for reading Superplan's spreadsheet cell data directly into Superbase variables. After spending a few minutes using Superplan, I had a strange feeling of *deja vu*. A glance at the copyright page of the manual confirmed my suspicions. Su-

perplan is a reworking of the Logistix spreadsheet from Grafox Ltd. in England! Add mouse control, menus, and the ARexx interface to the original LGX and the result is Superplan.

In order to use Superplan, you must have a minimum of 1 Megabyte of memory. I am reviewing the program with 3Meg on my 2000 and running it off of an internal hard drive in high resolution interlace with a Flicker Fixer. The manual is an extensive, spiral bound book containing a 35 page introduction, six sections, appendices, a glossary, and an index. Also included is a Quick Reference card containing a brief description of all special keys, functions, slash commands, graphics commands, and samples of the available graphics fonts, lines, hatching, and graphics markers.

The introduction covers all aspects of the program with quick examples of each. The Users Guide contains detailed explanations of each feature. Part one is the longest section and describes spreadsheet operations. Part two explains the use of timesheet functions, part three, describes the database, part four describes graphic commands, and part five gives detailed examples of each aspect of the program. The last section in the manual (missing from the table of contents) describes the auto and macro features and how to develop automated procedures. The three appendices include error messages, a comparison

Superplan's main worksheet screen



with Lotus 1-2-3 operators and functions, and a section on designing custom menus. A second disk contains example files which can be used with the manual while learning the various features. Although the manual is complete and well laid out, I found several places where descriptions did not correspond to examples on the disk and even references to the program as Logistix rather than Superplan! It appears that more time should have been spent proofreading the manual.

Superplan defaults to medium resolution, which gives twenty three visible rows on the spreadsheet. High resolution brings the total visible up to forty rows. The spreadsheet is a grid of cells made up of 2048 rows and 1024 columns. This allows for over two million cells of work space. Rows are numbered and columns are designated by letters of the alphabet. Up to four bit plains (16 colors) can be used to modify the appearance of the spreadsheet. Separate colors can be used to show borders, the cursor, rows, columns, protected cells, commands and background.

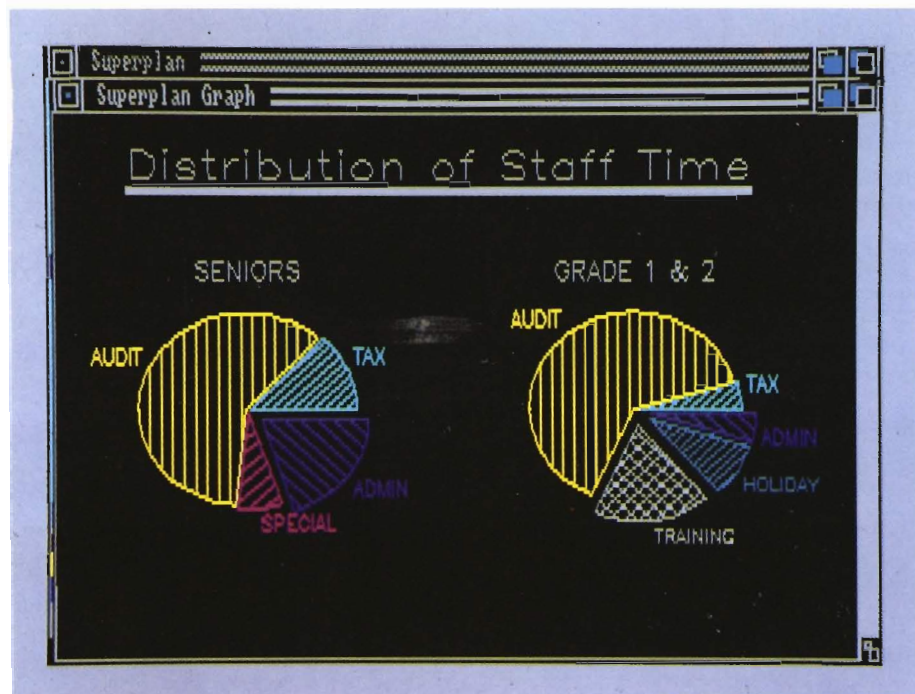
At the bottom of the screen are four additional lines and a space containing several mouse gadgets. The first line is a status line. It gives you information about available memory, the current system time, and the contents of the active cell on the spreadsheet. Below the status line is the prompt line. This line lists the available options at any point in your work. Line three is the help line containing a quick explanation of the selected option. The final line is the entry line. This is where you input information for placement into the active cell. At the bottom of the window are gad-

gets for accessing the more common commands directly with a mouse click.

There are gadgets for moving to the beginning of the sheet (home), the bottom of the sheet, defining ranges of active cells, resizing the window, forcing recalculation of formulas within the spreadsheet, and access to the help files. Although these gadgets were useful when first beginning to learn the program, I quickly reverted to key

mands from the keyboard much less tedious. After a relatively short learning curve, it's nice to be able to keep my fingers on the keyboard and avoid reaching for the mouse. The only feature of Superplan not available from the keyboard is the graphic dump to an IFF format file.

Menus can be easily redefined and personalized by modifying the text file,



commands. All commands can be accessed through the keyboard using slash (/) commands or can be called up by clicking with the left mouse button on command abbreviations listed on the prompt line.

At the top of the screen standard Amiga menus can be activated to access the most common commands. The slash command keystrokes are listed to the right of each menu item. Again, although it is nice to have the menu available when first learning the program, I quickly found entering com-

SP.MNU, with any text editor. Menus must be defined following a specific order. After specifying the number of menus, you must begin with the left most menu and define each menu with its options and sub-options in a logical order. The documentation warns you to make a copy of the original menu definition file and modify only your working copy. If you make any mistakes in the menu definitions, program operation will be affected (you may even get a visit from the GURU). Since any combination of slash commands
(continued on next page)

SuperPlan (continued from previous page)

may be included in a menu option, it is possible to use this menu editing feature along with MACROS to create "turn key" applications.

Available slash commands, functions, and operators compare favorably with those found in other spreadsheet programs with the notable exception of functions for determining standard deviation, the sign of a number, and returning the remainder in a division (modulus). Superplan includes several math functions not found in Maxiplan Plus, including the ability to convert angle measurements from degrees into radians and back. Superplan includes mathematical, logical, time, calendar, statistical, database, financial, and special functions for a total of 74 unique functions. The program includes the five standard arithmetic operators (+, -, *, /, ^) and six logical operators (<, >, <=, >=, =). Slash commands unique to Superplan allow access to the time management and project planning features of the program.

The spreadsheet and database features of Superplan are similar to the other professional level spreadsheet programs, although I would like to have the ability to select ranges on the spreadsheet by dragging the mouse over the desired range. The quickest way to define a range is to execute the range definition slash command for the feature you want to use, click in the upper left corner of your desired range, click the "colon" gadget at the bottom of the screen, and click on the lower right cell of your desired range. If you know the first and last cell of the range, you can simply type the first cell into the keyboard, type a colon, type the last cell, and press return. Ranges can also be named, allowing for quick access. One feature unique to Superplan is its ability to create timesheets to help in the planning of complex projects. Using the /Calendar command,

you first set the defaults for time units, from half-hours to years, the number of days in a working week, and the starting date for your calendar. Once you have set these defaults, you can modify your calendar, setting work hours and work days for your situation.

Next, you link your calendar to a specific area of the spreadsheet. Constructing the timesheet now simply involves using one row for each worker, and within that row, using the <Time command to define the name of the job, the amount of time needed to complete the job, and the row and column in which to place the timeline for that job. Entering the command, <"research",6,2,2 creates a timeline named "Research" covering six cells beginning in cell B2. After creating your timesheet, the /Kritical command may be used to define jobs within the project that must be completed in a strict sequence. This critical path will be automatically marked on your timesheet and job sequences will be modified if necessary so that a job which relies on the completion of another job will be scheduled properly. Once a timesheet is completed and a critical path has been developed, it is simple to create "what-if" situations to see how timing of the entire project is effected. Since <Time commands can reference information from other parts of the spreadsheet, it is very easy to link together a table of subcontractor schedules and costs with an accurate, adjustable timesheet.

Despite my enthusiasm for much Amiga software, business graphics on the Amiga have remained been a disappointment to me. Each new product offers outstanding graphics support and each falls short of my expectations. What about Superplan? With trepidation I loaded the sample file named graphs.ssp. When printing graphs from Superplan, you first choose where to send the graph. You

have the choice of output to a graphics window, to the preferences printer driver, to a built-in Superplan driver, or to the supported plotters. To make a long story short, the printout of graphs created with Superplan is fantastic!

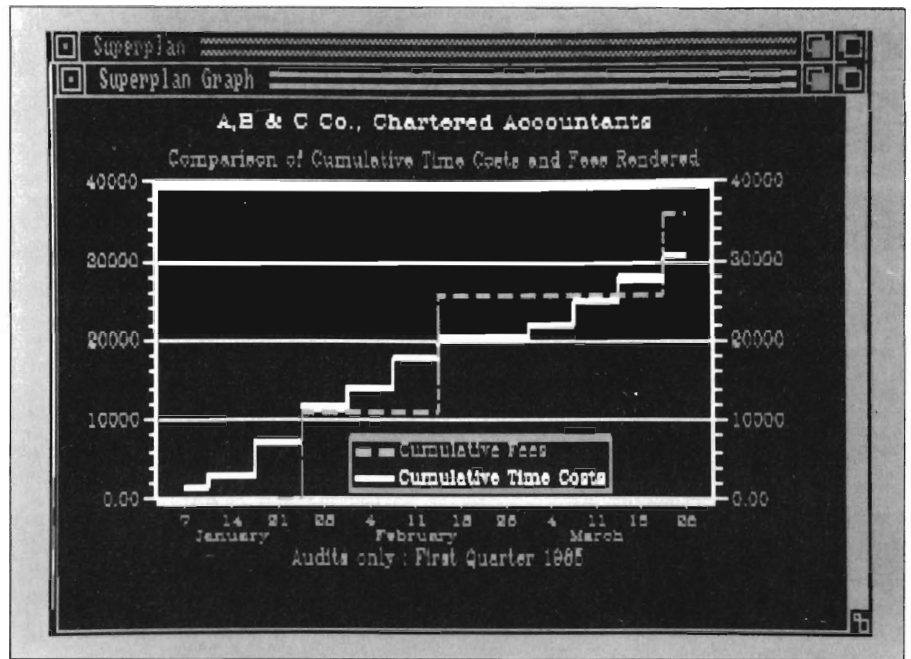
I own an HP Deskjet printer, which is not listed as a supported driver but the HP Laserjet is, so, I chose it as my selected driver. Next you select the orientation and size of your printout. Graphs may be printed on a full or half page, and either horizontally or vertically. Finally, assuming that you have designed a graph, using the Graph commands, you simply use the /View Print command to send the graph to your printer. The program does not simply create a graphic dump of a bit mapped screen image. It uses any combination of ten unique, plotter-like fonts, each available in ten sizes, to create clean, fine line text. When designing your graph, you have the choice of any combination of font types and sizes, ten different line styles (each in one of ten different thicknesses, ten styles of hatching for bars, and ten graphics markers (or any standard key character) for use in scattergrams.

With a color printer, you also can choose from ten different colors. Graph types include individual or common pie charts (with or without exploded sections), clustered, stacked, or floating bar charts, line graphs, step graphs, spread graphs, tick graphs, spread and tick graphs, scattergrams, and gantt charts. Many of the graph types may be used together, and printouts can include up to four unique graphs on one sheet of paper. You have complete control over all aspects of the graph including axis definitions, multiple labels for each axis, axes box, graph framing, axis limits, titles, grids, legends, footnotes, and annotations for each set of data. Descriptive text may be added to the graphs with any font

style and size and tabs may be set at any position. There are over thirty different commands, each with several options available for designing graphs. Superplan really does deliver the business graphics it promises.

Superplan also allows the easy creation of automatic programs, AUTOS which can be run by a single keystroke or from within the AUTO menu. Creating an AUTO is a simple process. First you select the /Auto Edit command. Within this command you will be asked to enter the activating key combination and a name for the AUTO menu item. Next, you simply carry out the procedure as you normally would. To enter non-ascii (cursor movement, control, alt, or function) keys you must use a three letter command preceded by the ">" key. Once you have defined an AUTO, its name will automatically be added to the AUTO menu and you can run it by either pressing the defined key combination, or by selecting it from the mouse menu. AUTOS differ from macros in that the AUTO does not appear anywhere on the spreadsheet. You create a MACRO by actually entering its commands on the spreadsheet. A MACRO can be of any length. The only limitation is 254 characters per line. Macros are entered into the spreadsheet in the same way as text. Successive lines in any MACRO must be entered in successive cells in the same column.

Although multiple commands may be entered on a single line, it is recommended that you create your macro with one command per line. This will make debugging much easier. All MACRO commands may be entered directly as text or you may use the /Xecute Learn command to help you automatically place all key presses into your MACRO. Successive MACROS can be linked together by ending each MACRO with the >RUN command



A variety of graphing capabilities are supported with Superplan

and the >SUB command allows you to call up a MACRO from within a MACRO and then return control to the original MACRO. "Turn key" applications can be created by simply defining your first MACRO in a field that you have named START. In combination with the ability to define your own menu, it is possible to mask the Superplan environment completely from a user. More than forty unique MACRO commands are available to give you access to virtually all of the features of Superplan, including automated control of disk files and the printer. With the use of Arexx commands, you can access data from other applications, run any Arexx module, or send data to other applications. (You must own Arexx, available separately, in order to access the Arexx functions.)

Superplan is an impressive piece of software. It stacks up well against all of the available spreadsheets for the Amiga. The only bug I noticed while exploring all of its features was a weird

tendency to get stuck with an infinitely blinking cursor when I mistakenly clicked the mouse on the screen when defining the default starting date within the /Calendar Options command. Unfortunately, the only way I could get out of the bug was to warm reboot the system. Watch this one! Superplan's powerful graphics capabilities and crisp, clean graphics output along with the unique timesheet functions are enough reasons for me to make it a permanent part of my software library. Although I would like to see mouse control of range definition and a more carefully prepared manual, Superbase has become my spreadsheet of choice.

Superplan is dangle protected with the option to purchase a non-protected version at additional cost.

SuperPlan \$149.95
 Precision, Incorporated
 8404 Sterling st., Suite A
 Irving, TX 75063
 (214) 929-4888

WILLOW

The Memory of Willow Ufood lives on

by Anthony Bevivino

The documentation for Willow begins: "In a far off time when magic was real, and an evil queen threatened all that was good, a trio of unlikely heroes joined in an epic quest. The story of their adventures is recorded in the magic scroll you now possess."

And so it begins... Upon loading Willow, you are presented with a realistic image of a "scroll" on your monitor as tiny music plays in the background. You move the scroll up and down by positioning your mouse pointer. Move towards the top of the screen, and the scroll rewinds, down and the scroll advances to let you read through the adventures detailed on the magic scroll. At certain points on the scroll, a few words are highlighted. Click your mouse button while over one of these words and you will enter into a specific portion of the game in "practice mode." This is a pretty impressive and novel opening sequence. You can play the game in any sequence and as many times as you like as long as you are in "practice mode." To begin the game in earnest, you must click on the first highlighted word, "Willow," and face the perils that lie ahead. Those of you who missed the movie should visit your local Video store and prepare for a treat.

George Lucas, of StarWars fame created this masterful combination of adventure, fantasy, and heroism and it is as successful in its way as the StarWars fantasy. In the film, Willow is an unlikely hero who enters a quest to save the baby, Elora Danan from the evil queen Bavmorda. This child is destined to overturn the evil empire of Bavmorda who is determined to capture Elora and reverse her fate. In the game you engage on the same quest which is adequately explained in the documentation. You will play several roles and must overcome various obstacles (detailed below) to save the baby from certain doom. This is a classic Good vs- Evil adventure, and has great potential.

For those who saw the movie, many of these sequences will be very familiar. In fact, every part of the game is taken from a scene in the movie. Lets look at each of the eight game scenes, evaluate the content of each and then see how the game, as a sum of its parts, measures up.

The first selection available on the scroll is the word "Willow." By select-



ing this option, you enter the game and play each sequence in order. You only have eight chances, and if you fail, the forces of Good will be vanquished forever. Before you choose this option, you should get familiar with each sequence in "practice mode."

The next option is to enter the "Dungeons." In this portion of the game you are Ethna, a brave Daikini woman who is trying to flee the dungeons with the child. I was extremely disappointed with this portion of the game. The graphics are a depiction of a typical stone dungeon as seen from eye level. They are of average quality at best and there is NO scrolling. Each

time you click on a door to enter, the old screen dissolves and a new one re-forms. This is a slow method and takes away from the suspenseful atmosphere needed to make this portion of the game successful. I also feel that it is outrageous to have NO SOUND in this portion of the game. You read it right the first time... NO SOUND. You can imagine how tedious it becomes to silently go through a maze of rooms that dissolve and re-form. If you are expecting a mighty beast or deadly trap to stand in your path, forget it. There are two "challenges" in this scene, one is the guards and the other is traps. This could be interesting, except there is no way to detect them. A room with a trap or guard looks like any other room, and once you walk in, you are done for. The only way through this maze is continual tries while making a map. It seemed to me that Willow was not off to a very good start.

The second scenario showed some improvement over the first. You are Willow and must get through the treacherous "Nockmaar Woods." Standing in your way are the queen's evil guards and viscous Death Dogs. You must evade them in the Woods and this is no easy task since you are outnumbered and not as fast as the Death Dogs. The only thing that will help you are the three magic acorns which you possess. These turn whatever they hit into stone. Use them wisely, they are vital. The graphics in this portion were a little better than the last, and there is even some scrolling. Once again, there is no sound, much to my dismay. This portion of the game was actually fun to play. It offered some challenge, and kept my attention. The major drawback is that it is a very short scenario, and it takes less than a minute to complete. The next portion



of Willow is the "Daikini Crossroads," and I found this scene to be one of the most disappointing of all. Once again, you are Willow, and the warrior Madmartigan is imprisoned in one of two cages at the crossroads. In order to complete this portion, you choose a cage, right or left, and you either succeed or fail. There are no hints that I could find, and it seems that pure chance determines success. There is no sound and the graphics are sub-Amiga par .

"Spellcasting" is the next portion of the game. You must try to turn the sorceress Fin Razel back into a human. You must do this three times when playing the actual game. The way this is done is by choosing three of the thirteen runes at the bottom and hoping. Once again, I found no skill involved. I either picked the right runes or I didn't. The graphics for this are appropriate for this portion of the game, and the concept is good, but it is just not developed. You now come to the "Ice Caves" section of Willow. Madmartigan and Willow must escape the ene-

mies camp by sliding through ice tunnels on an enemies shield. This portion of the game is a lot like the "Dungeon" section . you have three choices, right, left, and straight; and once again you are given no hints, just a hearty "Good Luck!" There is some attempt to have this scene scroll, but it just doesn't cut it. The graphics are poor and, once again, there is no sound. I also found control of the sled to be erratic.

Now comes the final assault on the castle, and you, Madmartigan, must face the mighty General Kael in the "battle." You must duck or jump over a series of axes, spears, etc. before you reach the General. The battle itself is very anti-climatic. There are a limited number of moves and the characters are small. They are also just the right color to blend confusingly with the walls and make it that much harder. The usual can be said for the graphics and sound. In fact this scene makes it clear that the Amiga version of Willow is a port from a less capable machine. The movements and resolution of the characters are way below Amiga standard.

If you complete all scenes, in the "Willow" mode, you will then reach the "Final Battle" with the queen. Here you must complete the spell that will stop the queen, but this time you have to guess your way through nine symbols instead of three.

Now that we have looked at Willow as individual pieces, we can see how it stacks up as a sum of these parts. It should be painfully obvious that this game is, at best, not at all what it could have been. The graphics remind me more of the "sprite graphics" used on my trusty Commodore-64, or a rather

(continued on next page)

Willow (continued from previous page)

straight MS-Dos port. I also expected some digitized sounds from the movie, but there was a conspicuous absence of sound except for the occasional "oof" in the "Battle" scene and an annoying "click" sound whenever a button was pressed. Combine this with poor scrolling around dungeons and ice-caves and we have a real disappointment in the visual appearance department. The controls for the game were not bad overall. Mouse, joystick, and keyboard can be freely interchanged and work fairly well.

This game also presents very poor gameplay. Any adventure game where pure chance plays such a vital part in your survival is not worth playing. A good game requires mastery of skill or

application of problem solving which rewards the player. To say I was displeased with this aspect is a grave understatement.

One final piece of irony is that Willow has the most extensive copy protection I have ever HEARD. It will make your disk drive sound like a cross between a chainsaw and a machine gun, at boot up and throughout the game. Once you have completed a section you must listen through the entire loading sequence again. I expected a "Try again?" requestor but the authors of Willow provide no such thing. The game constantly loads and reloads, and this is not a speedy process. Perhaps if a little more programmer time had been given to the game,

rather than copy protection, the result would have been a Willow worthy of the film.

In closing, if you just like to collect things "Willow," this game may stir pleasant memories from the movie. If you have never seen the movie, however, this product, as an Amiga offering, does not stand on its own merits.

Willow \$39.95

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Antic Software
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MM8Y

Distant Armies

A History of Chess through Playing

by Walter Steuber

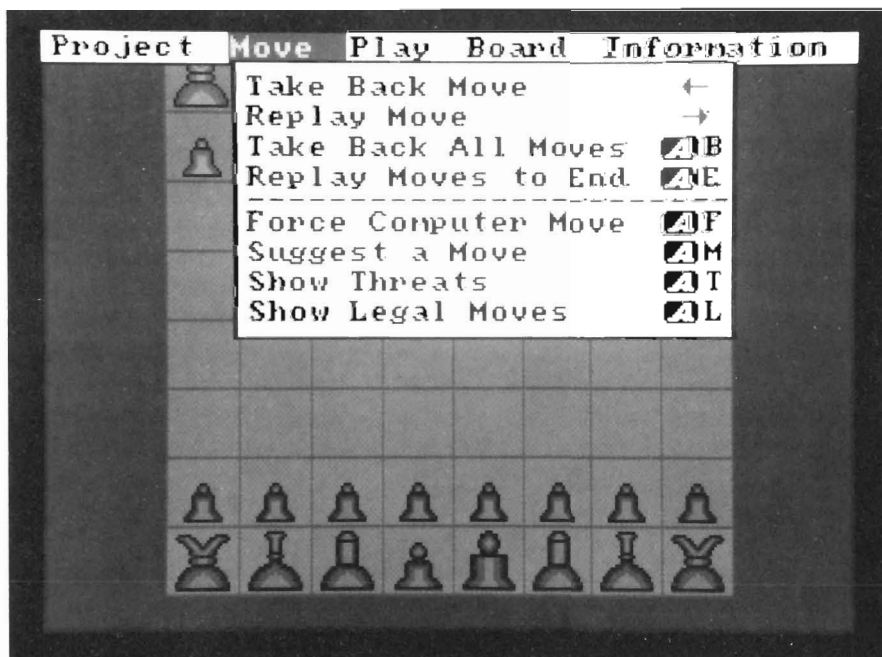
For unknown centuries people have been experimenting and diddling with moves in board games to maximize the excitement and interest. Chess, especially, has been tried out in many, many variations over the past fourteen centuries and in just about every country of the world. Now, DISTANT ARMIES makes it possible to play some of the intriguing games that were precursors to our present-day Chess. You can

play any of ten different historical games that have evolved into the game we play today.

The oldest direct ancestor of chess that historians have been able to reconstruct is Chaturanga, known to have been widely played in India around 600 AD. If you want to play Chaturanga, for instance, DISTANT ARMIES will set up the board and play a game in just the way ChessMaster or the other Amiga Chess programs play. That is, you have the choice of flat board or 3D, you can set the level of play, take back moves, change

sides, save games and exercise many other familiar options. Pressing <F1> brings up a short history of the game you have selected; pressing <F2> displays its rules. Other F-keys serve as help keys. It is all nicely organized for pleasant play and learning at the same time. The cursor keys make it easy to change a move or to move backward and forward through moves that have already been made. The Distant Armies disk is self-booting and is not copy-protected. A 16-page manual, well-printed, but a little skimpy on information, clearly explains what it's all about and directions are supplied for installing on a hard-drive.

Options like "Take Back Move" and "Suggest a Move" can make the game more fun for the uninitiated to play



DISTANT ARMIES is based on two classics: H.J.R. Murray's "History of Chess" (1913) and Richard Eales' "Chess, The History of a Game" (1985). I have never really been very interested in reading about the history of chess, but now that I am able to actually play the ancient versions, their history suddenly comes to life. The centuries of effort to optimize the game by trial and error take on a new freshness and immediacy. In the ten games played by DISTANT ARMIES, many concepts of game design are tried out. Some have survived to be part of our modern game, many have permanently disappeared, and a few can be viewed as still under consideration. Can you imagine the rules of modern Chess actually being

(continued on next page)

Distant Armies (continued from previous page)



Upon picking the type of board game you wish to play, a marker indicates the country of origin

phants that had moves that faintly remind one of queen and bishop, but were much weaker. It was this game that spread from India through the rest of Asia, into northern Africa and into Europe, getting slightly modified by every group that took it up.

Burmese Chess, beginning around 650 AD and still being played, begins with the pawns lined up in an advanced position and the players take turns moving their major pieces any place they want behind the pawns. Thus, they jump right to the midgame and skip the relatively slow opening game.

Chinese Chess is an outgrowth of the above two, but in the ninth century or so, they decided to place the pieces on intersections instead of inside the squares! This peculiarly Chinese behavior took their version completely out of the mainstream of world chess.

Shatranj was played in Islam from the seventh till the seventeenth centuries with very little change from the original

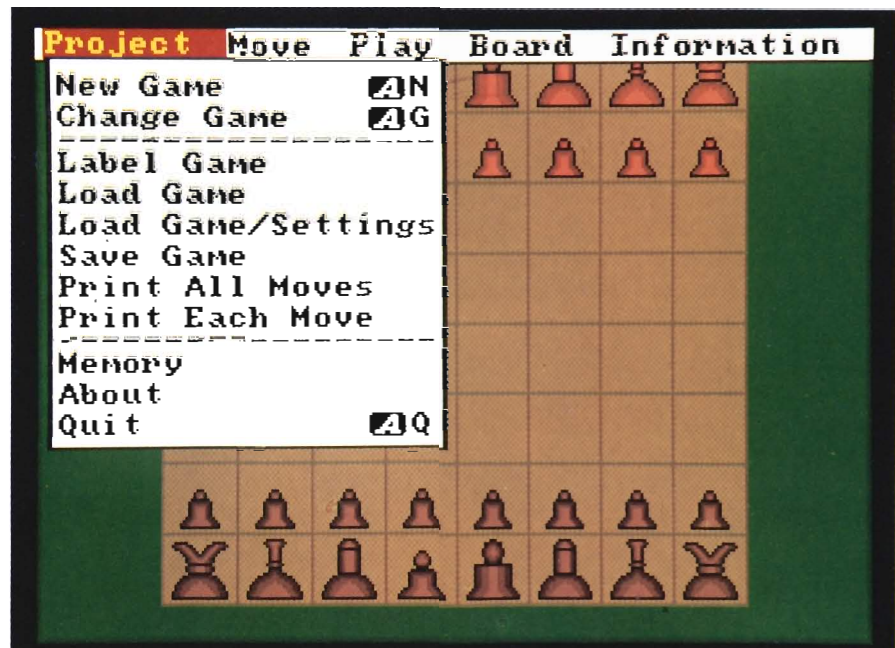
changed? Before playing with DISTANT ARMIES, I would have said positively no way. But playing the historical games has made me recognize that we are only at some midpoint of its evolution. Experimental variations will continue to be tried out and some of them are bound to get adopted. DISTANT ARMIES leads one into thinking in terms of centuries. From that lofty view, the game is seen to have always been changing and almost certainly will continue to change.

Stepping through the games of DISTANT ARMIES in chronological order emphasizes this sense of constant change. You can read about them in a history book, of course, but playing a few rounds of a game conveys quite a different understanding. It gives you a new slant to play a form of Chess that was popular for centuries but then gave way to a different form:

Chaturanga, as it is thought to have been played fourteen centuries ago, was the same as today's Chess in many

respects. The same board, the same pawns, knights, rooks and kings. No queen or bishops, though. Instead, there was a counsellor and two ele-

As Distant Armies keeps track of all your moves, you can obtain a printed record of your game by selecting the appropriate option from the project menu



rules of Chaturanga. (A phenomenally long time to freeze the rules!) They spent those ten centuries developing techniques of play and books of chess problems, taking the level of play far above that of the rest of the world.

Byzantine players wanted to avoid edge effects, so they wrapped the board into a cylinder by joining the left and right sides. (Putting it on a flat surface makes it a disc.) A nice try, but, as we know, one that did not catch the interest of the rest of the world.

Mediaeval Chess, centered in Spain in the thirteenth century, replaced the counsellor and elephants with queen and bishops, but allowing them to move only two squares. It also speeded up the opening game by letting pawns move two squares on their first move. It still was Chaturanga, but was beginning to look like today's chess.

Courier Chess developed in Germany with the addition of many complicated rules, eight more pieces for each side, and a board stretched out to 12 squares to hold the extra pieces. This began a trend of making the game much more complicated.

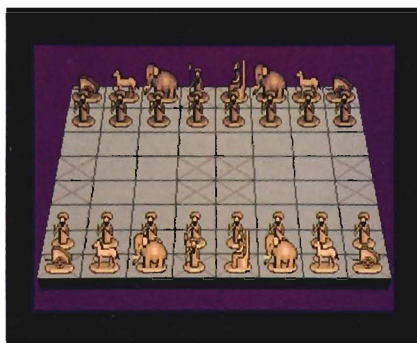
Turkish Chess stayed with the classical 8x8 board, but jazzed it up by letting the bishops move along the entire diagonals and giving the queen all of the moves she has today, plus those of a knight. This extra power of the queen makes it very hard for today's player to move thoughtfully. Reading about this extra strength of the queen does not prepare one for the drastic difference it makes in the strategy of play.

Decimal Chess became popular in India around 1790. The trend with Courier and Turkish towards increased complexity was extended by Decimal. It used a board that was 10x10, contained 22 pieces on each side and had additional complicated rules. After these

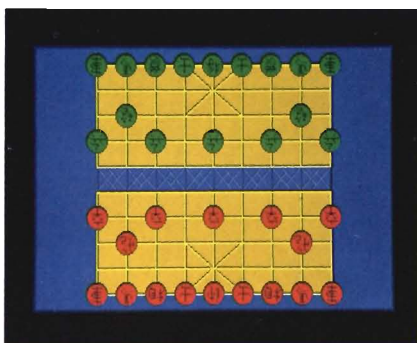


complicated versions faded from popularity, Chess moved towards the simpler rules we use today.

Los Alamos Chess was invented in 1956 to make it easier to program the game on a computer. In most ways it is like the regular game, but some drastic



changes were made. It is far simpler. It is played on a 6x6 board, with no bishops, no castling and no double-move by the pawns. Removing these complications did not remove any subtlety or depth from the game, as far as I can see. In fact, I think this revolutionary change in the game is a distinct improvement.



That is something, of course, that can be determined only by extensive use. Try it some. If you, too, think it's great, let's see if we can get the International Chess Federation to run some Los Alamos tournaments. Of course, that will be like persuading the American Baseball League to try playing with only two bases, only harder.

Let me summarize my feelings about *DISTANT ARMIES*: Being able to play those ancient games (instead of just reading about them) was a big thrill and it deepened my feeling for the game. *DISTANT ARMIES* makes its moves kind of slowly, as though written in AmigaBasic, but it plays well enough to beat me most of the time. It presents things on the screen in an attractive format and is as user-friendly as can be. It seems to be aimed more towards someone who is truly interested in the game's antecedents than towards someone who just wants to play some games.

I was pleasantly surprised by the inclusion of The Los Alamos variation. If I had only read about it, I would probably have dismissed Los Alamos as cute, perhaps, but not worth serious attention. Playing a dozen games of it, however, made me begin thinking of it as an important contender. In short, I totally liked the package, and expect anyone else who enjoys computer Chess will also totally like it. It's interesting to think that something new and refreshing in the world of computer chess has come from the musty world of history.

Distant Armies \$44.95

Eagle Tree Software
P.O. Box 164
Hopewell, VA 23860
(804)452-0623

Janus Libraries v1.1

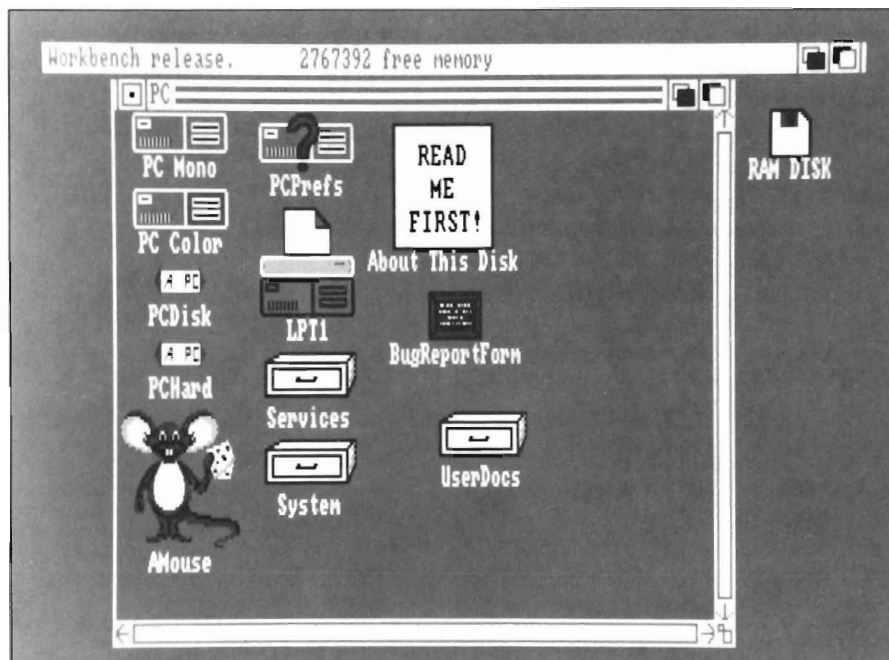
The Bridgeboard Gets A Boost From New Software

by George Rapp

The Amiga A2088 Bridge Board was a radical idea by Commodore to boost sales of their unique machine by providing an upgrade path for people with existing MS-DOS compatible personal computers. It is widely accepted that the results of this plan surprised even Commodore. While the A2088 does supply a method of running PC applications, it only runs at the speed of the original IBM PC and can access the Amiga drives through an often fragile and slow method. Most

power users were forced to get a dedicated PC disk controller which did allow the Amiga to use the PC side drive. This configuration required the Amiga to boot from a diskette and drive access was comparatively slow. The manual that accompanies the A2088 talks about using the board as a specialized processor for the Amiga through software hooks in the Janus Library. The Janus library is named after the two headed god of Roman mythology. This is an allusion to the way that this software library acts as glue between the two operating systems. Commodore is readying for release a new version of the Bridge Board called the A2286 which is

based around the 16 bit 80286 CPU. They also pushed the clock, a measure of how fast a computer can execute an instruction, to more than twice that of the A2088. In real terms, you can expect your MS-DOS applications to run six times faster than they do now which would put it at the same speed of some of the faster PC AT clones. The A2286 will feature 1 Megabyte of RAM, a 1.2 Megabyte floppy disk, and a new version of the Janus Library. Expect street prices on the A2286, drive, and software to run about \$1300 with possible decreases once Commodore realises that the new A2286 will be in losing competition with their own and other PC AT clones.



While we have our usual gripes about Commodore's marketing strategies, we have nothing but kudos for their software engineers. We have had a chance to work with the Gamma 1.1 Janus software with a standard A2088 bridge board. This release includes one Amiga format disk with the Janus software and installation routines and three MS-DOS format diskettes with the Janus software, MS-DOS 3.3 and GWBasic. MS-DOS 3.3 is a slight improvement over the earlier versions in the addition of FASTOPEN.EXE that allows multiple track reads from a drive for an improvement in access times. The support for hard disks over 32 Megabytes has also improved. Unfortunately, there are a few popular software packages that will not work

with DOS 3.3, so check with the developer of your important packages. If need be, you can continue using the version of DOS you have now.

There are some basic changes in the Amiga side of the Janus software that make installation easier. Instead of several crypticly named directories without icons, all the Amiga side files are in the single PC drawer with a few added files for the fonts and commands. The Janus install routines make the installation of the software simple and automatic. There are a few added icons in the PC drawer that show some of the power of the new Janus software. The most noticeable of these is a large mouse with the title of AMouse. Clicking on this icon allows the Amiga mouse to function as a MicroSoft compatible mouse on the PC side. You have a choice of switching your one mouse between the Amiga and the PC through a hot key combination. A second option is attaching a second mouse in the second port and using one mouse for each operating system. Compatibility of this mouse is low at this point in time, but it is possible to modify the mouse routines to improve this by invoking Amouse from CLI with command line options. This is a result of some PC software looking for the copyright message string in the mouse driver to identify the type of mouse in use.

A second new icon is called PCHard, which is a major improvement in the Janus support. Previously, if the Bridge Board software crashed or locked up and the Ctrl-Alt-Del key combination did not restart it, you had to reboot the whole Amiga and stop all the applications that were running on the Amiga side. With PCHard, you can reset the bridge board almost as effectively as turning off the computer and restarting. One last icon which is a little less obvious since it is in a drawer is PCTime. This routine will allow a

program on the PC side to read the Amiga system clock. It is a bit greedy on system memory for what it does, but it makes using the PC side much easier.

The major enhancements are not at all obvious and not well documented in the user doc files on disk. Probably most important is the AmigaDOS command, MakeAB which is short for make AutoBoot file. This program is run from the CLI and you must specify the drive, file name, and virtual drive characteristics. The virtual drive now is so well constructed, that you must specify heads, cylinders, and blocks per track. It is possible that the release version will make this easier to use for those unfamiliar with hard disk drives. Simply, the total space available on the drive in bytes is surfaces times number of cylinders times blocks per track times 512. The MakeAB program automatically creates the file at its full size for improved data safety so be prepared to wait several minutes depending upon the speed of your disk drive. Once created, you have to tell the janus software which file to use through a text file called about.ctrl in the system directory inside the PC drawer. This file is read only once so you can not change boot drives within a session, but this is not likely to be a problem in typical use.

I was amazed at the accuracy and versatility of the virtual drive created. The MS-DOS side "finds" a dedicated PC drive and controller and will allow you to prep it with the FDISK command and format it with the system installed. Once prepped and formatted, you can copy all the system files to the virtual drive and boot from it! The present virtual drives created with JLINK are still available to you for use but they are not as secure in data or as fast in operation. We used the Norton Utilities System Information (SI) on the virtual drive created on

a GVP 45 Megabyte hard drive card and got some surprising results. The computing index is 1.0 which is as expected from the A2088 architecture and clock speed. The disk index came back as 2.6 which is much faster than the average PC disk drive controller. Using the same 45 Megabyte disk drive with a Seagate PC disk controller produced results of 1.6 which means Commodore is doing something right. In real world applications, the results are not quite as good as the Disk Index would imply. The virtual drive is very fast in reading, but not as fast in writing. This is acceptable because normal disk use requires many times more reads than writes. The speed of the virtual drive also drops off with increasing capacity of the virtual drive and with any given partition of the drive getting filled. If you have large applications, we would suggest using more partitions of smaller size than you might on a dedicated controller. One addition that we could not test out is the inclusion of a display driver that adds EGA display capabilities to the bridge board. This is a file that is called as a display driver from the CONFIG.SYS file.

The only complaint I have at this point is the added hooks in the software to make using the bridge board easier also make it easier for a crash on the bridge board side to affect the Amiga. Of course as Gamma testers, this is very common in pre-release versions. We would also like to see an option for the JLINK created drives to be filled out to their maximum size like the autoboot drives can be. We also hope that the Janus software will be available as a low cost upgrade to the present owners of the A2088.

Janus Libraries 1.1
Commodore Business Machines.
1200 Wilson Drive
West Chester, Pa 19380
(215) 431-9100

Crash Garrett

Saturday morning Adventure on your Amiga

by Eric Hunt

Have you purchased an interactive adventure game for your Amiga? If not, you might be surprised to find that aside from graphics packages, the interactive adventure game is probably the most improved software offering of recent years.

Just five years ago, I played text adventure games and turned thumbs down to all but a very few graphic ad-

ventures. In those days, I had a C64, and graphic adventures were not very challenging.

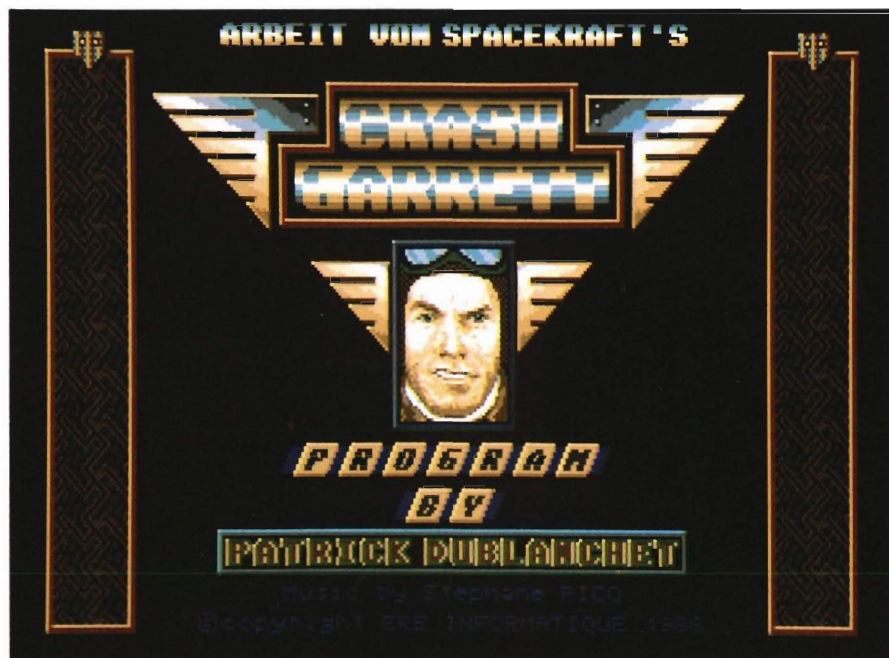
I rarely review a game which would be considered poor by general standards. The reason for this is simply that the games are very much better than those that were available when I first began interacting with fantasy adventure stories. Today's games are more graphic, often contain sound effects, sometimes speak, often are multi-layered in deep plots, and offer a variety of fantasy options. In this gaming world, I have been a lonely heart look-

ing for Miss right, a special agent, a time traveller, a Stooze (Moe and Larry variety), an intergalactic explorer, and a super stud. This month, I had the pleasure to become a mysterious voice in the head of Crash Garrett, two fisted flying ace of the 30's and 40's when flying was new and aces were few.

When I sit down to determine the value of a new game, I first read the package looking for an interesting story line or unusual situation. The fuel for Crash Garrett came from its imaginative cover design and brief introduction on the back cover. Depicted is Garrett in his fly boy garb, surrounded by a Nazi, a motorcyclists, an Indian Chief, a pretty girl, and his single engine plane. On the back cover, the setting is neatly described in two paragraphs. It seems that Garrett deals with movie stars, fast action, Nazi takeover plots, master spies, and large doses of intrigue. Crash just sounded like my kind of guy. It had me hooked before I had loaded the single adventure diskette.

Before getting into the story, I would like to tell you about the technical things that make computer adventures fun. Crash Garrett contains a good measure in all the departments. First, there is little time wasted in waiting for this game to load. The game boots from the Amiga Workbench prompt in less than one minute. Immediately after loading, your attention is held by

Crash Garrett, your hero in the skies



the superior sound of jazz as it was performed during the late 30's. By this time, you will have noticed that the inside packaging flaps are written entirely in French. As my high school French teacher would testify to, I don't understand a word.

If you are like me, the inside flaps won't hold your attention for long before you notice that the graphics are very well done in this game. Instead of the familiar flat representations common in most graphic adventures, the graphics are layered. Faces appear and conversations ensue on a background fitting the current situation. At first, things went too fast. Soon, I learned that the unfolding story can be slowed or hastened by a key stroke. This feature can be put to good use. When unfamiliar with a situation, slow things down. Speed things up when re-playing, or when the action slacks just a bit.

Additionally, this game is equipped with speech - although the hungarian accent is not my favorite, speech is appreciated because it frees me from the screen so that I can scan the keyboard for just the right combination of letters needed for the brief responses required of me (as player).

The most important ingredient in a good interactive adventure is a twisting, deepening plot. Crash Garrett excels here. Garrett himself is a character about whom many sequels could be



Crash Garrett has the flavor of an old time matinee drama

written. He began his flyboy days as a bootlegger and smuggler. As he was able, Crash moved away from criminal activities and went legit as air taxi driver to the rich and famous. Set in the year 1938, Garrett and long time friend "Grease" operate one of the first successful of such operations. Crash is an extremely skilled pilot and is still sought out for difficult runs steeped in risk. However, Crash now works for his dream of success in the very lucrative air freight business. He and Grease hope to save up enough from overtime flights so that they can buy a freight plane and break into the just pioneered freight service. However, as is often the case with dreams, reality can bar overnight success.

As the story begins, Crash and a slick reporter chick named Cynthia Sleeze are flying along and the conversation immediately gets you in the proper

frame of mind. Cynthia suggests a course change so that she can get an interview with the intended of an apparent suicide victim. Cynthia tells Crash just enough to justify a departure from the planned course and peak his interest. Our flier hero friend is foolish enough to hang around, even as he is threatened by an awesome Arab carrying a lethal steel bar. Apparently made of metal himself, Crash is easily able to overcome the goon. However, he is next met by henchmen of a repulsive baron named Von Krul.

All of this (and more) happens in less than five minutes. About now, I was searching the brief play guide looking for the keyboard intervention which would slow the action down. As I discovered this, I lost Crash for the first time - but not the last. Alas, Crash is vulnerable, though certainly formidable.

(continued on next page)

Crash Garrett (continued from previous page)

I repeated the sequence of events in much the same manner as I would in any other adventure. However, I varied my approach just a bit and found that the story completely changes. In some cases, it seems that letting the opposition keep an advantage may be a wise course of action in that new clues are brought to light.

After a few go arounds, I began using the save-game feature in order to protect myself from complete obliteration

busy schedule to fully explore all the twists. (Of course, the problem is amplified when I would rather be playing the game instead of writing the article).

I can justify my obsession very easily if I take a moment to reflect upon how little I have yet discovered about Crash Garrett and his needs.

Crash is a complex individual, and as the voice in his head, there is an interdependence between the player and the characters in the drama. I have

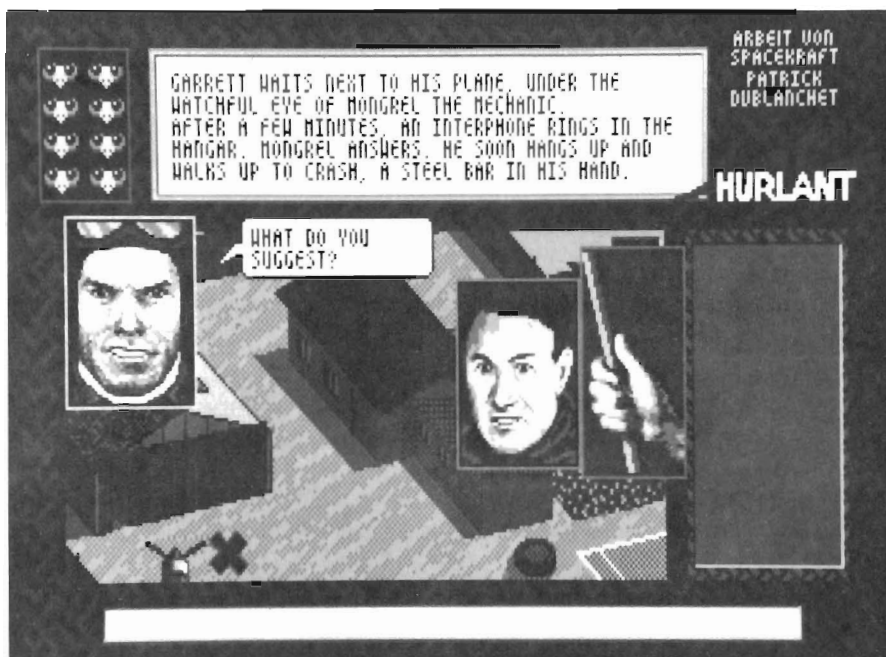
guessed, I found Crash Garrett most intriguing as an adventure game. My fascination with this drama centers around the story's ability to draw you into the action. If fantasy is good for people, then a good fantasy must be one in which the participant gains by accomplishments in situations which may prove useful real life situations.

There is, admittedly, a possibility that you who are new to interactive adventure gaming may find Crash Garrett very difficult. The game is more than average in difficulty level. However, while my abilities are truly tested, you may find that your own unique approach to this game will be all the experience that is required to have fun - and isn't that the point?

Crash Garrett

Terrific Software
544 2nd Street
San Francisco, CA 94107

(415) 957-0886



when inevitably, Crash would climb to the end of his rope.

A good adventure has to be difficult if it is going to appeal to the discerning audience of gamers these days. Garrett's ability to discover plots within plots accomplishes the intent of the authors, so much that I am now hopelessly hooked on finding a solution to Crash's latest dilemma. Each successive accomplishment only digs me deeper into the seemingly never ending story. There is not enough time in my

learned to listen to and appreciate Garrett's insights, which have continually proved valuable. This relationship within an adventure game is a technique which will continue to evolve in future games by these, and other authors. If so, then I am sure to be pleased to have discovered one of the first games to explore the dependent relationship factor.

Captain Blood is another game which involves the player as a part of the main character. As you may have

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Taxbreak / Taxplan

Two Tools for using your Amiga for some Deductive Reasoning

by Glenn M. Heck, Jr.

Oh boy, it's tax time again. Don't we all love it when the birds start to sing and the flowers bloom. It's almost always a beautiful Spring day when I find myself trapped inside my office with W-2s, cancelled checks, interest statements, IRS forms, schedules, worksheets, and instruction booklets scattered from wall to wall.

I've heard about computer tax preparation programs. Now Oxix has released the first completely Amigatized tax preparation program. Just in time for 1988 returns. *Tax Break*, designed to run on an unexpanded 512K Amiga (although at least one megabyte is recommended), boasts a myriad of helpful features and the purchase price of the program is even tax deductible.

Not only does the program contain the standard form 1040 and schedules A & B, it also includes schedules C, D, E and SE as well as forms 4562, 2441, 8606, 2106, and 4868. All forms, schedules and worksheets are fully integrated. Information entered in any of the sheets is automatically linked to corresponding sheets.

When changing from one screen to another, the program recalculates amounts and a status line at the bottom

of the screen tells you your refund amount and the change in the refund after your last entry. Tax Break includes an on-line calculator with a paste function which automatically places calculated amounts into the currently active cell in the return. If all of

cludes T1, all schedules, all provinces and "Quebec Forms, available directly from the developers, Datamax Research.) The packaging includes a thick, bound manual, the program disk, a documentation disk, and a copy of the Price Waterhouse Personal Tax

TaxBreak strives for a faithful rendition of the IRS 1040 form

this isn't enough, the program display includes a situation sensitive help line and a second disk provides help files from the 1040 instruction manual. To top it all off, you can print out an IRS acceptable, facsimile copy of the 1040. (There is also a Canadian version known as Amiga-Tax, which in-

cludes T1, all schedules, all provinces and "Quebec Forms, available directly from the developers, Datamax Research.) Although the documentation is extensive, the manual repeatedly warns the taxpayer that this is a tax preparation aid and should not be used as a tax advisor. The software is not copy protected in any way. It is sold to the original buyer with a license (continued on next page)

agreement. The manual is organized to help you get the most out of the program. It includes a complete, detailed table of contents, an introduction to both the manual and to the program, ten chapters, seven appendices, a glossary and an index. Throughout the manual a wide right margin contains headings which are helpful in quickly locating the material you need. The main body of the manual contains much more than a description of how to use the program. Chapter one outlines major changes in the 1988 tax laws. Chapters two and three explain the program's conventions the various screens, menus and gadgets. Chapter four explains the use of help files.

In chapter five, preferences settings and disk management are discussed. Chapter six gives the user tips on preparing returns. Chapters seven and eight outline the details of form 1040 and the various forms, schedules, and worksheets included with the program. Chapter nine takes you step-by-step through the filing of a return, using a

prepared return on the documentation disk. Chapter ten explains how to use Tax Break in preparing estimated taxes and tax planning. The appendices include information on installing the program within various system configurations, lists of IRS form mail order addresses, IRS tax publications, IRS addresses, business codes for Form C and a description of the form and formula definition language used within the program. It was a snap to move the program over to my hard drive. I simply dragged the icon of one drawer from the program disk and one drawer from the documentation disk. (Placing all programs, sub-directories and data files in one drawer is a simple but elegant way to speed up harddisk installation which could be easily adopted by other producers of productivity software.) Tax Break must be run using the Workbench 1.3 math library but if you are running under 1.2, don't worry. The program disk includes the 1.3 library and a simple script file which automatically replaces your 1.2 library. After copying the two drawers to my

hard drive, I was ready to begin. A double click on the program icon brought up the familiar first page of IRS Form 1040 in low resolution. By clicking on a gadget labeled "zoom" at the top of the screen, I was instantly placed in high resolution. There are four menus available throughout the program. The PROJECT menu allows access to disk and printer functions. In the PREFERENCES menu you can configure the program to your needs. The remaining two menus give you access to all of the forms, schedules, and worksheets. I started in the PREFERENCES menu. With memory expanded above a megabyte, I chose FAST FORM LOADING. This copies all of the screens into RAM: and makes a significant difference, speeding up the program's operation. I also changed from two to four color display. Other options include running the program as a window on the Workbench screen (this saves about 35K of chip memory), changing colors, no background pictures (again saving chip memory), a toggle to the Workbench screen, a choice to turn off printer form feeds and a choice allowing the use of a sheet printer (laser printers and the HP Deskjet).

A large variety of realistic-looking forms are available on-line from within Taxbreak

Form 4562

Depreciation and Amortization

Part I Depreciation
(Use Part III for vehicles, computers, and recreational property)

Section A (179) - Election To Expense Depreciable Assets

	a) Description	b) Date	c) Cost	d) Expense
1				
2	Listed property - Enter total from Part III, A...			0.00
3	Total.....			0.00
4	Enter the amount over \$200,000.....			0.00
5	Subtract line 4 from line 3.....			0.00

Section B. - Depreciation

a) Class of property b) Date c) Basis d) Period e) Deduction

Keep right mouse button pressed and move mouse to top of screen

Once my preferences for the program were set, I switched over to the W-2 worksheet. Form selection can be done in a number of ways. The most used forms (1040, schedules A & B, and the W-2 worksheet), can be accessed through hot keys. All forms and worksheets are also available through menus. Any line in your return that is linked to another screen can be double clicked on to gain instant access to the appropriate form. I clicked twice on line 7 of the 1040 and the W-2 worksheet popped to the screen from RAM. On the W-2 worksheet I simply copied our W-2 information into the proper cells and, pressing the ESCAPE key, was sent back to my 1040. Low and

behold, the program had indeed placed the total wages from our W-2s into line 7.

Using Tax Break is very intuitive. The help line at the bottom of the screen gave me enough information for many of my questions. If a help line contains an asterisk you can press the HELP key to bring up a page from the IRS 1040 instruction booklet. What could be simpler?

When I needed to use a calculator, a press of the F3 key brought a single line calculator to the front. The calculator consists of an entry line, which also serves as an output line, and two gadgets. The PASTE button automatically places the amount in the output line into the currently selected cell on the return. The complete number pad is available from the calculator. Unfortunately, this is where I found my first bug. While using the W-2 worksheet, I multiplied my state taxable wages times .0215 to determine my Pennsylvania state taxes.

What a surprise to find that I owed Governor Casey \$92,953.10. Off by two powers of ten and I didn't even vote for the man!!! It seems that the program's internal calculator cannot deal with numbers as small as the Pennsylvania tax rate. Can you imagine anything as frightening as using a faulty calculator to figure out your taxes for Uncle Sam?!! Major bug!! From that point on I used my hand held calculator and manually entered amounts

into the program. In a record breaking short period of time, I had completed all of my schedules and forms and was ready to see how the program's printer interface works. On the program disk a READ_ME_FIRST addendum/errata file described the proper preferences printer settings. After changing the settings, I proceeded first to try printing out a facsimile copy of the 1040. With my HP Deskjet resolution of 300 DPI, I was hoping for a fantastic printout. In the PROJECT menu, I selected

PRINT FORMS. This brought up a requester listing every form, schedule and worksheet as well as two selections labeled "1040 dot page 1" and "1040 dot page 2." A note reminded me that only the two "dot" forms were acceptable to the IRS. I selected the first one and clicked the OKAY gadget. My Deskjet reset itself, spit out a blank sheet of paper, loaded another sheet and began printing. I could not believe my eyes. Line after perfect line of the
(continued on next page)

Form 1040		Department of the Treasury—Internal Revenue Service		1988	
U.S. Individual Income Tax Return		For the year Jan.—Dec. 31, 1988, or other tax year beginning _____, 1988, ending _____			
Label Use IRS label. Otherwise, please print or type.	L A B E L H E R E	Your first name and initial (if joint return, also give spouse's name and initial) Last name			
		Present home address (number, street, and apt. no. or rural route). (If a P.O. Box, see page 6 of instructions.)			
		City, town or post office, state, and ZIP code			
Presidential Election Campaign		Do you want \$1 to go to this fund?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		If joint return, does your spouse want \$1 to go to this fund?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Filing Status					
1 <input checked="" type="checkbox"/> Single					
2 <input type="checkbox"/> Married filing joint return (even if only one had income)					
3 <input type="checkbox"/> Married filing separate return. Enter spouse's social security no. above and full name					
4 <input type="checkbox"/> Head of household (with qualifying person). (See page 7 of Instructions.) If your dependent, enter child's name here.					
5 <input type="checkbox"/> Qualifying widow(er) with dependent child (year spouse died ▶ 19 ____). (See					
Exemptions (See Instructions on page 8.)					
6a <input checked="" type="checkbox"/> Yourself. If someone (such as your parent) can claim you as a dependent, do not check this box. But be sure to check the box on line 33b on page 2.					
b <input type="checkbox"/> Spouse					
c Dependents:					
(1) Name (first, initial, and last name)		(2) Check if under age 5	(3) If age 5 or older, dependent's social security number	(4) Relationship	
If more than 6 dependents, see Instructions on page 8.					
		d If your child didn't live with you but is claimed as your dependent under a pre-1985 agreement, check this box.			
		e Total number of exemptions claimed			
Income Please attach Copy B of your Forms W-2, W-2G, and W-2P here. If you do not have					
7 Wages, salaries, tips, etc. (attach Form(s) W-2)					
8a Taxable interest income (also attach Schedule B if over \$400)					
b Tax-exempt interest income (see page 11). DON'T include on line 8a		8b			
9 Dividend income (also attach Schedule B if over \$400)					
10 Taxable refunds of state and local income taxes, if any, from worksheet on page 11 of Instructions					
11 Alimony received					

Through the use of a bit-mapped image stored on the disk, Tax Break created this facsimile printout of the IRS 1040 form.

old familiar 1040 were appearing before my eyes. It was too good to be true! Unfortunately, it was too good to be true. After printing the first two inches of the return, the program (or the printer driver) sent a form feed to the printer. In fact, every two inches of the 1040, another form feed was sent. Worse than that, when I pressed the CANCEL gadget, the print requestor disappeared but the program continued to send the entire 1040, two inches per page, to the printer. Six sheets of paper later, I had a perfect copy of the 1040 form printed out in two inch portions at the top of each sheet! What a disappointment. After trying several preference printer settings to no avail, I called Oxxi in California for help. It seems that with the HP Deskjet and La-

serjet, you must have expanded printer memory in order to print the facsimile. So, I selected the standard printer font outputs of the 1040 and all of my forms and schedules and copied the information by hand onto the official IRS sheets. (Those of you with 24 pin printers should not be dependent on the amount of memory in your printers.)

Although the printing problem was a disappointing way to end my tests of Tax Break, the program does deliver what it promises. I have never had an easier time completing my tax returns. The intuitive user interface and the linking of cells between the 1040 and all of the various forms, schedules and worksheets was really a time saver. All of the online help files and the in-

formation in the manual made paying Uncle Sam a little less painful this year. Registered owners are promised a 1989 upgrade for "a very substantial discount over the regular price of Tax Break." If you haven't started your 1988 return by the time you read this, Tax Break just might help you avoid those late filing fees. ..

Tax Plan

by Steve Dock

More than any other part of the trillion dollar US bureaucracy, the reporting requirements of the Internal Revenue Service directly effect every household in the country. For many of us, this could be a simple process. Total income and taxes paid, then look up taxes due and finally compare the two. Unfortunately our lawmakers and IRS rule-writers have combined to make $2+2 = 99.6^{\wedge}2$. Its little wonder that some of the first non-entertainment programs for personal computers were tax preparation aids. I have relied on a spreadsheet to make my tax returns bearable for several years. If you search your local bulletin board, or the Amiga sections of the commercial networks, you will find templates for use with Analyze! which follow the order of the 1040 form and Schedule A. These can be quite helpful if you are comfortable with a spreadsheet. Of course not everyone owns Analyze! and many of us are looking for software which provides more guidance and a manual.

Tax Plan is just such a package produced by Quality Business Systems of Hudson, Mass. The package includes one non-copy protected disk, and a 142 page spiral bound manual. The manual

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is organized in seven sections which take you from the concept through the details. As you read the first page you will notice that Tax Plan is available for the IBM as well as the Amiga.

Both versions were developed using APL. This is an unusual choice for Amiga software which is more likely to be written in C or possibly Assemble. A runtime version of MicroAPL is included on the disk, but stays invisible unless you are a habitual disk snooper like me. Tax Plan is not bootable, so insert the disk after you have loaded Workbench. I tested Tax Plan with both 1.2 and 1.3 versions of Workbench so you needn't worry about compatibility. You can use Tax Plan with a 512K machine and one disk-drive, so the hardware requirement are minimal. Simply click on the disk icon and the Tax Plan icon to get going. A title page will appear first followed by

the main menu screen. The main menu is the center of the program and all operations return here. The choices are simple and presented logically; enter data, calculate taxes, print tax return, save and load data, and restart. A prompt waits your selection at the bottom of the screen. Tax Plan is a text only program. By that I mean that Amiga features like pull down menus, requestors, and mouse controls are completely absent. At each prompt a single letter or number if required to continue on. Select 1 for data entry and a menu of available forms will appear.

Tax Plan includes 22 IRS forms and schedules. These include all three 1040 forms, Schedule A for itemized deductions, and Schedule C for business profit or loss. Your favorites have probably been included too. The successful investor will of course find Schedule B for interest and Dividend

Income and Schedule D for capital gains. Form 2441 is used for dependent child care expenses, and Schedule R is a credit for the elderly. How thoughtful of the IRS to include so many different types of people. You can begin with any form, but its logical to begin at the beginning so lets start with taxpayer information. Here you enter your name, address and social security number.

This screen works like every other entry screen. The top twenty lines will present text from an actual IRS form with blank spaces for required data. The bottom of the screen will show an action menu. The actions include More, Save, Re-Enter, Calculate and Next. Type the first letter of any menu item to take an action. At any time a screen menu appears you can type H for online help, P for a pop-up calculator, or Q to return to the main menu. In
(continued on next page)

Tax (continued from previous page)

this case fill in your personal information then as you reach the bottom of the screen press N for the next form. The W2 summary will now appear. The amounts your earned and paid in taxes will be carried to the appropriate lines of form 1040 and Schedule A. If you have more than one 1040 you can use the Pop-Up calculator. Press P and a small box will appear at the lower left of the screen. You can type successive amounts here and after each return a total will appear. Only addition is supported and the total will be placed on the line you were positioned at when you exit the calculator.

Complete each form that you require and then return to the main menu. Here you will select Calculate Tax Return. As each form is checked and computed a status line will inform you of Tax Plans progress. In a few seconds the news will appear. A few lines will show how much you owe or are due, your tax as a percentage of income (effective tax rate), and totals for income and tax paid. If Tax Plan finds any errors you will be informed and directed to return to the data entry screen for corrections. If you want to try another tax approach, you must return to the main menu and select change. Only after changing some data and returning to the Calculate screen will you see the net results of your change.

Saving your tax return is a simple process but with severe limitations. When you choose the save menu, you will be

1. Taxpayer Information	13. Schedule R
2. Form W-2	14. Schedule SE
3. Form 1040EZ	15. (not used)
4. Form 1040A	16. Form 2119
5. Schedule 1	17. Form 2441
6. Form 1040	18. Form 3903
7. Schedule A	19. Form 6251
8. Schedule B	20. Form 8582
9. Schedule C	21. Form 8606
10. Schedule D	22. Form 8615
11. Schedule E	A. All of the Above
12. Schedule F	

Which Selection (#)? █

Taxplan utilizes a numerical selection interface for all of its operations

prompted for a name for your "workspace". You cannot save a return to any disk except a working copy of Tax Plan! What you are saving is not a text file, or a spreadsheet format. You are saving the entire working storage section of the APL session. You may save several workspaces on the same disk

file. Quality Business Systems has taken a "no frills" approach which comes at the expense of flexibility. I can't say that Tax Plan isn't easy to use, but it sure isn't fun. The main advantage to a computer tax preparation aid is the ability to experiment and get instant feedback. For me Tax Plan is a step down from my spreadsheet, but for those who want a simplistic cookbook approach it beats H&R Block.

but you better remember the names you used, since there is no requestor or list function.

I guess that about sums up Tax Plan. It works and includes all the basics you need to complete an accurate tax return. The only major omission is the lack of a way to import data from your budget program or some other computer

Form 1040A		1988	1989
Line	Description		
12a	Your IRA deduction from applicable worksheet		
12b	Spouse's IRA deduction from applicable worksheet		
12c	Add lines 12a and 12b		
13	Subtract line 12c from line 11	34870	34870
14	Enter the amount from line 13	34870	34870
16	Standard deduction	5000	5000
17	Subtract line 16 from line 14	29870	29870
18	Multiply \$1950 by exemptions on line 6e	7000	8000
19	Subtract line 18 from line 17. Taxable income ...	22870	21870
20	Tax on amount on line 19	3311	3281
20a	Tax table (1) or Form 8615 (3)	1	1
21	Credit for child and dependent care expenses		
22	Subtract line 21 from line 20	3311	3281
23a	Total Federal income tax withheld	4200	4200
23b	Earned income credit		
24	Add lines 23a and 23b. Total payments	4200	4200
25	Subtract line 22 from line 24. Refund	889	919
26	Subtract line 24 from line 22. Amount you owe ...		

ACTION: █ [More, Next, Last, Change data]

Tax Break \$79.95.

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Falcon F-16

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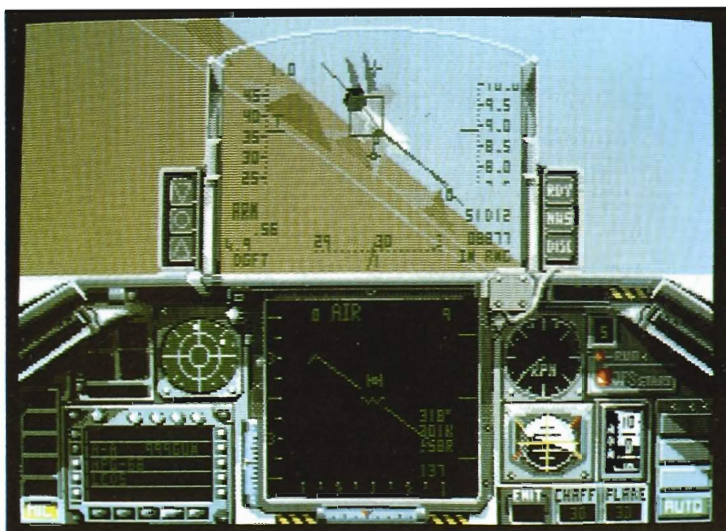
by George Rapp

At these speeds, there is no time for human reactions, only actions. Turning back to watch the AGM-65B Maverick visually guided bomb take out a group of buildings was a big mistake. I was looking out the right side of the cockpit and missed my heads-up display information. My altitude had increased as I circled back and now I had a surface to air missile coming up to meet me. Firing up the

SLQ-131 Electronic counter measure pod to jam the missiles, I break left, roll, dive down towards the ground and push up the throttle. After a few intense seconds, a pleasant voice calmly tells me, "Pull up!" I pull back on the stick and climb back up dropping chaff to distract the missile from me. A look out the back of the cockpit shows nothing followed me back up. Unfortunately, between the time I took looking back and the time to lose the SAM, I now have company back up here from a MiG. The radar showed the inbound MiG so I was ready with a sidewinder for a lock. The MiG went

right and tried to dive behind me, but a good guess on my part had me following up from behind. The throttle was still open so I gained ground fast, maybe too fast. Before I got a firm lock with the sidewinder missile, I got an "X" on the heads-up Display telling me I was too close. With a quick check of stores, I saw lots of ammo left in the M61-A1 cannon. I lined up the path of the MiG with the historic path of the guns aim and lead the target to the projected path on the heads-up Display. A couple bursts later in the clear I headed back to the base to land... Whew !!

Falcon gives you a detailed representation of your fighter's cockpit



This was only level 5 of 12 in Spectrum Holobytes F-16 Falcon fighter simulator. Obviously, this is not a "game" and not something to be learned in just a few minutes. Falcon is a complete two disk package and manual that captures much of the feel of the real General Dynamics military masterpiece. The authors of this package tried (with great success) to balance the realism of the flight against the entertainment value of a computer game. F-16 contains a message in the beginning that if you do not have a registered version of this game you are missing out on a well written and useful manual. They are quite correct in that statement. The manual covers all aspects of using the software and even includes an abbreviated history of the aircraft, which is rich in terminology

(continued on next page)

F-16 Falcon (continued from previous page)

and a glossary so you can understand what you just read. Most of the manual is devoted to explaining the controls of the aircraft and how to operate them from the keyboard and mouse or joystick. There is a table showing all keyboard equivalents, some of which I did not find intuitive. Control of the plane is by the mouse, a joystick, or the keyboard. There are several methods for varying the response of the controls, but no matter which combination I tried, I still felt the controls lacked smoothness and returned to neutral positions too quick. Major game options are selected from pull down menus. The selection of fonts for the menus, however, was terrible, making them difficult to read.

This is the only area I found difficult to understand. Otherwise, the visual artistry of the game is excellent. F-16 does not have the kind of ground detail found in Electronic Arts FA-18, but at the normal flight speeds of an F-16, you won't notice the difference. More of the programming effort went into improving the cockpit and flight characteristics of the plane. You can use the number 3, 4, 5 and 6 keys to get a panoramic view of the cockpit and exterior. There are some important reasons for this. Like the real aircraft, the radar array is located in the nose assembly, which gives a poor radar image to the rear of the plane. There is no real substitute for a visual inspection when your neck is on the line. Like the other flight simulator and fighter games, you have the option of shifting the perspective to outside the plane. This adds little to the overall game play, but looks very impressive. The game is centered around twelve scenarios with different objectives and requirements. Within this framework, you have a wide range of armaments to choose from. At the low levels, you are given hints to set up your equipment, but these are removed at higher levels and you are allowed to turn the F-16



Falcon into a flying cow. Your missions range from a basic bombing run all the way to the more advanced missions that end with a four on one ambush. Should you fail in your assignment, you get to see one of a series of snapshots ranging from you parachuting to safety, to a squadron flying the missing man formation over a tombstone. One of the most powerful features of F-16 is the ability to go head to head with another person on a second machine with the two computers linked through the serial ports or a modem. Considering the amount of data that has to move, I would suggest a 2400 Baud modem or hard wired link for best game play.

The most outstanding feature in my opinion is the black box recorder. This lets you replay your missions and evaluate your own performance, which is by far the best method for improvement. My overall impression of F-16 is favorable. In some ways, it is not as much fun to play as EA's F/A-18I, but it does offer a higher degree of realism. F/A-18I is more suitable to a group situation where only minimal

training is necessary to run the first mission. The F-16's higher complexity in the cockpit requires a more dedicated session to learn the controls. F/A-18I does have the better ground resolution going for it. Ideally, I would like to have both F-16 and F/A-18I because the two complement each other so well. The tips and strategies in F-16 help the person tangling with MiGs for the first time in F/A-18I. For anyone who feels that they have mastered F/A-18, F-16 is a must.

This is an excellent package which needs little improvement. I still dislike the copy protection scheme used in this game. It uses a code wheel again and icons on screen to set the code wheel. The icons on screen are not that sharp and required some time to locate in order to start the game. Ideally, I would like to see even more realism and features for this "game," but much more might require a pilots license.

F-16 Falcon \$ 49.95
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Alameda, CA 94501
(415)572-3584

Wayne Gretzky Hockey

"The Great One!"

By Lee Gerber

Speed, hard hitting, skill, aggression, and strategy are words that come to mind when I think of the game of ice hockey. The people at Bethesda Softworks, with help from the Washington Capitals organization and other hockey professionals, have created a computer game that is based on these elements and makes you feel like you're in the middle of the action. SCORE!

While the game is full of action, you really should read the manuals that come in the package before your first game. There are so many options available both before and during the game that reading the manuals at least once will help immeasurably. The secret to getting the most out of Wayne Gretzky Hockey is patience.

It takes a few games to get a good understanding of the game itself, as well as to develop coordination between your hand controller and the action on the monitor. Only 1 of 10 shots on goal is a Goal in the NHL, so if you don't score on the first few attempts, remember patience. Your latter shots will start going in.

I recommend one more preparation before beginning serious play. Prepare a separate blank disk to store newly

created teams, statistics from played games, or interrupted games. The master game disk must be write protected so a separate blank disk will be needed to store and later retrieve such information.

Once the game is loaded, an extensive Game Setup Menu appears. You will find plenty of choices which vary the play to suit your many personal

"All of the sounds you would expect to hear at a hockey game...crowd noise, a referee's whistle, the end of period buzzer... came through very well"

styles and desires. (This, of course, also means that this flexibility will tend to hold your interest time after time.) Some of the option choices are:

- * 4 different options for mode of play
- * 4 skill levels for each team ranging from high school to pro
- * mouse or joystick controller for each team

- * selection of 18 different team colors
- * period length of 5, 10, 15, or 20 minutes
- * game speed - either normal or slow. (The slow speed is about 25% slower than the normal.)
- * game option - practice, regular, or playoff modes
- * fighting or no fighting (can you imagine an NHL game without fighting?)
- * team editor

The team editor contains a pre-set roster for a home and away team. The home team consists of a Boston Bruins team of the early '70's with Esposito, Orr, Hodge, Buczk, etc. The away team consists of the Montreal Canadians of the early '70s with Mahovlich, Richard, Beliveau, etc. Each player is rated in 11 different performance categories (passing, checking, shooting, skating, etc.). These ratings help determine the overall strength of the player and contribute to the overall strength of the team. You can keep this information intact and play the game with the provided rosters and statistics, or you can create an entirely new team. You do this by changing the name and/or rating categories of players until you have the type of team that you want. If you make changes to a team and want to save your new

(continued on next page)

Hockey (continued from previous page)

team for future use, remember to save it onto a work disk. The four modes of play provide four unique views of hockey. They are:

1) Control player only - all coaching decisions are made by the computer. You have control of 1 player at a time and the computer takes control of the remaining 4 players plus the goal tender.

2) Coach only - all coaching decisions are made by you. This allows you to be responsible for making up the 5-man line pairings and to make line changes both during action and at a stoppage of play.

3) Coach and play - combines option 1 and 2.

4) Wayne coaches - the computer takes complete control of the team both on the ice and coaching.

I'd suggest that you begin with option 1, Play only. This mode lets you build the coordination skills needed to control one player without concern for the overall team strategy. Option 4 with

team.PicCOL													
		Position	Fatigue			Injury			Passing				
		Aggressn	Quicknss			PuckCont			Checking				
No.	NAME:		Power	Skating			Shooting						
2	Joe Moynihan	D	7	6	7	9	9	9	6	6	7	7	6
3	Peter Faust	D	8	8	8	9	9	9	8	7	6	7	7
5	John Enteman	D	5	7	6	7	7	7	8	8	8	6	8
6	Claus Von Etman	D	7	6	8	9	8	9	7	7	6	7	7
8	Pierre Fautad	LW	6	5	6	6	7	7	6	5	5	5	5
9	Mike Schaffer	C	7	7	6	9	9	7	7	6	9	7	6
10	George Picard	LW	6	8	6	9	9	8	8	8	9	8	8
11	Paul Gabriel	RW	7	6	7	8	9	8	5	6	6	6	6
12	Philip Mosman	C	4	8	4	6	5	4	9	8	8	8	8
15	Jin Jones	RW	5	7	7	7	8	8	7	8	7	5	8
16	Jeane-Paul Lebra	RW	9	7	8	9	8	9	7	8	7	6	8
17	Claud Danielsson	C	6	8	6	9	8	5	8	7	8	9	7
19	Mario Cirella	C	8	7	7	9	8	8	7	6	7	8	6
22	Ivan Dameyko	RW	5	6	6	7	6	4	6	7	7	8	7
23	Bengt Sundstron	D	6	7	6	7	8	7	8	8	8	8	8

Wayne coaching is a great tutorial for those who plan to Coach their team. Watching Wayne's choices during several games will make you a more successful coach when your time comes. These options are varied enough to suit both new and experienced hockey players and present levels of play which will keep you interested long af-

ter you master option 1. Now that we know the Game Setup options, lets proceed to play computer hockey. It might be wise for the first time player to allow both teams to be run by the computer only. It was helpful to me because I could watch how the forwards and the defensemen react in the offensive, defensive, and neutral zones. You also get to see when a team changes lines in the middle of play. This is very helpful if you plan on using a coaching option. After watching 2-20 minute periods of computer-only play I decided to get involved. I selected the practice game option with the computer as my opponent. By selecting this option, you play 4-against-4 with a minimal amount of checking. I also gave myself an advantage by selecting the pro skill level and giving my computer opponent the high school level. You need every advantage you can get as you try to learn the basics of this game.

With two fewer men on ice for each team, you get more room to maneuver around so you can learn passing, skating, shooting, and other skills. After a



few practice rounds (and with a better understanding of the game), it was time to go on to regular play. I played four games against the computer with my team set at the pro skill level. The first game I set the computer at the lowest level and after each game I increased the computer skill level by one. With each increase in the skill level, my opponent's ability increased markedly. The checking was more tight, the defense better in their end, and more offensive opportunities were available. The first game I triumphed 3-2 against a weak opponent. The next two games were overtime ties against the college and junior levels. Against the pro level team I lost 4-0, with very few scoring chances of my own. Even though I was thoroughly beaten on the scoreboard, I could feel my own actions and reactions improving. I have a long way to go to compete with the computer at the pro skill level and it's going to take some time and patience to reach that point.

The beauty of having an Amiga is that the quality of both the audio and video is second to none. So naturally, I expect high quality sound and visuals in the products which are produced for our computer. The visual aspects of Wayne Gretzky Hockey are simply great. For all the movement that 12 separate players require during play up, down, and across the ice, everything has a very real flow to it. When you're watching the play from the game's overhead view the game gives you, you feel that a real human game is actually taking place below.

During certain pauses of play (fighting, scoring of a goal, or penalty) a special video screen appears. The screen is much like ones seen at the Capital Centre, the Spectrum, or any such arena around the country. During a fight between two players, a fight sequence is shown on the screen. When a penalty

occurs, the referee's official signal shows what the penalty is and the term is shown below him (roughing, tripping, holding, etc.). The penalized team and player name then follows to identify the culprit. When a goal is scored, the word 'GOAL' flashes across the screen, followed by the player's name and the name(s) of those that are officially credited with an assist. At the end of the game, you see the players heading back to the dressing room. Upon close examination, those players can be identified as Brad Marsh (#8), Doug Crossman (#3), and Mark Howe (#2) from the 1987-88 Philadelphia Flyers. The folks at Bethesda Softworks have found a great balance. Fast, smooth action with minimum distractions during game play, and Amiga-style special effects during game breaks!

The digitized sound effects also add to the feeling that you're playing a real game. All of the sounds you would expect to hear at a hockey game (crowd noise, a referee's whistle, the puck hitting the boards, the end of period buzzer, etc.) came through very well. Once again the use of sound adds to the action without overwhelming or slowing it down.

As a long-time hockey fan, my thanks go to Bethesda Softworks for creating a hockey game that is simply super. The graphics, the sound effects, the many options, and total playability of this game makes it a valuable addition to my computer sports library. This game is totally deserving of the name of one the greatest hockey players in history - Wayne Gretzky.

Wayne Gretzky Hockey \$49.95
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Dev Pac Amiga v 2.0

A New C Development Package From HiSoft

by Dave Haynie

While the C Programming Language is perhaps the most popular language in use on the Amiga, there's recently been lots of growth in development packages for programming in other languages. Perhaps the greatest level of growth has been in assembler systems. Devpac Amiga Version 2 is the latest release of HiSoft's complete assembly language development system for the

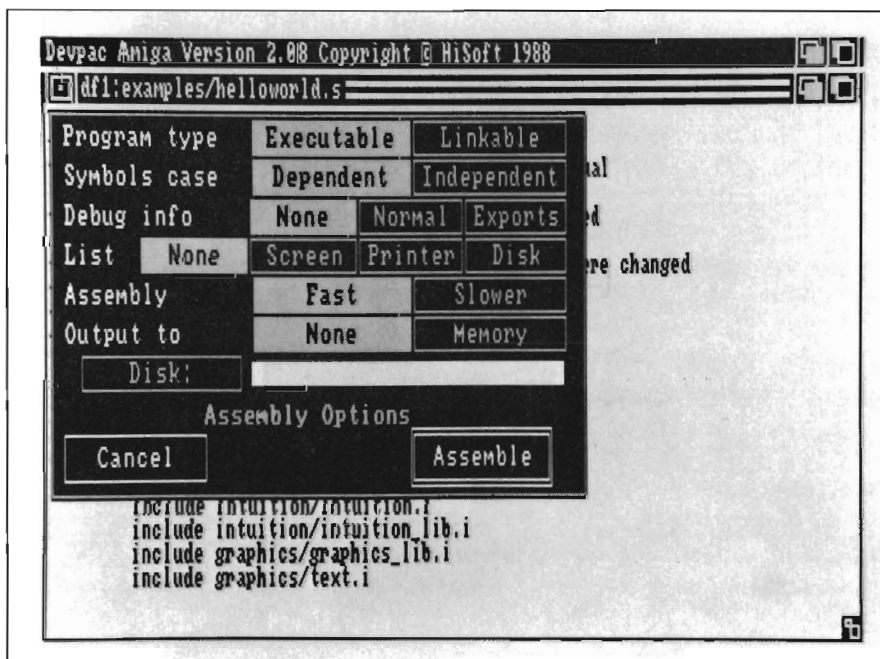
Amiga, and is certain to up the ante in this field. (DevPac is distributed in the USA by MichTron, Inc).

What You Get

The HiSoft package includes a 200+ page manual and two floppy disks. The basic Devpac software consists of three programs: "GenAm2", the screen editor/environment; "GenIm2", the assembler; and "MonAm2", the debugger. The package also includes three sets of include files: the standard Commodore-Amiga include files (currently the 1.2 includes), the stripped

version of the C-A includes, and a specially prepared set that's designed to work faster with the Devpac. Also on disk are the C-A "fd" files plus a program designed to produce library offset files for DevPac from these, a nice touch. Finally, there are several examples, the BLINK linker for multiple object linking, and the ARP (Amiga Replacement Project) documents and library. The first DevPac disk is set up as a fully working environment, though you'll have to know at least a little about what you're doing to install it on a hard disk. HiSoft "forgot" to provide an easy installation program.

Setup is achieved through Devpac's own preferences window



The manual itself is a wonder to behold. You can't always judge a program by its manual, but I've often found it hard to judge a program if the manual appears to have been written by pre-schoolers. The Devpac manual is not only thick, indexed, and well constructed, it is also very well written. I read through the whole thing in one sitting, and found everything to be clear and quite readable. There's ample information in the beginning on system setup, followed by a quick "get started now" section that walks you through an example. Next are sections on the editor, the assembler, and the debugger. Where appropriate, important aspects of a particular topic are highlighted with boxes. I found this very useful for quick scans of the manual. Then come the appendices, which include a short introduction to the Amiga's CLI (Devpac doesn't run

from WorkBench), information on converting from other assemblers, information on the changes between Devpac 1 and Devpac 2, and finally a summary of all 68000 instructions. There's also a reasonable bibliography for folks needing more information on either Amiga or 68000 programming.

The Editor

I started the editor out on a very large assembly language file, one of over 600K in length. I created this by running OTG's DSM disassembler on a version of the MicroEmacs program. While the average user will (hopefully) never work on a single assembly source of this length, I figured something this large would make a good acid test.

The Devpac editor, GenAsm2, is one of the "pre-allocated buffer" kind. That means you have to tell it how much memory you'd like to use for it before you start editing. All edited text must fit in RAM, and any attempts to the buffer size will clear the buffer. Hi-Soft points out that most Amiga users have large memories, so that the extra complexity of paging to a disk isn't needed, and I agree. There are basic functions available via Intuition menus, and most of these are also available through Amiga key sequences. I find this the best mix of features in any professional program. You'll use the menus when you're learning, but switch to keystrokes, at least for the common commands, once you get proficient.

GenAsm2 opens a WorkBench window, which is sizable, and it reacts properly to the sizing of this window. There's a status line at the bottom, and the filename at the top (in the menu bar), leaving 22 lines for actual editing.

Simple cursor movement is available via mouse positioning as well as the

cursor keys. I was surprised to find that GenAsm2 also supports the cursor key sequences from WordStar (an ancient CP/M and MS-DOS text editing program). This choice seems quite strange to me on an Amiga, but to each his own. Shifting a cursor key moves more at a time, an ALT cursor key moves even further. Other key sequences similar to those of WordStar control line delete and insert. Block oriented commands, pretty standard

“ The Devpac manual is not only thick, indexed, and well constructed, it is also very well written”

cut/paste/save commands, operate from the function keys. The menu commands are pretty simple. The first menu lets the user load or save files, insert a file, print a marked block, change the current directory, or clear the edit buffer. All file commands use the ARP file requester, if you have the ARP library (which is included), or just a simple string requester, if there is no ARP library. The second menu controls the find and replace functions, which access a pretty standard string requester for string input. Replacements can be "next" or "all". The "all" option has an "Are you sure?" submenu, which does a nice job of keeping this from being selected instead of the single-item choice. The third menu lets you move to the top, bottom, or a specific line in the file. You can also call up the program preferences requester, which selects buffer size and several other parameters. Perhaps due

to the pre-allocated buffer, the editor is extremely fast at loads and saves. I found that my 600K+ file loaded from hard disk in a second or two, versus over a minute loading it into MicroEmacs. I had some editing to do, and found the search and replace commands to be equally fast as compared to MicroEmacs. This editor is certainly nowhere as powerful as most MicroEmacs implementations, but it's a good argument for using assembly language instead of C in some cases. It is, however, a bare bones editor. There's no support for multiple buffers, for instance, and the cut and paste functions don't use the clipboard, so there's no way to cut and paste between two copies of GenAm2. And as you might expect, there's no way to program macros.

The final menu selection is perhaps the most interesting, in that it allows you to run the assembler, debugger, or finished program without leaving the editor. This gives essentially the same kind of integrated type programming environment popular on machines that offer only full-time WIMP interfaces, without any sort of command shell. While after trying both, I like the command-line interface better for many things, there are significant advantages to something that acts like an integrated environment. For example, everything, editor, code, assembler, and debugger, can simultaneously reside in memory, making things go extremely fast. And since the editor knows about the assembler, you can select the "Jump to Error" menu item after an in-editor assembly, and your cursor is positioned right at the offending line.

I suspect most hard-core programmers will choose their own favorite editor over GenAm2. Beginners, or folks on small Amigas, will benefit from it the most, both for the integrated environ-

(continued on next page)

DevPac (continued from previous page)

ment (most important without a hard disk) and the small size of the editor (under 24K). It works just fine, but it doesn't have the advanced features I'm used to.

The Assembler

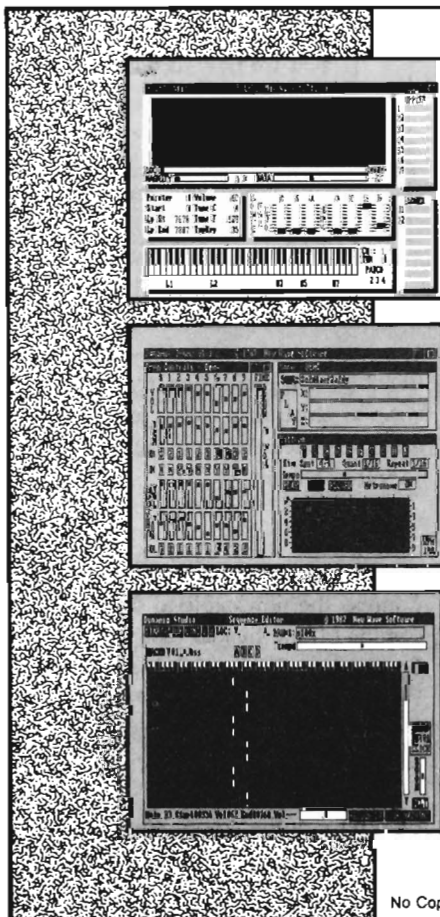
As mentioned, the Assembler "GenIm2" can be called up from within the editor. It can also be run stand-alone from the Amiga's CLI. This is really a nice system, since you can choose between the integrated or CLI based environments. Everyone has their personal preferences in these matters. The command-line options given from CLI are entered into a requester when called from the editor. The first thing I tried was an assembly of my code from the editor to memory. You'll notice that there's no linking phase here, and that's intentional. The assembler can assemble self-contained programs directly to

an executable image. It will take some memory, though. My 600K+ program assembled to memory in just about 61 seconds, using about 150K during the assembly. That's fast -- over 400 lines per second on an A2500; a standard Amiga will no doubt be somewhat slower, but still very fast. I barely even noticed the assembly time of some smaller programs. It also seems to handle include files pretty efficiently. If you have the memory to handle them, it will load them only once during the assembly. Typically, assemblers must run in two passes, GenIm2 included.

Next, I ran the same assembly from the CLI, this time assembling from hard disk to hard disk. The time increased, but only slightly, to about 67 seconds; apparently, it's reading from disk about as fast as the filesystem will permit, the same thing I noticed with

the editor. This is certainly due to the fact that the assembler normally keeps everything in memory. There's an option that will defeat this, increasing the assembly time, but decreasing the need for memory. Since it's also possible to produce standard format object code with GenIm2, I tried building the same program with that option and BLINK. This took 75 seconds from disk. Obviously, my fast hard disk helps out in these timings. From floppy, the integrated setup will be an amazing advantage over CLI based work, especially if the memory is available.

Of course, speed doesn't mean much if you can't otherwise live with the assembler. Fortunately, the Devpac assembler passes here just as nicely. I've run all kinds of pretty standard stuff through it, mainly stuff that worked with the Metacomco Assembler, the de-facto Amiga standard, and it assem-



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The internal sound capabilities of the Amiga are better than that of any other personal computer. These capabilities mean nothing though, without quality digital sounds, which up till now have been scarce. Sound Oasis gives Amiga owners access to a large library of studio-tested digital samples, by using the Amiga's built in disk drive to read disks made for the Mirage Digital Sampling Keyboard. Sounds can then be played from a MIDI keyboard, the computer keyboard, or saved as an IFF standard file. Mirage is a trademark of Ensoniq Inc.

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bled everything correctly. I used the Lattice include files (since I had them on disk), supposedly equivalent to the Amiga includes, and they worked without problems. About the only thing different, other than the speed, is that GenIm2 reports warnings for instructions like "BNE.L LABEL". That had me for a second, until I realized that "BNE.L", a long relative branch, is in fact a 68020 instruction. Most good assemblers can optimize branches, and in fact, that's what they all do, but GenAm2 was the only one I've ever used that reported the instruction as a warning. Good call!

The assembler supports all 68000 opcodes, and all of the standard (eg, based on Metacomo) assembler directives. Along with that, it has some nice enhancements. For instance, it allows named local labels, as well as the MCC style numbered type. In addition to ac-

cepting standard INCLUDE directives, it'll also allow raw binary data to be included, and the search path for include files can be specified in the assembly file. In fact, from GenAm2, this is the only way to specify the include path, though from CLI, this can be supplied on the command line, as with other assemblers. This is also probably the only change necessary to assemble standard Amiga code from the integrated environment. A number of options can be specified using the OPT directive, many of which are replacements for command-line options. There's also very good support for conditional assembly and the format of listings, two things more important to the professional user than the casual user. One particularly useful feature is the extended section types. Although you can specify the standard CODE, DATA, and BSS sections, GenIm2 will allow you to specify sections to be loaded

specifically into CHIP or FAST memory. This is obviously an Amiga specific option. On the other side of the coin, it's possible to specify an absolute position for a code segment, which is useful only if you're developing code on the Amiga for ultimate use on another 68000 machine. Such use isn't fully supported, though. For instance, there's no way to produce a standard transfer format for loading into ROM or a foreign machine's program loader, though the resulting Amiga load format could certainly be converted via some external program for this.

The Debugger

Now, unless you're really, really, lucky all the time, you'll sooner or later need a debugger, and no professional development system is complete without one. The Devpac debugger, Mon-

(continued on page 62)

The Securities Analyst

The Securities Analyst is a stock charting and analysis program for the Amiga series of computers. It permits the individual investor to chart any number of stocks over an extended period of time. Using Securities Analyst, the investor can make scientific buy-sell decisions based on an analysis of market trends. The forms of analysis include:

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A Comparison of Hard Drive Backup Utilities

by Steve Dock

What's more important for Amiga owners than flouride and flossing are for good dental health? What's talked about as much as football and practiced as little as skipping desert? The answer to the riddle is: managing your harddisk. I've said many times that the Amiga benefits from the addition of a harddrive more than any other personal computer. I stand by this even more since the

official introduction of Workbench 1.3 and the fast file system. Many thousands of Amiga owners have purchased 20, 40 even 80 megabyte drives for their systems and with Commodore's introduction of the 2000-HD we can expect an increasing percentage of harddrive owners. With the expanded capacity and performance come responsibilities.

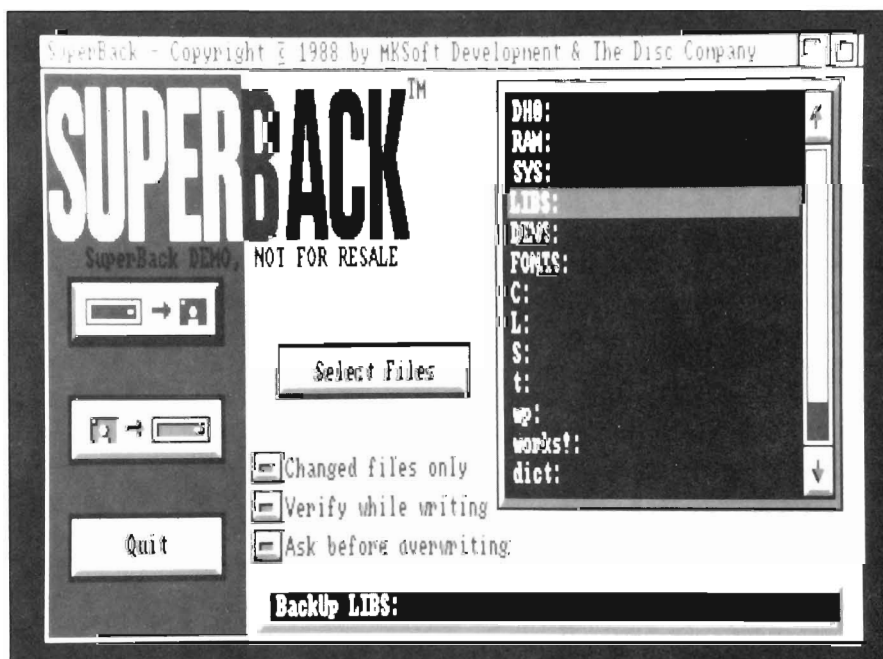
All harddisk's are subject to fragmentation of files and loss of data. Many of you have probably experienced a sinking feeling when a requestor appears stating that "Volume DH0:

has a read/write error". In most cases you can click on retry and get on with what you are doing. However once in a while the requestor

will be followed by a visit from the GURU and permanent loss of your most critical files. The Amiga community has been lucky so far in the strains of Viruses which have infected us. I am not aware of any which attack harddisks. This is not the case in the PC and Mac community. For all these reasons, every harddrive owner should spend the time to evaluate, purchase, and use a disk backup utility on a regular basis. You may not prevent a problem but at least you can recover from one if your data is properly archived. What's wrong with the Copy command and several disk utilities that are in wide spread use? Nothing of course, if none of your files are larger than the 880 KB capacity of a single floppy disk. Or if you don't mind selecting sets of files or directories which fit on one floppy.

We reviewed Quarterback from Central Coast Software some time ago, and have continued to be pleased with this software. Additional features have been added, along with support for the FFS and many new harddrives. Many in the Amiga community consider Quarterback V2.2 the standard of our community. In this article I will revisit Quarterback along with two new utilities: Superback from the Disc Company, and Express Copy from Express-

The Superback Work Screen



Way software. Since all three perform the same basic set of functions, what should you look for when deciding which to buy?

A disk back-up utility should be easy and fast in order to encourage regular use. In addition, it should handle common interruptions and disk errors gracefully. Other features to consider are quality of documentation, support and extras. Lets start by examining Superback.

Product Overviews

Superback comes in a large black and white box which contains a thirty page manual which is printed in English, French and German and bound together. I consider this a real plus, since we can learn a lot of foreign computer jargon by comparing the three sections. Amiga owners in Canada and Europe may have a more practical appreciation for this approach. The manual itself is attractively printed, well organized and informative. It includes sections on "backup strategies" and advanced techniques as well as a glossary.

Start Superback from its ICON or use the CLI. In either case a colorful custom screen will appear with a large file requestor on the right and several gadgets on the left. Click on the "Select Files" gadget to begin building a complete catalog of the files on your harddrive. Superback's selection screen will open and you can specify which drawers and files you wish to include or exclude. Simply click your mouse pointer over a file or drawer name and it will be excluded. A running total of the number of files and bytes will be presented at the bottom of this screen. Click on the Backup gadget to proceed. Superback will prompt you to insert a disk in DF0: and begin. You could use another type of selection prior to building the catalog of files.



The Express copy work screen

Click over the "changed files only" gadget to restrict your backup to only those files whose "archive bits" are not set. AmigaDos keeps records on every file. These records are called protection bits or flags. One of these bits is intended to be used by harddisk utilities. As Superback copies each file to floppy, it turns its archive bit to a 1. If you change a file, or create a new file its archive bit will be set to 0. Superback therefore has a mechanism for telling whether a file is already backed up. If much of your harddrive stays constant, eg; lots of programs, you don't need to back the entire drive up each week.

Superback reads data from your harddrive into a memory buffer which will grow as large as your memory capacity permits. Another process writes to the backup floppies a track (11K) at a time. The floppy disks don't need to be formatted, Superback will format them as it works. The archive floppy disks are not AmigaDos format but can

be copied by diskcopy. Most harddisk backup software uses data-compression to squeeze redundant bytes from your data and pack more on each floppy disk. When the developer chooses to do this they usually choose to bypass AmigaDos too. Superback will prompt you to insert a new disk with a beep and continue to read into its buffer while you are doing so.

The only options related to the backup process itself are protections against yourself and bad media. You can elect to read the data after each track is written by clicking on Verify. I strongly recommend this option since one bad disk in the middle of your back-ups can surely ruin your month. Finally you can "Ask before overwriting" to ensure that you don't accidentally insert a valuable DOS formatted disk.

On to Express Copy (XCO) This program is unusual in that it writes Amiga Dos backup disks without data com-
(continued on next page)

Backup! (continued from previous page)

pression and can be used to backup from one floppy to another. (It does format the disks as it works). A sixty-three page manual details everything you ever wanted to know about hard-disk management. Aside from the very exhaustive manual, XCO stands out for its installation procedure. Open the XCO disk icon and click on InstallXCO. Several files will be copied to your SYSTEM and L directories. If you open the System drawer on the XCO disk you will find two icons. XCO is used to backup and XCR for restoring. The XCO screen contains gadgets for selecting which drive you want to backup from and which drives you want to write to. Up to four floppy drives can be used during a backup operation. You can exclude those files which have their archive bit set. XCO adds several other kinds of selection which Superback didn't include. You can specify a date which will be checked on each file's timestamp. If the file data is earlier than that time it will be skipped. You can also specify a pattern of text to restrict your backup to certain types and names. Finally you can save the set-up selections you have made for future use.

When you give XCO the go-ahead, it will start a background copy task and open a small window which displays a slider gadget. XCO emphasizes its ability to multitask while working and this slider lets you change the priority of the XCO task. I don't especially like the idea of working on other tasks since I have enough trouble inserting the correct disks when backup is the only task going on.

Quarterback's comes in a small plastic case with a handy manual. The documentation covers much the same ground as the others, eg. why and how to backup. It is attractive and readable. The program begins by presenting a screen where you elect whether to

File Name	Size	Date	Time
AddBuffers	876	13-DEC-87	0:23
addmem	4196	13-DEC-87	1:34
arc	50304	1-NOV-88	18:49
Ask	648	13-DEC-87	0:23
Assign	3008	13-DEC-87	0:24
Avail	1964	13-DEC-87	0:23
backup	19600	1-NOV-88	18:49
Binddrivers	2920	13-DEC-87	0:23
Break	956	13-DEC-87	0:23
CD	1756	13-DEC-87	0:24
ChangeTaskPri	1072	13-DEC-87	0:24
cls	204	1-NOV-88	18:49
cmp	6032	1-NOV-88	18:49
conman	976	1-NOV-88	18:49
Copy	9848	13-DEC-87	0:24
cp	1180	1-NOV-88	18:49
d2d	26728	1-NOV-88	18:49
Date	4208	13-DEC-87	0:24
dcopy	9344	1-NOV-88	17:36
defdisk	6288	1-NOV-88	18:49

backup or restore from floppy. A catalog of files is built as the first step and you can then restrict selections. Gadgets and mouse clicks are used to indicate which files to exclude by name, date, or archive bit status. You can choose to include the selection rather than exclude if you are a positive type of person. A running count of bytes and disks required is prominently displayed in the top left corner. When you click on OK, Quarterback presents another screen of options. Do you want to set archive bits, write an archive report, beep or flash the screen? You can backup to multiple floppy disks also. Quarterback writes non-dos disks using data compression and formats as it goes. Quarterback also has provision for storing the set of options as a configuration file.

Product Testing

I conducted several tests of each product to assess speed and ease of use. The numeric results are provided in the tables. One set of tests was performed on an A1000 with a non-dma drive using WB 1.2. The other system

was an A2000 using the Commodore A2090-A and FFS. It is no surprise that the FFS tests were all faster for about the same amount of data especially the directory loads. Other than that difference the time variances were not overwhelming for any one product. All three products worked with both file systems and produced functional backups.

However there are differences in style and error handling that are significant. With verify on, if Superback encounters an error on a floppy disk it presents a warning requestor and aborts!! This could require restarting even if you are on the last disk. I caused the same kind of abort when I clicked on OK before fully inserting the disk in the drive. I found the Superback screen easy to use and very fast but missed the ability to use df1: as well as df0:

Express Copy's user interface was a little awkward. You are presented with a list of volumes and directories and must manipulate this list to identify the source and target drives. It could be a lot easier if you could just type into a

gadget! XCO presented nice requestors to ensure that I wasn't overwriting important disks. Having two different programs, a separate special CRC checker for the backup disks and dozens of command line options is a dead giveaway as to XCO's market; CLI hackers. The support for multiple drives is good, but again emphasis on multitasking while backing up your vital data may be misplaced.

Quarterback includes all the options of Superback or XCO and responded gracefully to various errors. When I used the same bad disk which caused Superback to Abort, Quarterback presented a warning and requested another disk. The backup continued to a successful conclusion. The file selection screen includes gadgets to return to the root of a directory tree as well as a parent. I find myself using this feature often. My overall impression of Quarterback is smooth and complete.

Summary

Any of these products will protect your important programs and data if you use it regularly. I would tend to avoid Superback due to the Abort on disk-errors and would recommend XCO to those who can never have too many tasks running. For the average Amiga harddrive owner, Quarterback is still the utility of choice.

Quarterback - \$69.95
 Central Coast Software
 424 Vista Ave.
 Golden, CO 80401
 (303) 526-1030

Superback -\$79.95
 The Disc Company
 3135 S. State St.
 Ann Arbor MI 48108

Express Copy \$44.95
 Express-Way Software, INC.
 P.O. Box 10290
 Columbia, MO 65205
 (314) 474-2984

Table 1- Testing With 20 Megabyte Non-Dma Drive Workbench 1.2

636 Files - 5,696,738 Bytes backed-up/restored

	<u>Time Required</u>		
	SuperBack	Express	Quarterback
1. Build Directory of Files	1:50	1:36	1:32
2. Backup Number of Disks	9:37 7	9:44 9	9:32 7
3. Backup with Verify	18:44	19:12	16:30
4 Restore	15:21	18:10	18:34

Table 2- Testing With 20 Megabyte Dma Drive Workbench 1.3 FFS

626 Files - 6,026,908 Bytes backed-up/restored

	<u>Time Required</u>		
	SuperBack	Express	Quarterback
1. Build Directory of Files	:24	:23	:21
2. Backup Number of Disks	7:10 7	7:20 9	6:12 7
3. Backup with Verify	9:18	11:44	11:05
4. Restore	15:21	18:10	18:34

Heroes of the Lance

An Amiga Chapter in the Dragonlance Saga

by Anthony Bevivino

It is now more than three hundred years since the Cataclysm, when the wrath of the gods descended upon Krynn. With the only direct access portal denied her, the Queen of Darkness spreads her power across the land by awakening the evil dragons and creating the Draconians. Once in control of Krynn, she will be free to force entry to the world. Only the "Companions of the Lance" (they aren't "Heroes" until they succeed) can

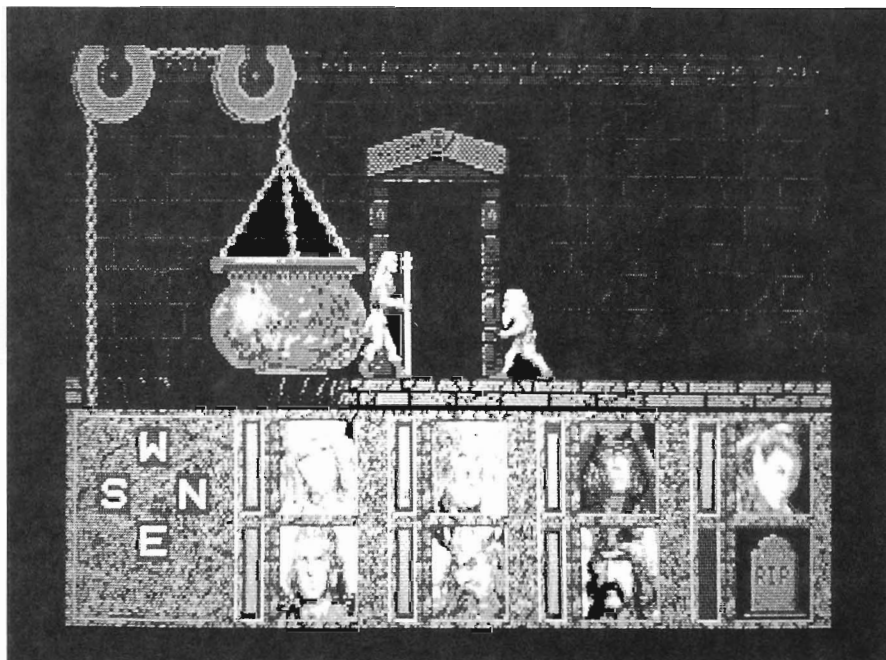
stop her final victory. Should they fail, the Queen of Darkness will be free to come through from the Abyss into the world and darkness will cover Krynn for all eternity as she and her Draconians will control the largest, most evil empire ever created.

The only threat to her awesome power is the possibility of a revival of the worship of the old gods. In the years since the Cataclysm, the inhabitants of Krynn have lost their belief in the gods. Before opposition to Takhis-sis can be united, you must restore faith in the old gods by recovering the

Disks of Mishakal from the ruins of Xak Tsaroth. Use of their knowledge will bring True Healing back to Krynn and restore faith in the old gods, allowing them to intervene in the fate of their worshippers. More importantly, it allows them to confront the Queen of Darkness directly and restore the balance between Good, Evil and Neutrality.

This mighty relic is the only hope for Krynn and you must aid the Companions in their quest to retrieve the Disks. Unfortunately, the Disk's aren't just lying in the ruins, but are actively guarded by Khisanth, an ancient, huge, black dragon, served by Draconians who have enslaved the local Aghar (gully dwarves)."

Action from Heroes of the Lance



Heroes of the Lance is an eagerly awaited release from TSR and SSI that is the first official computer game from the makers of Dungeons & Dragons. It is based on the enormously popular Dragonlance Saga, also from TSR, and is designed to appeal to D&D players and those who have read the books. I am a Dungeons & Dragons player and have read all of the books in the Dragonlance Saga, so my expectations, as well as my knowledge of what is going on in the game, are somewhat higher than normal. The purpose of this game is to take your party of eight and recover the Disks of Mishakal. You must face a variety of traps and a horde of evil beings, ruled

by the ancient dragon, Khisanth, before you can complete your quest. Can even the Companions of the Lance succeed where countless others have failed??

For those of you who have read the books, the characters seem like old friends. For those of you who have (unfortunately) not read the Dragonlance books, here is a summary of the characters in your party:

Tanis - also known as Tanthalas, or Tanis Half-Elven. Tanis is the leader of the Companions. He is a master swordsman as well as an excellent archer, and this combines with his Elven abilities to make him a formidable opponent.

Caramon Majere - the twin brother of Raistlin, Caramon is a huge, powerful warrior. He is a good, caring man, but he shows no mercy to his enemies. Caramon is a mighty warrior, and few can match his skills.

Raistlin Majere - is the frail, sickly twin of Caramon. Raistlin is a talented mage, though often underestimated. He uses the Staff of Magius to cast his deadly spells.

Sturm Brightblade - one of the last true Knights of Solamnia, Sturm is a great warrior as well as a man of honor. Trained in the ways of combat by the Knights of Solamnia, his two-handed sword is a mortal threat to any foe.

Goldmoon - a chieftan's daughter, Goldmoon was slated to marry the next chief, like all others before her. This was not to be so, as the gods gave the Blue Crystal Staff into her hands. With this Staff, Goldmoon can use the power of the old gods.

Riverwind - a member of the same tribe as Goldmoon, and her true love,

Riverwind is a ranger with great skills. He is a skilled swordsman and archer, and also possesses wilderness skills. He will protect Goldmoon whenever she is in danger.

Tasselhoff Burrfoot - when most people see Tass, they lock up their possessions and check their pockets, and with good reason. Tasselhoff is a master thief, and armed with his Hoopak staff is an opponent not to be taken lightly.

“ You must face a variety of traps and a horde of evil beings, ruled by the ancient dragon, Khisanth ”

Flint Fireforge - the oldest member of the Companions. Flint is as dependable as they come and a great warrior. Strong and sturdy, Flint is a superior axe fighter as well as an experienced adventurer.

These are the members of your party. Know them well, understand their strengths and weaknesses, and they will serve you just as well.

Once you have begun your quest, you must be prepared to face the minions of darkness. The weaker of your opponents include Gully Dwarves, Giant spiders, and, of course, men. You will also have to face Draconians, or "Dragon-men." These come in two varieties. The Baaz Draconians and they're the weakest, wear armor and fight with swords. Bozak Draconians are rarer, but more powerful. They do

not wear armor, but are harder to hit, and they cast mighty spells. Some other enemies include Trolls, Spectral Minions, and the dreaded Wraiths. None of them can compare with the greatest of enemies, Khisanth. This huge, ancient black dragon is pure power and pure evil. She is the greatest obstacle in your quest.

As you enter the ruins, you see the lineup of your characters on the bottom, with two rows of four. Distribute them wisely. In order to cast spells your spell-casters need to be in the first rank. When the party gets hit, the entire first rank takes damage, so the leader is not the only one who gets injured. It is a good idea to put injured members in the second rank until they are healed. The perspective is two dimensional from the side. You only see your lead character, and he is the one who picks up all items and engages in physical combat, so keep a fighter up front.

When you meet foes, you enter into one of two combat modes, ranged or melee. If you are over one fourth of the screen away, you may use a ranged weapon. Most, but not all, of the party carry missile weapons. These include arrows, spears and throwing axes. Used with skill, these weapons can destroy or weaken your enemies without the party taking any damage. Watch that you don't use up all your arrows up early and that you pick up your weapons after you have thrown them. Once the enemy gets too close, it's time to put the bow away and prepare for some "hack & slash" action. Fighters, such as Sturm and Caramon are the best for this, as they hit the most and do the most damage.

Your other alternative to physical combat is to cast spells. Raistlin uses the Staff of Magius to cast Magic-user spells. Casting spells such as magic
(*continued on next page*)

Heroes of the Lance (continued from previous page)

missile, web, and sleep at the right time can make the difference between life and death. Goldmoon uses the Blue Crystal Staff to perform Clerical magic. Goldmoon primarily heals, but she can also cast spells like *spiritual hammer and hold person* to attack her enemies. There is a limit on the number of spells you can cast. Each spell uses up charges, and each staff has 100 charges, so don't cast a spell at every turn.

As you journey through the ruins, you will come across a variety of items. Some items, like gems, have no use aside from bonus points. Other items are magical. Potions can heal, or give strength or invulnerability. Wands and scrolls let the magic users cast spells. Rings have a permanent power, but it's up to you to find out what it does. There are many other items that will turn up, but their use and value is variable and you must decide if they are any good.

Since *Heroes of the Lance* is a graphic adventure, the quality of the visuals are of the utmost importance. While *Heroes* is not full of truly stun-

ning graphics, it is well done. There is good detail in every scene, as well as good use of color. I could look at the screen for a long time without a headache. Your characters and the monsters look very life-like. You will be pleased with the detail and realism of the characters. My only complaint deals with the animation. I felt that the movements were just too slow. It seems that movement and combat took too much time to keep a tense and action packed pace. The actions are smooth, it is just that it takes an awful long time to get anything done.

I was also a little disappointed in the sound. There was not enough to even make mention of. I think that background music would have been a big plus, but it's not there. The sounds that are used for combat are a bit weak, also. While the lack of sound did not take away greatly from the game, I feel that it's addition would certainly have added to the game.

Control in this game is above average. The game responds well to the commands. In some ways, it responds

too well. When I wanted to do a series of movements, the previous one would continue past when I wanted it. The game is best played with a joystick, and while a keypad can be used, I don't recommend it. My problem with this area is that there are not enough movements possible. You can move left and right, run left and right, and move in and out of doors. That's it. The moves are effective and simple, but SSI could have given us a little more.

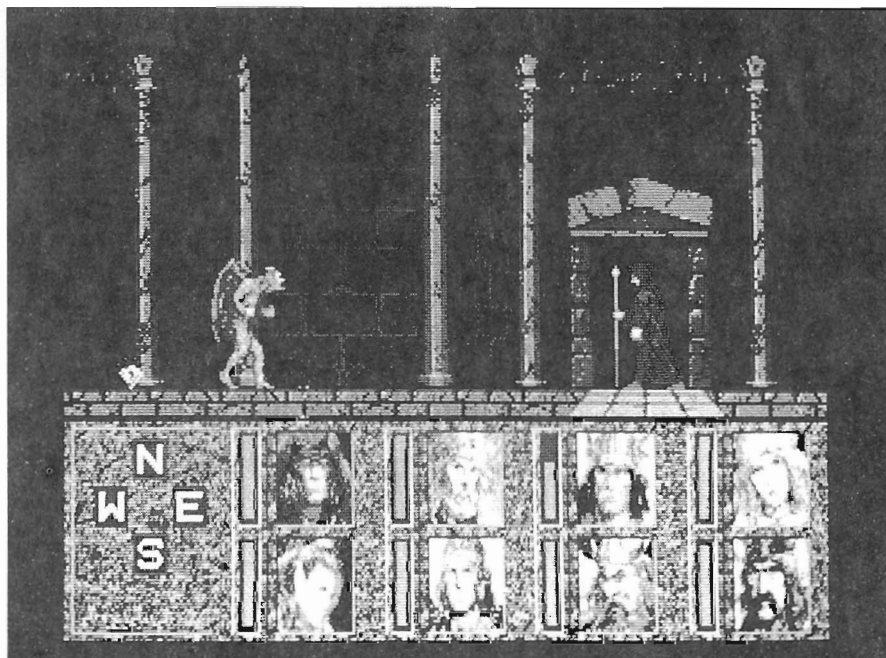
As far as gameplay is concerned, I was pleased. I liked the story very much, and this added to my enjoyment. The game itself was fun, except for the slowness mentioned above.

Heroes of the Lance is not copy protected on the disk. The first thing you should do is copy the disks. It is document protected, however. This is a very reasonable method and I think it was a wise decision. Disk access in the game is very good. It takes a while to load, but once you are playing, it does not go to disk that often, and disk access does not slow the game any. I was a little annoyed that the game uses only one drive, as it is a two disk game, but this is a minor complaint.

Overall, *Heroes of the Lance* is a worthwhile game. It does not break any new ground here. However, if you like *Dungeons & Dragons*, or the *Dragonlance Saga*, you will most certainly like *Heroes of the Lance*. If you want a solid adventure game, *Heroes of the Lance* just may fit the bill.

***Heroes of the Lance* \$39.95**

Strategic Simulations, Inc.
1046 N. Rengstorff Ave.
Mountain View, CA 94043-9986
(415) 964-1353





Book Review



Amiga C For Beginners

by Walter Steuber

An explorer stalking through the innards of the Amiga finds most of the software is written in the C language. It's a language that is hard to read and hard to write, but one that must be conquered if the exploration is to continue. It requires a major effort to get through this roadblock, so the question immediately arises--what is the easiest way? Abacus answers that by offering "Amiga C for Beginners" as an introductory, pared-down, practical guide to learning and using the language. It is Volume 10 in their series of tutorials specifically for the Amiga and will be followed real soon by "Amiga C for Advanced Programmers."

The conventional way to learn C has been to read through Kernighan & Ritchie's original book on the subject and do their exercises. This is tough, slow going and has led to the publication of many subsequent books that purport to explain things better and to make things easier, with titles like "C Made Easy". Every time I've looked through one of these books I've concluded that it has failed to explain things any better. K&R is outstandingly well written, but its terseness has tempted many writers to think they can teach the subject in a more understandable way. "Amiga C for Begin-

ners" is just one more of these attempts that fails. They treat the topics with different words and in a different order, but, for my taste at least, not any more clearly. "Amiga C for Beginners" necessarily is covering the same ground and restating most of the same subjects as K&R. To make it easier, it downplays or omits altogether a few hard-to-grasp concepts and it omits the exercises. I've seen a fair number of people who have deluded themselves into thinking they can learn C without going to the trouble of doing the exercises. They get through it quickly, all right, but end up not knowing what the language is about.

"Amiga C for Beginners" leaves out parts of the language that are seldom used in Amiga programs--clearly a big help in getting started. Making the connection between C and the Amiga is really different from learning C itself, and "Amiga C for Beginners" properly treats the two as separate topics. It devotes the first 205 of its 270 pages to teaching the C language as it would be written for any computer. After that, it begins introducing Amiga-specific usages. The usual way to learn to use C on the Amiga has been to read through source code found in the Fish disks and slowly latch onto the specialized way the language is used in a multi-tasking, multi-library environment. This, too, is tough, slow going, but there is plenty of good help available. "The Kickstart Guide to the Amiga", Rob Peck's "Programmer's

Guide to the Amiga", J.T.Berry's "Inside the Amiga with C", and R.J.Mical's "Programmer's Suite" contain wonderful instruction and guidance for reading source codes and writing Amiga-specific programs. These four serve as the standard by which I judge any effort to explain the use of C on the Amiga. Compared to them, "Amiga C for Beginners" offers little, if anything new. It perhaps has enough information to get one started, but it just does not adequately deal with the subject. All it claims to be is a simple introduction "without a lot of technical jargon", but there's not enough material even to support that modest aim. Its brevity implies that the whole subject is short and simple, but don't be fooled. It isn't. It is going to be followed by more material in the next Abacus volume and there is supporting information in some of the earlier Abacus tutorials, so the book doesn't have to stand entirely on its own. My recommendation to any beginner who wants to learn how to write programs in C for the Amiga is to go through Kernighan & Ritchie, doing the exercises but skipping parts that seem confusing. Then go through Peck, again doing the exercises. It will take quite some time, but it's a marvelous experience for anyone who enjoys programming.

Amiga C for Beginners \$19.95
Abacus Software
5370 52nd Street SE
Grand Rapids, MI 49508

Am2, can be easily called up from the integrated editor environment as well as the CLI. In fact, the editor allows the debugger to be called up alone, or the current program to be run in the debugger. In order to be as unobtrusive as possible, MonAm2 comes up on a custom screen. It displays a screen of information HiSoft calls a "front panel", inspired I guess by the physical panels once used on early microcomputers and even large machines. It dis-

Everything is keyboard driven, which seems to be just fine for all the debuggers I've used to date. The keyboard commands break up into several classes. Window commands generally control what's being shown on-screen, and also allow dumping to the printer. A series of breakpoint commands allow trapping on a variety of address and counter based conditions. The I/O commands let you load and save files in several formats. The execution

system as well as a 68000 system, and it's worlds faster than Metacomco, AssemPro, Lattice, or Manx, without loosing any features or compatibility at either the source or object level. It makes a decent use of the Amiga WIMP environment, if not WorkBench proper.

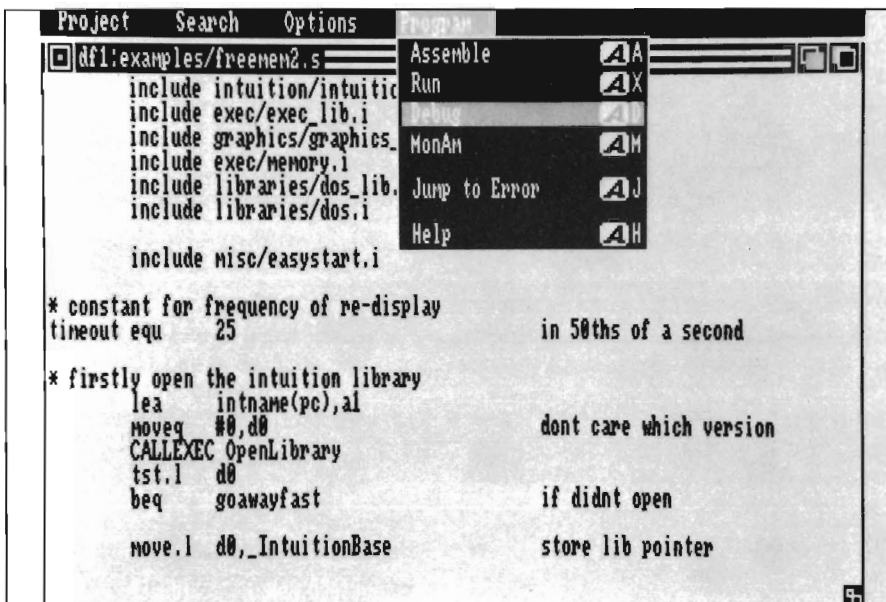
There were really only two things I could think of that I'd like added, and neither of these are serious complaints.

First of all, it would be nice in some cases to have 68020/68030 instructions, including the floating point and memory management unit instructions.

While most Amiga programs shouldn't code specifically for these special devices, if you're really trying to write floating point code on a 68020 that'll go as fast as possible, the only way is to directly code it using floating point instructions and the floating point registers. Several companies are offering 68020 specific version of programs that use the floating point instructions, and these really can boost program performance greatly.

And guess what! I didn't know it until nearly the last page of the manual, but something pretty much like this is available from HiSoft. It's called the Devpac Amiga Developer Version.

This version of Devpac has support for 68010/68020/68030 instructions (FPU or MMU instructions aren't specifically mentioned), and is designed to better support work across systems. It can produce Motorola S record, Atari ST, and Atari object file formats, and allows multiple absolute code segments, debugging between machines, and other good features. I haven't actually tried this version, but based on the standard Devpac, it's certainly worth investigation if you need something with those capabilities. Secondly, I'd prefer to see the integrated environment interfaces fully documented, and ideally available via the AREXX language. One of the great features of the



plays a constant view of the CPU registers (68000 registers only), and a dump of the memory being examined as both disassembled code and ASCII (all addresses are shown as 32 bit addresses for a 68020 based machine, 24 bit for a 68000 based machine). Note that MonAm2 is a symbolic disassembler, and it uses the Amiga standard symbol hunk format for it's symbols, which GenIm2 will produce. Because it uses the standard format, it'll certainly be usable mixed with object output from other assemblers or compilers, as long as those contain any symbol data. And of course, if you already have a standard Amiga format debugger, it will work with code produced by GenIm2. MonAm2 doesn't use much in the way of an Intuition interface.

commands allow a program to be stepped through or run. Finally, there are commands to search memory, fill memory, copy memory (even overlapping), and various other things. All in all, it's a reasonable debugger. It also manages to trap the various exceptions that show up as GURU messages, an essential tool when you're bug hunting.

About the only thing apparently missing from this debugger is the capability to trigger on a change of a specific data location.

Anything Missing?

Not much, really. I'm quite happy with the Devpac system. It worked great, without a single Devpac-generated crash. It worked on a 68020

AREXX system is that you can build integrated environments, much like what you get in GenAm2, with your own favorite pieces. So I could use an AREXX supporting Emacs (OK, it's slow, but I've been using it for 10 years, and don't really want to change) with an AREXX supporting GenAm2, and get all the integrated features I have now in GenAm2, but with my favorite editor. Though in all fairness, it could result in some slowdown as compared to how GenAm2 works now, and obviously, everyone doesn't (yet) have the AREXX system. Maybe in the next release? I'd certainly recommend Devpac for anyone doing extensive work in assembly language. It seems

to have all the bases covered. It can take full advantage of a nicely loaded Amiga, but it still should offer very fast performance on a base-level machine. It looks appropriate for assembly-only work, but as it will produce standard object files, it's certainly useful for mixing with high level languages, and I'm sure I'd use it in such a situation. You really get the feel that the folks at HiSoft wrote Devpac to use themselves, because it's a really usable system. I get the feeling from some programs that they were written and then forgotten.

I'd recommend Devpac for any Amiga based assembler work, and for cross

development too, especially considering the availability of the "Professional" version. I know of many people working professionally on Amiga software (even some who work for Commodore-Amiga) who've chosen the Amiga as their workstation, even though Suns, PCs, and VAXen were readily available. Programs like Devpac will make this an even more common choice of workstation.

DevPac Amiga V2.0 \$ 99.95

Michtron
576 S. Telegraph
Pontiac, MI 48053
(313) 334-5700

Back Issues

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Circle the back issues you desire. Fill out name and address on the reverse side, check off appropriate box for back issue order, and include \$4.00 per copy

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Issue 6: Fall Comdex, Photon Paint, Kindwords, Gee Bee Air Rally, Dark Castle, Pixmate, Light Pen, WBTools....

Issue 7: World of Commodore show,

IntroCad, SummaSketch, King of Chicago, Midi report for D-50, CZ101, MT32....

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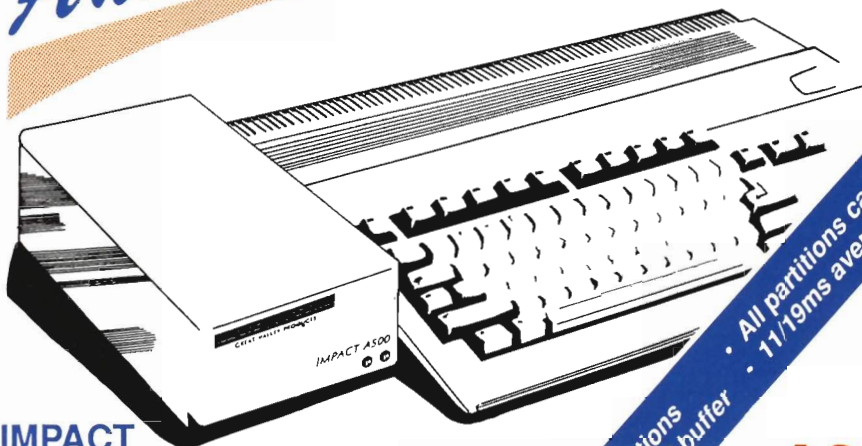
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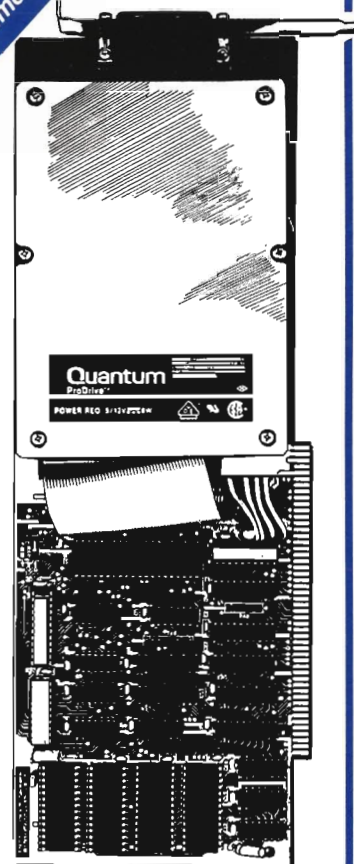
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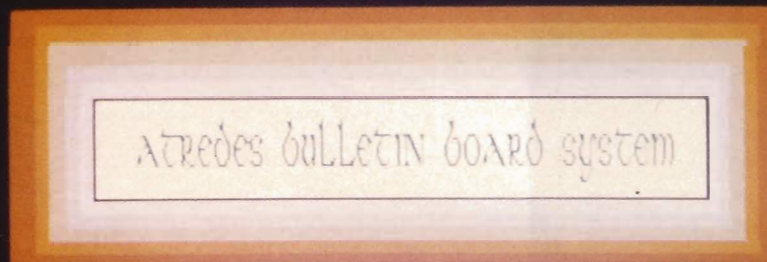
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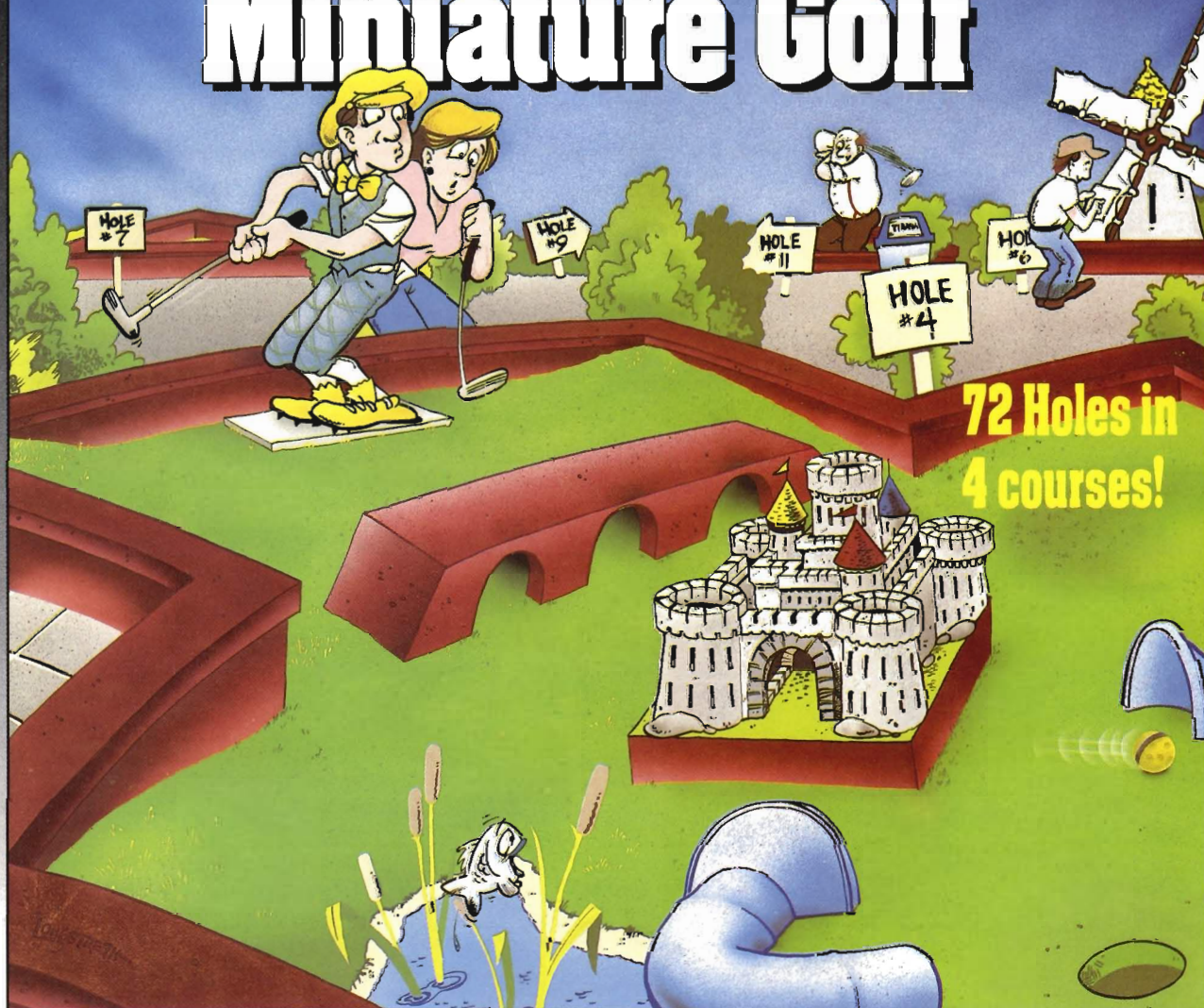
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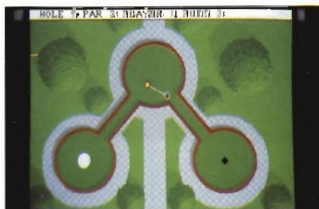
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