

**AMIGA**

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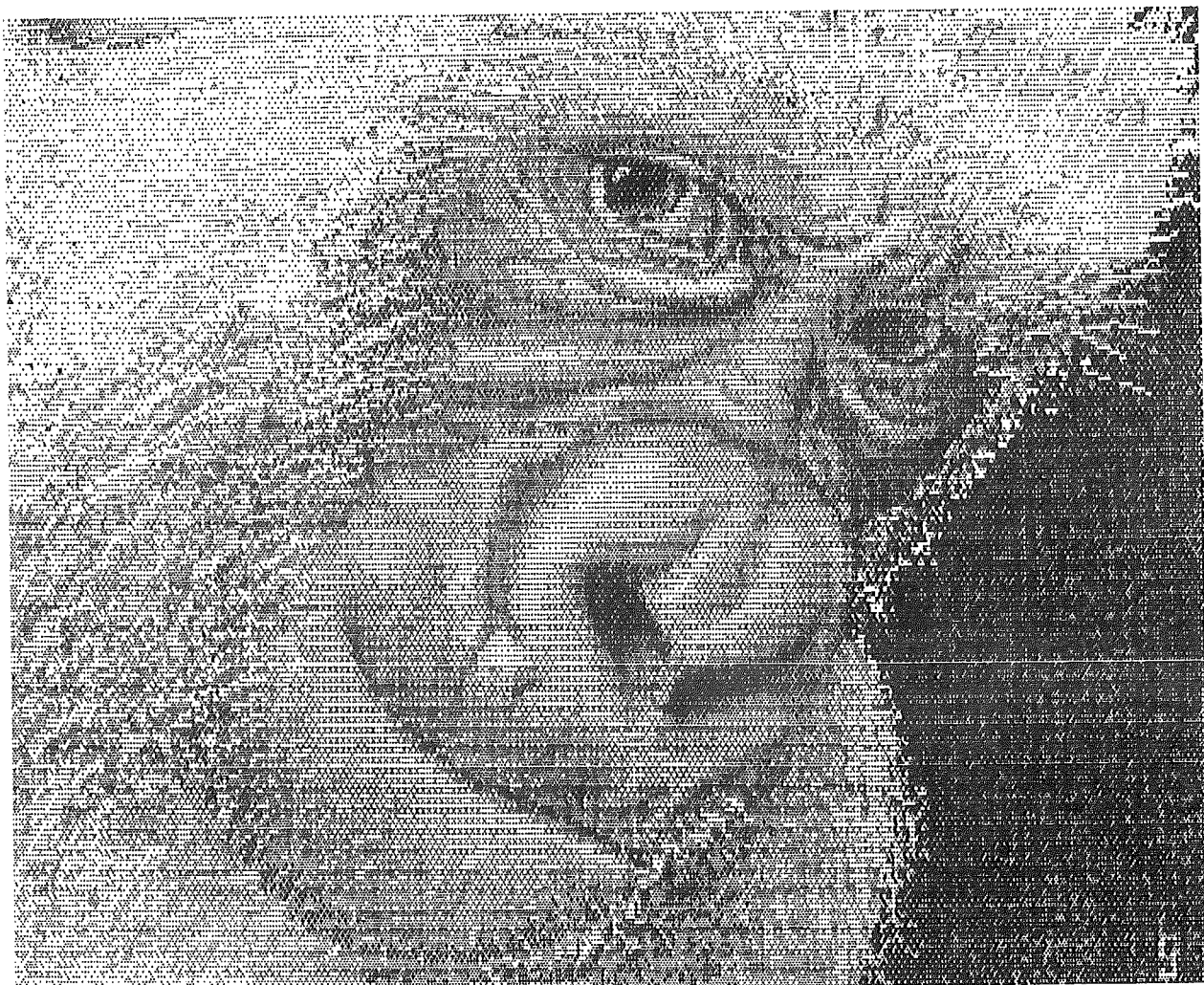
# WORKBENCH

## FOR THE COMMODORE AMIGA USER

Issue 6

Circulation: 350

November 1986



### **Next Meeting**

*Sunday, November 16th at 2pm*

**Important: Note the change of date!**

AUG meetings are held at Victoria College, Burwood Campus  
in Lecture Theatre 2. Melways map 61 reference B5.

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Amiga User's Group, PO Box 109, North Balwyn, 3104, Victoria, Australia

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# AMIGA™ Users Group

P.O. Box 109, North Balwyn, Victoria, 3104

## Club Meetings

Club meetings are held at 2pm on the second Sunday of each month at Victoria College, Burwood Campus, in Lecture Theatre 2.

The dates of our next few meetings are November 16th and December 14th. Note that due to holidays, there will be no formal January meeting.

## Production Credits

This month's *Amiga Workbench* was edited by Peter Jetson. Equipment and software used was: TurboDOS S-100 computer, Diablo 630 printer, Gemini 10x printer, Wordstar and Fancy Font.

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## Contributions

Articles, papers, letters, drawings and cartoons are actively sought for publication in *Amiga Workbench*. It would be appreciated if contributions were submitted on disk, since that means they don't have to be re-typed! We have access to a wide range of computers, so we should be able to accept almost any type of disk, but Amiga disks are certainly the easiest. Absolute deadline for articles is the last weekend of the month before the cover date. Contributions can be sent to:

The Editor, AUG, PO Box 109, North Balwyn, 3104

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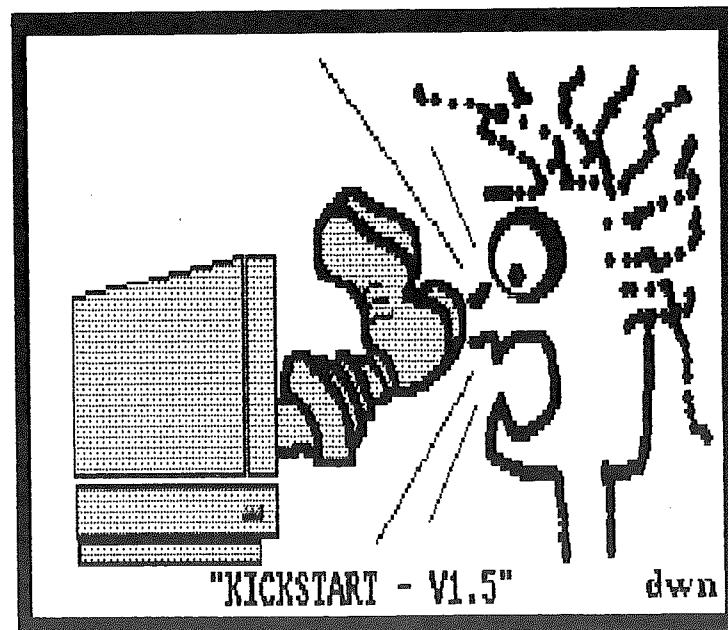
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When phoning committee members, please try to be a bit considerate and not call at meal-times, late at night, or during popular TV programs. If you only have a general query, try to ring the member who lives closest to you.



## VIP Professional - Review

VIP is a clone of the Lotus 1-2-3 spreadsheet, which may well be the most popular business program used on the IBM PC and its clones. All spreadsheets use a matrix of columns and rows to arrange and analyse data according to relationships that you set up between the data. The power comes from the ease with which you can change numbers and view the results of the change, and get instant answers to "what if" questions. This is very useful when setting up a budget, for example. Most spreadsheets, including VIP, follow the command structure of the pioneering VisiCalc package. Learn one spreadsheet and you will find it easy to learn another. Another nice feature is that what you see on the screen is what you get on the printer.

VIP and Lotus have additional features. You can set up a database where each line is a record and each column is a field. The records can be searched, sorted, and analysed using multiple criteria. Six types of business graphs are available, such as Pie Charts, Bar and Stacked Bar graphs, and Line Graphs. Macros can be set up that execute a series of keystrokes automatically, not only saving time, but also providing the opportunity to simplify a repetitive task so that it can be delegated. By using a set of eight special commands that are only effective in a macro (called /X commands) it is possible to upgrade macros to a decision-making process. For example, there are functions that use an if-then condition, go to a location and call a subroutine, display a user-defined menu, and display a message in the control panel. This may eliminate the need to write a program, saving much elapsed time. If you are sure that you are not going to need any of these additional features, then you could choose one of the less expensive but more basic spreadsheets.

## VIP on Amiga versus Lotus on PC

I would not have bought an Amiga instead of a PC if a Lotus or equivalent spreadsheet had not been available. This choice was influenced by other advantages in the VIP/Amiga combination:

- **Cost:** VIP at \$395 was much less expensive than Lotus.
- **8192 rows instead of 2047:** This allows VIP to use the power of an Amiga with a memory expansion upgrade.
- **Keyboard Layout:** VIP takes advantage of the Amiga's ergonomically superior layout, where the arrow keys are in a separate and convenient location between the numeric keypad and the QWERTY keyboard. All keys are available at all times, unlike the time-wasting and irritating NUMLOCK feature on the PC. This would give the Amiga a significant productivity advantage when setting up a spreadsheet.
- **Mouse:** This is available to the user for most of the functions that are appropriate. These include the initial setting up from Workbench, and setting up for printing graphs. When the worksheet area appears after loading VIP, the four arrow keys are used to move horizontally or vertically around the worksheet, or after pressing /, for selection of menu items from the control panel at the top of the screen. When you are entering numbers or text, the right hand is in the general area of the arrow keys, when it would be many times faster to find and press an arrow key than find and use the mouse. For menu operations with many keystrokes such as setting up the printer, I would prefer a "mousy" interface, with the option of

automatically setting up a keyboard macro. Then the macro would do the job with two keystrokes, such as ALT P. VIP are currently studying the feasibility of a "mousy" upgrade which would be made available to registered owners.

- **Graphics printing:** VIP has a new GraphPrint program that uses the mouse, Amiga's fonts, and the option (set from Preferences) of printing your graph across the page or a larger version sideways down the page. When I used Lotus on a PC to print a graph it took an entire lunch-hour to print half a graph, so that was the first and last time I used this 'facility'! VIP prints my graphs in about three minutes on my EP-1000 printer - not lightning fast, but usable.

- **Single drive:** VIP works quite happily on a single drive Amiga, because it all fits on one disk with enough space for plenty of your worksheet files. It works even better with two drives so it can access the workbench settings when required, without swapping disks. It can also be used on a hard disk.

## Learning to use VIP

The package contains a clearly written 240 page instruction manual and an eight page supplement with the title "Read Me First Even If You Don't Want To". This really does contain some very important information on workbench settings, loading from a workbench or optionally from a CLI (if you are an experienced user and wish to gain an additional 14K of memory for a larger worksheet), and the File Directory command to acknowledge a new disk.

The first part of the manual is a 63 page tutorial during which you construct a typical household budget. One or two days work on this tutorial, depending on the amount of your previous experience with spreadsheets, should give you an overview of the program's general capabilities on the basic functions, printing, and graphics.

The second part of the manual gives you the opportunity to explore these functions in greater depth and try out some of the more advanced features, such as the financial and mathematical functions, database, graphing and keyboard macros. You can do this on your own by working through the manual as needed when creating your worksheets, and using a Help menu available by pressing the F1 key. You could consider taking an 'Advanced Lotus 1-2-3' Course at this stage if you want to get up to speed faster. Appendix B contains a list of reference books that contain a vast amount of information on how to use Lotus 1-2-3 to create worksheets for specific applications. This illustrates a major advantage of VIP - it gives you the benefit of the support for the popular Lotus 1-2-3 program.

-- Bob Laidlaw

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**Future Sound: A Digital Sound Recorder**

Minus the rhetoric, here's the overview section of the Future Sound manual:

"Future Sound is a sound digitiser for the Amiga computer. With Future Sound, you can digitise voices, sound effects and music, using up to four tracks at a time. After recording, you can change the sound to suit your particular need: speed-up or slow-down playback, reverse playback, change the volume, edit out parts and splice sections together. You control the length and quality of the sound by setting the sampling rate and the amount of available memory.

The sounds recorded by Future Sound can be incorporated into music packages or be included into your own music, game and simulation programs. Musicians will find this product invaluable for editing and arranging short music tracks. Programmers appreciative of the sound capabilities of the Amiga will welcome the ability to create their own sounds with this easy tool."

The Future Sound sound digitiser (from hereon called the FSD) is a little box (about 14cm square by 5cm high) of electronic gadgetry that plugs into the Amiga's parallel printer port. In the USA, the FSD sells for \$175, locally Maxwells sell it for \$450, or \$405 with AUG discount. (Moral: **NEVER** forget to ask for your AUG discount!)

The FSD brings the parallel printer port connector out onto its back panel so you don't lose the ability to use your printer. Unfortunately, my printer (a Gemini 10x using the printer cable I described a few issues ago) doesn't work when connected to this port, and I haven't had the time to find out why. Since you don't need the printer while the FSD is running, that's not really a problem.

So what does the FSD do for you? In simple terms, your Amiga becomes a tape recorder, able to record and playback any sound you'd care to feed into it. On the front panel, there are two input connectors, one for a microphone and another direct input from your stereo, TV or whatever, and a recording level control which adjusts the input volume. Note that the hardware portion of the FSD is only needed for sound recording, playback of sounds uses hardware built into the Amiga.

The FSD program is mouse-driven, with pull-down menus and gadgets to select the various functions. Like most Amiga programs, you don't really need the manual to use the program, and that's good because the manual isn't one of the best I've seen. Still, no-one reads manuals until they strike a problem or find something they can't understand.

Packaged with the FSD are programs and libraries that allow you to use your sounds with programs written in Basic, C or Assembler. The FSD can save sounds in a special binary format which is easy on disk space, or in IFF format for compatibility with other programs. IFF files can be in one-shot format or three-octave format, using the "8SVX" (8 bit sampled voice) standard.

The default recording rate is 10,000 samples per second, with an upper limit of 28,000 set by the Amiga hardware. The default rate is sufficient for most purposes, and results in quite good playback quality. 10,000 samples per second means that each second of recording takes up 10,000 bytes of memory, so this figure gives you a rough estimate of the disk space needed for a particular recording length sound. At the default rate, a 512k Amiga will allow

you to record approx 30 seconds of continuous audio. Higher recording rates will give you higher quality output, but take up more memory for a given recording.

For best results, it is a good idea to start recording a second or two before the desired sound starts, and finish recording a second or two after it finishes. The FSD software allows you to precisely define a start and end point, and all operations (ie playback, copying, etc) are done on the sound between these start and end points. The software also allows you to select a one-time playback, or a repeating playback for special effects.

The "Bag of Tricks" menu of FSD allows you to actually modify the data with which you are working. You can reverse the sound in memory, copy the sound or a section of the sound to another track, mix two tracks together or scale the sound to make a chosen section of a recording louder or softer.

The copy function is probably the most fun. You can change a recording so that, for instance, you can make someone appear to say something they didn't say by re-arranging their words! Using the reverse function, I've found that I sound almost Swedish when my voice is played backwards.

In conclusion, I've found the Future Sound digitiser to be lots of fun. For me, it's probably not worth the money, since I don't have a real application for it. If you would like to add sounds or sound effects to your programs, the FSD is the best digitiser for the job. None of the other similar products provide routines to allow you to use the sounds with your own programs.

Now for the best part of the review: The Amiga Users Group has purchased a Future Sound digitiser to loan out to members. For \$10, you can borrow the Future Sound digitiser for 14 days. The beauty of this is that if you find the digitiser to be something you can't live without, then you can buy your own, but if you just want to play with it then you don't have to pay a lot of money.

To borrow the FSD, you'll have to show your AUG membership card and another form of identification (like a licence or credit card). At the end of your two week loan period, you have to return the FSD to the AUG committee member who lives nearest to you, who will then test the unit to make sure it doesn't need repair. The next person on the waiting list will then be able to pick up the digitiser from the committee member at his home, or at the next AUG meeting if the dates work out that way. The FSD **MUST** be borrowed and returned **ON TIME** or other people on the list will be disadvantaged.

In the future, the Amiga Users Group may be able to buy other equipment to loan out. High on the list of possible equipment is a Digi-View video digitiser and camera. First, however, we'll have to see how well the FSD project goes.

**IMPORTANT!**

**Change of meeting date  
 November meeting is on  
 Sunday the 16th, not the 9th  
 due to a prior booking**

### Creating a Printer driver

So, you want to create an Amiga printer driver. You get yourself a Rom Kernel Manual (RKM). You turn to Appendix I, find the Epson X-80 series driver source code, and spend 3 or 4 hours typing it in. You assemble the init.asm and printertag.asm files, and get an error. Hmm. Turn back to the start of Appendix I, and enter the Macros.i file. Then you re-assemble the .asm files, without errors.

Then, you compile data.c, dpspecial.c and render.c, and the screen fills with errors caused by the typos you've made. After four or five edit/re-compile/curse-the-slowness-of-Lattice-C passes, you finally get error-free compiles.

Next, you link the files together, and get, yes, more errors. This time, its undefined labels. You spend a few days going over the source code, trying to find typos. You don't find any. You curse Commodore. Finally, you get the idea to use the Lattice object code disassembler, and find that you've got three lines of code at the start of each function that you didn't put there. You spend the next few hours pouring over the Lattice manuals and the few hundred pages of updates and errata sheets. There, in the small print, you find a mention of the -v option to LC2. You learn that Lattice adds stack checking code to the start of each function, and this code calls routines that you don't link into printer drivers. You add -v to your execute file, and re-compile. Now, you re-link, and find that pwait is still not defined.

You read all the errata and updates again, and find nothing. Then a friend gives you a disk from Commodore UK that contains RKM errata that explains that the source code for the pwait function was left out of the manual. You also find out that the order of linking the printer driver files together is very very important. So important that the driver won't work if the order is wrong. You curse Commodore again.

Finally, four weeks after starting the project, you get your first printer driver working. Well, almost. After printing out a graphics dump, you realise that the dots overlap. After much head scratching, and reading of the source code, you realise that the original program couldn't count, or didn't read the printer manual. Several more assemble/compile/link/wait-forever passes follow.

At last, it works! You now have a basis on which to build new printer drivers.

I truly hope this scenario doesn't sound familiar to you. Unfortunately, all the above is true and happened to me. This article is the definitive guide to producing a printer driver for the Amiga. I can't tell you how to write your own, nor what parts of the code to modify, but I can tell you how to get the Epson driver from Appendix I going.

First, enter the source code from the RKM, and make the following modifications:

In printertag.asm, change the YDotsInch entry from 82 to 72. This is the number of dots per inch down the paper. I can only guess at why the programmer thought it was 82. Change the PrinterName entry at the end to <New Epson> or whatever else you like. This entry does not seem to be actually used by AmigaDOS, but it's probably a good idea to make it say something sensible.

In render.c, change the line above the comment that reads: /\* select 7/72 inch line spacing \*/ from ("0331", 2) to ("033A\010", 3). The line spacing should be 8/72, not 7/72. Again, who knows why this was done.

Now, assemble the .asm files. Here's the execute file I use:

```
echo "*e[33mAssembling <file>.asm*e[m]"
Assem <file>.asm -i df0:include -c W175000 -o <file>.obj
echo "*e[33mAssembly complete*e[m]"
```

Next, compile the .c files. Again, here's my execute file:

```
if not exists <file>.c
  echo "*e[33mFile <file>.c does not exist*e[m]"
  skip END
endif
echo "*e[33mCompiling <file>.c*e[m]"
lcl -i: -oram: <file>
if not exists ram:<file>.q
  echo "*e[33mCompile failed*e[m]"
  quit 20
endif
lcl2 -v -o<file>.o ram:<file>.q
LAB END
echo "*e[33mCompile complete*e[m]"
```

Finally, link the object files to produce a printer driver. My execute file looks like this:

```
echo "*e[33mLinking printer driver*e[m]"
ALINK tag.obj+init.obj+data.o+dpspecial.o+render.o+wait.obj
LIBRARY :lib/amiga.lib TO New Epson
COPY New Epson to sys:Devs/Printers/New Epson
echo "*e[33mPrinter driver linked and copied to sys:*e[m]"
```

(Note that the line beginning with LIBRARY must be at the end of the previous line (ie the one starting with ALINK), making one long line).

My startup-sequence file also contains several entries that are important to the Lattice C execute file. Put these lines into your file:

```
stack 10000
assign lc: c:
assign i: df0:include
assign lib: df0:lib
```

The "\*e[33m" parts of the echo command lines serve to make those lines a different color so they stand out from compiler messages. The "\*e[m]" lines simply return to the normal color.

By the way, if you are using the Lattice C compiler, you'll get a huge increase in speed by using the public domain program STRIPC on all the include files. You'll even find that you can put the entire set of include files and the compiler onto a single disk after running STRIPC. Note also that I'm writing the quad file onto the ram: disk when compiling, which gets me another speed increase. I'm open to any other speed hints anyone might have! I've tried to use the public domain BLINK linker instead of ALINK, but I haven't managed to get it to work yet.

So, there you have it. Four weeks of my time handed to you in a page and a half of the newsletter. Boy, is that value!

-- Peter Jetson

### You Too Can Be An Amiga Guru! by Dave Boulton

Arrrrrrrrgh!, you snarl as the dreaded System Request box pops on to the WorkBench screen:

```
Software error - task held
Finish ALL disk activity
Select CANCEL to reset/debug
```

You snare at the computerese for a moment, and then hit the CANCEL button. The current screen is pushed down and you find yourself staring at the orange and black finality of:

**Software failure. Press left mouse button to continue.  
Guru Meditation #02010009.00009310**

Many have wondered what the cryptic digits of the Guru Meditation Number were all about. Perhaps the flashing orange box has some strange mystical hypnotic powers. On the other hand, perhaps the number is some sort of digitized mantra which allows the Yogis of Los Gatos to attain perfect enlightenment. Whatever the interpretation was, it was beyond the reach of the average user. The most that the user is ever told is 'Not enough memory' or maybe 'Software failure'.

In fact, the Guru Meditation Number (or simply 'alert number') distills a lot of information about exactly what mishap has befallen your Amiga. To those able to decipher it, the alert number tells a great deal about who did what to whom as the machine crashed. Not that there is much that can be done about the situation after the fact; the information is mainly useful to help the Software Gurus in debugging their programs or in diagnosing what caused the fatal situation. It is a kind of post-mortem report, explaining why the patient died.

But there are times when it would be valuable to the user to know precisely what happened to cause a crash. Other times, you may just be curious as to what was going on. All of the Alerts (the correct name for a Guru Meditation box) are defined in the header file called "exec/alerts" provided to software developers. What follows is an attempt at translating that information into a first order approximation of English.

Many of the error conditions that the Amiga OS detects are deeply intertwined with the various internal data structures and operating system calls. There isn't any way I can define all of the terms used without reprinting most of the ROM Kernel Manual here in the newsletter. However, if you are familiar with the basics of how the system software works, then you can figure out a great deal about why a particular program has crashed.

```
Specific error code -----+----- Task Address
                        02 01 0009 . 00009310
Subsystem number --+----- General error code
```

An alert number is divided into several parts. The section to the right of the decimal point is simply the address in RAM of the task that was running when the error occurred. This helps tell someone who is debugging a program which of the many different programs running in the Amiga caused the problem. In the example given above, the running task was at 9310 hex. In this case, that happens to mean that the error occurred in CLI process number 1. If I had been debugging a complex program which uses several tasks, this information would be useful. As it happens, all it tells me here is that the problem was in my software, not in any of the system tasks.

The left hand portion of the alert number is an encoded error number. There are several fields with different meanings:

The first two digits tell which module of the operating system reported the error (this is technically known as the 'alert object' or a Subsystem ID). In the example above, the alert object is 02, which tells me that the error was reported by the Graphics library.

Here's the source code for the file Wait.asm.

```
*****
SECTION printer
*----- Included Files -----
INCLUDE "exec/types.i"
INCLUDE "exec/ports.i"
INCLUDE "exec/devices.i"
INCLUDE "exec/io.i"
INCLUDE "devices/timer.i"
INCLUDE "macros.i"
INCLUDE "devices/prtbase.i"
*----- Imported Names -----
*----- Imported Functions -----
XREF_EXE Forbid
XREF_EXE Permit
XREF_EXE WaitIO
XREF _SysBase
XREF _PD
*----- Exported Functions -----
XDEF _PWait
*----- printer.device/PWait -----
*
* NAME
* PWait - wait for a time
*
* SYNOPSIS
* PWait(seconds, microseconds);
*
* FUNCTION
* PWait uses the timer device to wait after writes are
* complete
*-----
_PWait:
MOVEM.L A4/A6,-(A7)
MOVE.L _PD,A4
MOVE.L pd_PBothReady(A4),A0
JSR (A0)
TST.L D0
BNE.S error

LEA pd_TIOR(A4),A1
MOVE.W #TR_ADDRREQUEST,I0_COMMAND(A1)
MOVE.L 12(A7),I0TV_TIME+TV_SECS(A1)
MOVE.L 16(A7),I0TV_TIME+TV_MICRO(A1)
CLR.B I0_FLAGS(A1)
MOVE.L I0_DEVICE(A1),A6
JSR DEV_BEGINIO(A6)
LINKEXE ForBid
LEA pd_TIOR(A4),A1
LINKEXE WaitIO
LINKEXE Permit
MOVEQ #0,D0
TST.L D0
error:
MOVEM.L (A7)+,A4/A6
RTS
END
```

The first digit can be encoded in a funny way. The 'most significant bit' of this digit says whether or not this alert is a 'dead-end'; that is, does the system have a chance of recovering from the error or not. If the alert object had been given as 82 instead of 02, then the alert would be a 'dead-end'.

In practice, this is a pretty narrow distinction. By the time you have gotten to the alert box, the system is in such dire straits that the only choices left are to re-boot, or to enter the system debugger. The 'dead-end' bit could possibly cause some confusion if you aren't used to dealing with hexadecimal. If the first digit is ever greater than 7 (hexadecimal) then subtract 8 from it. Thus if the first two digits were B1, then the alert is a dead-end error reported by the Workbench (Subsystem ID code 31). (B minus 8 equals 3, for those of you without the required 16 fingers!)

The Subsystem ID codes are as follows:

Exec Library	01	Console Device	11
Graphics Library	02	GamePort Device	12
Layers Library	03	Keyboard Device	13
Intuition Library	04	TrackDisk Device	14
Math Library	05	Timer Device	15
CList Library	06	CIA Resource	20
DOS Library	07	Disk Resource	21
RAM Library	08	Misc Resource	22
Icon Library	09	BootStrap	30
Audio Device	10	Workbench	31

The next two digits specify the general type of error which has occurred. For many specialized types of errors, this field is 00, instead of one of the general error codes below. This field is often very useful, since the used can easily tell such things as out-of-memory conditions, and missing libraries or device drivers (if you have deleted files from the LIBS or DEVS directories of your boot disk). In the example given above, the general error code is 01, which means that the Graphics Library was not able to find enough free memory to allocate for some reason.

The general error codes are:

Insufficient memory	01	OpenDevice error	04
MakeLibrary error	02	OpenResource error	05
OpenLibrary error	03	I/O error	06

The last four digits of the alert number give specific information about exactly what error has occurred. The interpretation of the specific error code depends on which subsystem we are talking about. Each subsystem reuses the same values for the specific error code with different meanings. In our example, the specific error code is 0009. Since we are talking about an error in the Graphics Library, we determine that the error is called 'TextTmpRas' which means that a call to the Text() routine (trying to draw characters on the screen) ran out of memory when it tried to allocate memory for a TmpRas (temporary raster work area) data structure.

If the error had been in a different subsystem (say the Intuition Library), then the same error code of 0009 would have had a completely different interpretation (for Intuition, it would mean that the Screen Type parameter to an OpenScreen() call was not a valid type).

There is one special case in dealing with Guru Meditation Numbers. Everything we have discussed so far has to do with alerts that are detected and generated by the Amiga ROM Kernel. There is another case, which is when an alert is caused by a 68000 processor exception (or 'trap'). Whenever a CPU trap occurs (for instance, an illegal opcode is executed), the Exec will generally cause an alert. A program can intercept this trap processing, and insert its own 'trap handler' to perform some other function, but usually these traps end up causing an alert. When this happens, the left hand part of the Guru Number will be a small value. The Subsystem ID and the General Error code will both be zero. The Specific Error code will be the 'trap' number of the trap that occurred. The trap numbers are part of the 68000 chip, and are not assigned by the ROM Kernel like other error codes are.

The following is a list of all the possible CPU traps. A few of these will never show up as an alert because they are always handled by the ROM Kernel. I list all of them here for completeness (and just in case I'm wrong, and they ever do show up).

Bus Error	02	Privilege Violation	08
Address Error	03	Instruction Trace	09
Illegal Instruction	04	Line A Emulation	0A
Divide by Zero	05	Line F Emulation	0B
CHK Instruction	06	TRAP 0 ... 15	20 - 2F
TRAPV (Overflow)	07		

The following is a list of the specific error codes and a short comment about their meaning. The descriptions are a slightly edited version of the Exec/Alerts file, so they are very cryptic.

Exec Library			
ExcpVect	81000001	CPU trap vector checksum	
BaseChkSum	81000002	ExecBase checksum error	
LibChkSum	81000003	Library checksum failure	
LibMem	81000004	No memory to make library	
MemCorrupt	81000005	Corrupted free memory list	
IntrMem	81000006	No memory for interrupt servers	
Graphics Library			
CopDisplay	82010001	Copper display list, no memory	
CopInstr	82010002	Copper instruction list, no memory	
CopListOver	82000003	Copper list too long	
AruLDtFhOver	82000004	Copper intermediate list too long	
AruLDtFhOead	82010005	Copper list head, no memory	
LongFrame	82010006	Long frame, no memory	
ShortFrame	82010007	Short frame, no memory	
FloodFill	82010008	Flood fill, no memory	
TextTempRas	82010009	Text, no memory for TmpRas	
BitBitMap	8201000A	BitBitMap, no memory	
Intuition Library			
GadgetType	84000001	Unknown gadget type	
CreatePort	84010002	Create port, no memory	
ItemAlloc	84010003	Item plane alloc, no memory	
SubAlloc	84010004	Sub alloc, no memory	
PlaneAlloc	84010005	Plane alloc, no memory	
ItemBoxTop	84000006	Item box top < RelZero	
OpenScreen	84010007	Open screen, no memory	
OpenScrnRast	84010008	OpenScreen's AllocRact, no memory	
SysScrnType	84000009	Open sys screen, unknown type	
AddSWGadget	8401000A	Add SW gadgets, no memory	
OpenWindow	8401000B	Open window, no memory	
BadState	8400000C	Bad state return entering Int.	
BadMessage	8400000D	Bad message received by IDCMP	
WeirdEcho	8400000E	Weird echo causing problem	
NoConsole	8400000F	Couldn't open Console device	
DOS Library			
StartMem	07010001	No memory at startup	
EndTask	07000002	EndTask didn't	
QPKtFail	07000003	Qpkt failure	
AsyncPkt	07000004	Unexpected packet received	
FreeVec	07000005	FreeVec failed	
DiskBlkSeq	07000006	Disk block sequence error	
BitMap	07000007	BitMap corrupt	
KeyFree	07000008	Key already free	
BadChkSum	07000009	Invalid checksum	
DiskError	0700000A	Disk Error	
KeyRange	0700000B	Key out of range	
BadOverlay	0700000C	Bad Overlay	
TrackDisk Device			
TDCalibSeek	14000001	Calibrate: Seek error	
TDDelay	14000002	Delay: Error on timer wait	
Timer Device			
TMBadReq	15000001	Bad request	
Disk Resource			
DRHasDisk	21000001	Get unit: already has disk	
DRIntNoAct	21000002	Interrupt: no active unit	
BootStrap			
BootError	30000001	Boot code returned an error	

### My View by Paul A. Radford Jr.

"ONLY 512k of memory!!! The ATARI has 1 meg", says the customer behind the counter. "Oh," says I, "and how many programs can it run?" "It has lots of software, from games to languages, too!" (Boy am I enjoying this!!!) "No, I mean how many programs can it run at the same time." "What do you mean?", snarls the customer. "Only one of course!". "Ever heard of Multi-tasking?" I say. "Yeah, but only the big boys use that on mainframes". "Not anymore", I say, pointing to the AMIGA sitting on the front desk."

And so it goes; the AMIGA has now been with us for some six months. As I sit back in my lounge chair typing this article and listening to Musicraft at the same time (You may as well be entertained while you work), I still wonder at all I have seen and where we are going.

Working in the environment that I do, I see and meet people from all areas of the computing fraternity. Never have I seen a machine that has captured peoples interest and imagination as much as the AMIGA has. Just about every person that comes to the shop stops to look at the Amiga. Some make comments, some even bad (perhaps even out of jealousy). The most difficult thing is to try and remain un-biased through all of this. It is very easy to become unpopular with non-AMIGA owners. (But I just can't help teasing a little bit!)

I had heard about the AMIGA from Kim Hamilton of CBM at the PC show in Melbourne about 2 and half years ago and have been hooked since then. It has been a long wait to finally see the AMIGA, but well worth it. Finally we have a machine that does justice to those famous words "personal computer". Everything about the AMIGA is truly amazing, including its software, much of which is really personal productivity software, for example the Deluxe series.

I am constantly amazed at the power this machine packs into a desktop micro. For example, we have a modem in the shop, and recently we were communicating with RMIT's CYBER mainframe. We were in the process of doing some file transfers for a customer who is a student there. While a file was being transferred, we were able to peep into a directory and get ready while waiting for the transfer to finish. As you can guess, this proved to be a very popular demo as the size of the audience quickly grew. Another demo we run is Musicraft and Slideshow at the same time (try it on your friends, they'll love it). This obviously requires a large amount of free memory and one must be choosy which score you play so as not to let the old guru start meditating. Most embarrassing in the shop! However this is a fine illustration of the power and potential of the Amiga.

Finally, don't let anyone give you that BUNK that "the AMIGA is nice at graphics, but no good for business". I simply refuse to believe this! It is only a matter of time before the business software base for the AMIGA will be developed. How many of us would like to be able to do more than one thing at a time? EVERYONE! In business, Time is Money and Money is everything. The Multi-tasking Features of this machine should be a boon for businessmen. What could be better than being able to print out a spreadsheet and database report, while typing up a report with a word processor. I feel that 68000 based machines are here to stay. This is quite evident as they are the mainstay for many UNIX based machines and are being used in many large Universities and Technical colleges.

Well, now the ball is in our court. We are the ones who will make the AMIGA succeed by spreading our enthusiasm about this fabulous machine. I don't profess to know all the ins and outs of the computer industry, but I know which horse I'm going to back in the "Personal Computer" market. Better go into the other CLI and change songs now, this ones getting boring..... Life's a bugger isn't it? See you all at the meeting.

-- Paul Radford

(This article in no way represents the views of my employer, Technical Book Co, they are solely my own thoughts.)

### Public Domain Update

You may have noticed that the current set of Public Domain disks are very C and assembler oriented. This is largely due to the contributors, the sources from which the programs are gathered, and the personal preferences of Fred Fish, the person who puts the collection together.

We've long been aware that Basic programmers have been left out in the cold, so to speak. We've searched the earth high and low for another public domain source, and at last we've found one. By the time you've read this, we'll have sent away huge amounts of money for these other disks, but since airmail takes about 4 weeks or so, we probably won't have the disks in time for the next meeting.

## AMIGA Dealers:

Why not advertise in

### AMIGA WORKBENCH

An advert this size costs only

**\$20**

(from camera-ready artwork)

Other sizes are available:

Half Page: **\$40**

Full Page: **\$70**

Double page: **\$120**

AMIGA Users Group  
PO Box 109, North Balwyn, 3104

**Amiga Users Group Library**

One of the most rapidly growing sections of the Amiga Users Group is our Library, which now contains many books, magazines and newsletters. Here's a brief summary of the latest items:

**AmigaWorld magazine, November/December issue**

Probably the best issue of AmigaWorld so far. It contains a comparison of color printers, a list of hundreds of software titles, a comparison of the Lattice and Aztec C compilers and the 1986 AmigaWorld Editors Choice Awards.

**Amiga Project (now Ami Project), Vol 1, No 1**

Our subscription to this mag, unfortunately started with issue 4, but we are trying hard to locate all the back issues. Here's the premiere issue, and it contains a review of Mountain View Press Forth, a brief survey on Modula-2, a series on the C language, and an article on file transfer.

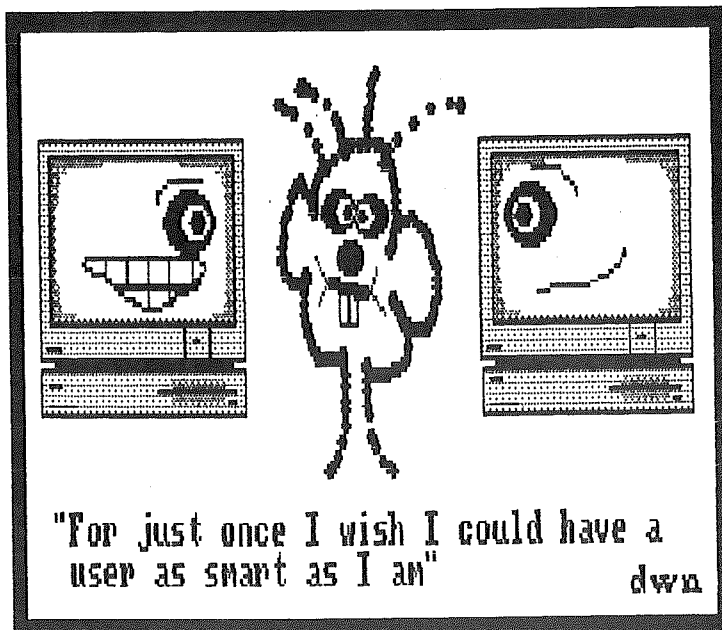
**The Amiga Apprentice and Journeyman, issue 4**

This magazine/newsletter is one of the best I've ever seen, full of software & hardware reviews and informed opinion. This issue contains lots of info about memory expansions and hard disk drives, as well as reviews of Digi-View, Marble Madness, True Basic, UCSD Pascal and many others. A comparison of Mirror and Marauder is also featured.

The library should soon start to get copies of Kickstart, a developer's magazine from the UK. We are constantly on the lookout for magazines and newsletters slanted towards the Amiga, so be sure to tell us about anything you might hear about. All AUG magazine subscriptions are currently via airmail.

We've just received the disk for the book Advanced Amiga Basic. The disk, which contains the source code for all the programs in the book, is available to borrowers of the book ONLY, and we have to respect copyright.

Hopefully, we will have a complete list of books and magazines available from AUG in the next newsletter.



**Membership Monologue**

By the time you read this we should have over two hundred and sixty members (260+). The first memberships are listed as April 1986 so over seven months we have averaged thirty-seven new members a month.

Over the last month I have spoken to several members who wish to contact other members in their local area with a wish to start satellite groups or just get together to share information. My advise has been to send in a short article to the Editor, Peter Jetson, stating what you wish to achieve, give a contact phone number (and preferred hours to call) so interested members can get in touch.

With that said the following announcement is on behalf of Bruce Archer who lives in West Geelong and wants to contact any Amiga owners in the Geelong area.

Contact: Bruce Archer  
 Geographic area: Geelong & surrounds  
 Phone (Geelong): (052) 223 546 (Home)  
 Phone (Melbourne): (03) 255 111

Bruce has a meeting place available for up to twenty people I believe. Corrections to the above information will be gratefully printed. Sorry this wasn't in the previous newsletter but I missed the deadline. Are those phone numbers correct?

**An Amiga Users Group Bulletin Board**

Interested in the idea? It seems that lots of other AUG members certainly are! In the near future, the Amiga Users Group may well take the plunge and set up a dial-up system, but we need to know what sort of services and facilities we should be providing.

If you've got a modem, and have used a few bulletin board systems, you've probably got a few pet hates and likes about current systems. Maybe you've got some ideas about better (or different) ways to do things. If so, then we'd like to hear from you.

Unless we can get some very good deals on the hardware needed for the BBS, we won't be able to afford a hard disk from day one. This will mean that we can't put much public domain software online for downloading right away. I'd like to see the system support 300, 1200/75, 1200 and 2400 baud operation, but cost constraints may force us to stick to 300 baud for a start.

For a variety of reasons, we will probably use an IBM PC clone for the BBS. With a PC clone, we should be able to get a running system for around \$1500. Obviously, it would be good from an image point of view to use an Amiga, but that would up the cost to about \$3000. Donations of, or discounts on suitable equipment will be graciously accepted!

**Remember:**  
 The meeting is on the  
 16th, not the 9th  
 of November

**Editor's View**

With the success of our first meeting in the new lecture theatre, we've decided to drop the old rooms completely. Hopefully, we'll be able to get a few more tables to set up in the foyer area to put machines on at the November meeting. At my count, we had about 140 people at the October meeting- no way we'd fit that many into the old rooms.

Unfortunately, there is a recital on in Lecture theatre 1 on our normal meeting day this month. The College thinks that we'll make too much noise (probably right!), so we've had to move the meeting forward a week to the 16th. This newsletter will be sent out at the normal time so that you get plenty of warning. Don't forget to tell any of your friends who haven't yet joined the group about the date change.

Have you placed your order for your Amiga Users Group windcheater yet? Only \$25 buys you a quality white fleecy lined windcheater with a colour Amiga logo screen-printed above the left breast. We should have some in common sizes available at the November meeting, but normally you would need to order them in advance. T-Shirts are also available, the price has yet to be confirmed, but expect around \$9.

For the November meeting, Ron Wail should be showing a locally designed hard-disk drive for the Amiga, and I'll give a brief demonstration of the Future Sound audio digitiser.

Please write about your Amiga experiences for the newsletter. If you've purchased a program, write a review for us. If the program is bad, warn other people off it. Great programs deserve more publicity, so write about them too. Tell us what you are doing with your machine. Maybe you've got an idea for a product for the Amiga. There are quite a number of developers reading our newsletter, perhaps they can turn your idea into a product.

Well, that's it for this month, all I've got to do now is find a picture for the front of the newsletter. This editorial is designed to fill the last third of a page on the inside back cover. All the rest of the newsletter is pasted up, and tomorrow morning it all goes off to the printer.

-- Peter Jetson

SOFTWARE ORDER FORM									
Disk numbers :									
Disks supplied by Amiga User Group @ \$10								\$	
Disks supplied by member @ \$2								\$	
<i>Club Use Only</i>									
Receipt #:				Mailed on: / /			Total \$		
Mail to: Amiga Users' Group, P.O. Box 109, North Balwyn, 3104.									
Member's Name:									
Address:									

**Application for membership of The Amiga Users Group**

Membership is \$20 per year. Make cheques payable to The Amiga Users Group, and send to:

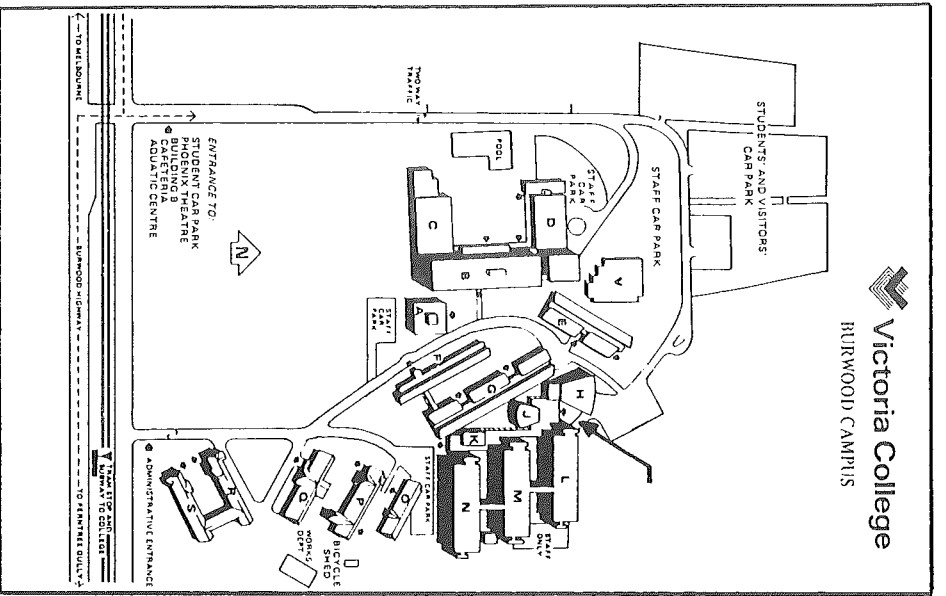
**Amiga Users Group, PO Box 109, North Balwyn, 3104**

Details this side are optional

Surname: \_\_\_\_\_  
 First name: \_\_\_\_\_ (no initials)  
 Address: \_\_\_\_\_  
 \_\_\_\_\_ Postcode: \_\_\_\_\_  
 Where did you hear about AUG: \_\_\_\_\_  
 How can AUG help you: \_\_\_\_\_  
 \_\_\_\_\_  
 Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Phone number: \_\_\_\_\_ STD code: \_\_\_\_\_  
 Year of birth: \_\_\_\_\_  
 Occupation: \_\_\_\_\_  
 Interests: \_\_\_\_\_  
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 Are you happy with your dealer: \_\_\_\_\_

In the event of my admission as a member, I agree to abide by the rules of the Association for the time being in force.



**Victoria College**  
BURWOOD CAMPUS

**Where is Victoria College Burwood Campus?**


New members and visitors sometimes have trouble locating our meeting place the first time. Victoria College is on the North side of Burwood Highway, Burwood, just East of Elgar Road. Coming from the City, turn left at the first set of traffic lights after Elgar Road. Follow the road around past the football oval, over three or four traffic bumps to the car parking areas near the netball courts. Further up the road, to the left, you'll find Lecture Theatre 2. That's us!

If you have a Melways, try Map 61 B5.

*November 1986 Amiga Workbench*

P.O. Box 109, North Balwyn, Victoria, Australia, 3104

**AMIGA™ Users Group**

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PO Box 109, North Balwyn, 3104  
Victoria, Australia