




ED I T ORIAL
BBS 201-298-0161
 Intevert it his cret binty tiken tive for we to get a round to vorking on this hugust issue. Nevertheless, here I ait, hard st yort the day befort the printer gets, the copy, is Toted by our Piesident, for fielt, in his uticlew perhaps the apthy blues hive hit waiy of us
 pirticipation.
it last, by dint of the fatt of ouf finacial investent into things winit in wouk the heed for continued support oi suphacturerst deviopirs and tealerst inf we decty iny dianition of that. Wh, in a nicrocesilic pirallet, win see the sime thing in our user group, The Jace is onfy as good as the support: thit it getf. Sustainimg metaership (and fith fectiving that 1 and any fief to th one of the best ATARI Heviutiors prodicer on if pinthly basis by ane user grouply attending ind enriclPhilif it metingt, supporting the inviefter, supportiof oif advertisers - ill of this sitentin to the IAce villbing.
for Mysili. I eijoy viting, I etioy dee-ing of the
 joind tie ther) it and of thereelvety ind 1 imjoy supporting thel and Afift rlated things. that 1 tont
 not herf, hever or hitily ever here, but piwe mas as mach "s you cint phlosighty. Every ont of us hin wowthing to
 to dind-ththevool specinist. The ulce is not sitily a wans to off 1 oud your surplis Amikt goodsy 1 supplier of * Tonthly limitier, in entertaining and informitie

 in be wht yot shi, but viltout interctivisy ind
 Suptert ine ficst:


IN THIB TESVE:

Snipshot - II. Van lost, IT. $\qquad$
Fron the D.aktop $=$ L. Peckhar. $\qquad$



2218 Baker Street -5 , Bodiu. wivert wit:


fopyright VIolition t R Kovest, Wistivitit


lit the sucs - 6. bor fhiww......... Nivis


MARK YOUR EALENDAR If:
JACE
Meeting Schedule
EEPTEMAER 12 , 1987

# ATARI 

POWER WITHOUT THE PRICE

# COMPUTER SYSTEMS 

68000 PROCESSOR - 8MHZ CLOCK - MIDI INTERFACE
SERIAL \& PARALLEL PORTS - TOS OPERATING SYSTEM WITH GEM - $640 \times 400$ MONO RES - 512 COLORS

WITH SYSTEM PURCHASEBASIC LANGUAGE

## MONO SYSTEM ${ }^{\text {4 }} 49995$

## COLOR SYSTEM ${ }^{\text {s } 69995}$

SYSTEM CONSISTS OF: 520ST CPU WITH MOUSE, SF354 SS, DD DISK DRIVE \& SM124 MONO MONITOR OR SC1224 COLOR MONITOR


## 1040ST

1.024 MEG RAM WITH MOUSE CONTROLLER \& BUILT-IN DS, DD 3.5" DISK DRIVE

| SHD204 20 MEG HARD DRIVE | 574.95 |
| :---: | :---: |
| SF354 SS, DD DISK DRIVE | 149.95 |
| SF314 DS, DD DISK DRIVE | 209.95 |
| SM124 MONO MONITOR | 159.95 |
| SC1224 COLOR MONITOR | 319.95 |
| SMM804 DM PRINTER w/cable | 189.95 |
| SX212 300/1200 MODEM | 89.95 | ENTERPRISES

$$
574.95
$$

\$69.95


MONO SYSTEM
COLOR SYSTEM ${ }^{89995}$
SYSTEM CONSISTS OF:
1040ST CPU WITH BUILT-IN DS, DD DISK DRIVE \& MOUSE SM124 MONO MONITOR OR SC1224 COLOR MONITOR

$$
\begin{aligned}
& \text { SHD204 } 20 \text { MEG HARD DRIVE } \\
& \text { SF354 SS, DD DISK DRIVE .... } \\
& \text { SF314 DS, DD DISK DRIVE .... } \\
& \text { SM124 MONO MONITOR ..... } \\
& \text { SC1224 COLOR MONITOR } \\
& \text { SMM804 DM PRINTER w/cabl } \\
& \text { SX212 300/1200 MODEM ..... } \\
& \text { SUBSTITUTE SF314 FOR SF354 } \\
& \text { IN } 520 \text { ST PACKAGE - ADD }
\end{aligned}
$$

SF354 SS, DD DISK DRIVE ........... 149.95
SF314 DS, DD DISK DRIVE ........... 209.95
SM124 MONO MONITOR ............ 159.95
SC1224 COLOR MONITOR ......... 319.95
SMM804 DM PRINTER w/cable .... 189.95
SX212 300/1200 MODEM ............. 89.95


86 RIDGEDALE AVENUE CEDAR KNOLLS, NJ 07927 267- 0988

Doug Van Hook - Jack
With an overuhelaing response to the disk library's proqran "DAISY DOTS", I thought ve could reviey another utility progran called "FOMT MASTER." FONT MASTER vill run on any B-bit Atari with at least 48K.

Font Master uas uritten in ACTION by Mike Fulton, of Cypress, California. In the documentation he does offer to provide continued support for the progral and requests a sall donation.

This superb progran yas designed to print out files, Atarivriter included, in any of 28 styles of font. it vill also print all of the graphic characters. Another honus is the ability to print SYMCALC Spreadsheets sideways using ANY of the available character sets. FONT RASTER provides 28 different Character Sets to choose fron, and prints at either 960 dots per line; or at 1920 dots per line.

To use the progran I simply (A)loaded it, (B)asked for a directory, (C)loaded the font called CURSIVE, and (0)printed the file called REABME.BOC. what could te easier than that?

The author claised that the fonts could be used with other programs, so I imediately loaded TYPESETTER and successfully loaded all but one of the character sets to the sereen. 27 out of 28 ain't bad!

One of the fonts, TRAlN.fNT, will replace selected sharacters in your text with tiny railroad vehicles. It is up to you to BECDDE the aissing characters by each vord's use in the sentence. Dave Noyes should try printing a fey articles this way.

Hove over DAISY DOTS, I think we've got you now. Here are the nenu selections for FBNT MASTER;

```
1-Print Text File
2-Line Hidth (Characters per line)
3-Losd Character Set
4-Change Character Set
5 - Top/Bot&on Margins
S-Sidevays Syncalc Print
1- Dots per line (Printer Resolution)
P - Change Printer (Epson FX/Geaini)
H - Disk Directory
q-quit Progran
```

Font haster is available for $\$ 3.00$ this conth as our disk-of-the-month. To order by mail contact:

Bret Callegari
306 Division St. Floor 2
Beonton, NJ 07005
$\begin{array}{lllllll}S & N & A & P & S & H & O \\ S & T & P & S & H & O & T \\ S & N & A & P & S & H & O\end{array}$
M. Van Oost, Jr, - JACG

Mow that I have your attention, I want to tell you about the greatest printer, picture dump progran that I have ever come across. It was uritten by Richard $Q$. Fox for Joy fox Productions. If you are in to collecting picture files, anything by Joy fox is right up there on top of your collecting list. If you oun an okinate 10 , Epson or Epson compatible printer (works super great with a Star Micronics $58-10$ or $N X-10$ ), then this is the grinter duap progran for you.

SNAPSHOT has five main features:

1) 50 colors on the Okinate 10 , and true grey scale on Epson and Epson compatibles.
2) Picture translation fron one mode to another.
3) Change colors for printout purposes using joystick or touch tablet.
4) Print in normal or double density on Epson or Epson compatible printers (56-10 \& $N X-10$ ).
5) Sone DOS file functions.

SNAPSHOT vill load, translate and print pictures from Computereyes; Fun With Art, Graphics Master, Nicro lllustrator, Micpo Painter and Versduriter. It runs under Basic and the author states *...uritten in Assembly and glued together with BASIC."

You vill like the easy to use genu, which gives you a choice of seven options. They are File Directory, Load, Gave, Delete File, Change Color, Translate, and Printout. I particularly liked the menu overlay tecnique used, which I'll let you discover for yourself.

If you have Computereyes or collect Graphics 9 (16 shade) picture5, High contrast graphics 7.5 picture, Lou contrast 7.5 pictures, Nornal graphics 8 pictures, 4 shade or 8 shade graphics 8 pictures you will be anazed at the true screen to printer copy.

About the oniy other thing I can say in praise of SuMSHor is: that you see on the screen, is what you get on the paper. So what are you vaiting for? Hurry out and buy a copy of SMAPSHOT!
for further information on this progran, contact:
Joy Fox Productions
1364 Campbell St.
Orlando, FL 32906

# FROM THE DESKTOP 

by Linda Peckham 917A．Preakness Avenue

Wayne，NJ 07470

0opst My apologies to anyone who read last month＇s column，and then discovered that Charlic had not received the clip－art disk．I had intended to wait until the and of June to send them，so as to have as many files as possible．Unfortunately， between overtime and vacation，I forgotd I will make sure I get them out for this meeting．There may in fact be two disks ．－one full of clip－art（all hi－res），and the other with clip－art，a new Times font，and several other files．All of it is downloaded from Genie and Compuserve．I＇ve yet to start making any of my own clip－art， mostly because I am waiting for the scanner！

## Fonts Overfowing

They＇re herel！Gemini had a disk of three fonts for sale from SoftLogik around the end of Jane，and then the Font Factory disis arrived So now there are more fonts than can be loaded in at once．In fact，I can＇t even give you samples of all of them in one newsletter．But I＇ll give you what I have room for．Here goes．．．．

COURIER－ABCDEFGHKJ KLMNOPQRSTUVWXYZ abcde fghijklmnopqurstuvwxyz 0123456789 ！＠\＃\＄\％＾を＊（）－ ＿＋｀～＂；$/$ ？
callsgrapag－abcoffatad k（MHOPGRSIUVWXY？abcde fghijkimnopqursłuvu xyz\＆）23456


AVANTGARDE－ABCDE FGHKJKLMNOPQRSTU VWXYZabcdefghijkimnopqu rstuvwxy2012345678919\＃\＄\％ へ\＆＂（）－＝＿＋～～＂：：／？

DEvOLf－ABCDEFGHKg x LA NOSPQRSコuVWXYIa GesfghijRLn nopquratuverxyzoiz34


THAMES－ABCDEFGHXI KLMNOPQRSTUVWXYZ abede fshijklmnopqurstuvwxys01234


SPOKANE－ABCDEFGHIJKLMN OPORSIUVWXYZAbCdefGHIjkL mпорQRstuvwxyzol234567891e


TIMES－ABCDEFGHIJKLMNO PQRSTUVWXYZabcdefghijkl mnopqrstuvwxyz0123456789！ （1）\＃\＄\％＾\＆＊O－$=+{ }^{\prime} \sim^{\prime \prime \prime} ;: / ?$

All of the above fonts are printed at 12 points，and the text is 10 －point Times Note that Devoll has only the ＇line＇font，as oppesed to the others which have both＇line＇and＇filled＂ forts．Most dot－matrix printer fonts come with these two versions．Why？ So that dot－matrix printers，which have markedly less resolution than any laser printer，can legibly print small print．Those of you who bought 1.00 of Publishing Partner may remember that the small print on the sample file was zearly illegible，when printed．That changed with 1.01 ．The text of last month＇s columin was printed with the＇line＇ version of Columbia．The cat－off for switching from one type of font to the other is set at 13 －points for most fonts．The text wat printed at 9 ．
But，you say，that text wasn＇t as legible as it could have been（even allowing for the lousy job the printer did．）So，how to correct that7 By
changing the＂fill－point＂．．．

## The Font Edltor

1 haven＇t had any opportanity to try out the editor but changing the fill point is easy．Load the font editor，then pall down the file menu， and load the font．Under the edit menn，seiect the＂change cusoff point． A display box will pop up，with the smallest fill size，and the smallest ＂thin bold＂．Change these values to whatever will work best for your prizter，then save the font．And that should be it．（Of course，to do this， you mist have a monochrome monitor．If you don＇t，and you need the points changed，send me a disk， and I can probably change them for you．）The default is set up for the 9－pin printers．I haven＇t experimented much yet，but，for the moment，I＇m changing most of my cutoff points to four points smaller than the original，for the Epson LQ－1000．

## Font Limitations

According to what I have been reading on Genie，the increasing number of available fonts is uncovering some new bugs in Pablishing Partres．If you attempt to delete any font bnt the last one， garbage appears in the font display， and the system may crash．What the limit on the number of fonts loaded is，I＇m not sure－－at the moment， I＇ve sever fonts in，plas the two system fonts．Since there are some problems in this area，it＇s probably smart to follow two rates of thamb：


The is one of the mages trom font foctor Cilo Art Disk w，prinfed at $100 \%$

## FROM THE DESKTOP (cont.)

1) Make sure the Configuration file only loads in those fonts you want for, every document (click the font selection right after loading to see what is there. If there are extra fonts, delete them, then save the Configuration)
2) Try and determine which fouste you want to neto bofore atarting the document, then load only those.

## Shading the Picture

Last month, I mentioned that the hi-res pictures were apparently imported to Prblishing Partner at 75 dots per inch. However, in response to my query, posted on Genie, Mr. Kazmeier said that the pictures were imported at 77 dpi. Ouch! What that resolution means, is that it will be difficult to get good output with shaded clip-art at any size or on any printer (except maybe the $1000 \mathrm{dpi}+$ big printers used by professional printers). A picture is sized in Prblisting Partrer by a percentage. Now try multiplying 77 by any percentage between 1 and a 100 (no fractions). There is no size at which 77 dots can be evenly printed out by either a 300 dpi (most low-end laser printers) or 180 dpi ( 24 - pin printers)

Conclasion? Avoid areas of fill patterns if possible, play around with sizing to discover which gives the best results on a printer, and hope that Version 2 will allow sizing by dots per inchl (I pat the suggestion on Genie.)


1558, HANEY E. EISENHMT

## Personal Publishing

If you're looking for information on desktop poblishing in general, the Personal Poblishing magazine may be a good place to start. It is one of two magazines on this subject that I know of. I prefer it over Pablish! for several reasons, It seems geared more to the average user, and is printed on a 300 dpi printer, so as to give the reader a better idea what can be accomplished on equipment most likely to be available. Most importantly, for us Atari owners, the editors state their intention to be open to products for all machines, rather than a seemingly exclusive focus on Macintosh and IBM. In the two issues I've read so far, there hasn't been an article directly concerning the ST, but there have been two ads to sell ST systems! So this is the magazine I recommend. In particalar, the July magazine (if you can still find it), is filled with information usable to any would-be d.p. user.

## A Piace to Pint

As I have time, I hope to look for printers in the area that can accept Postscript files over a modem for printout on laser printers. There is at least one piace -- if you can afford it. Typeline, in Teaneck, advertises in Personal Publishing, and I received some information from them several days ago. They charge $\$ 8.00$ for $8.5 \times 11$, and $\$ 11.00$ for a page larger than that, up to 11x17. Files can be uploaded at 1200 baud using Xmodem. (There is no charge for the uploading itself.) The file is outpat on a Laser Setter as 1270 dpi The finished product can be picked up at the facility, or mailed for an extra charge. If anyone is interested in more information, you call call Typeline at 837-9839. And I will try and have some copies of the information available at the meeting.

A Place to End
Version 2 may be out by fall. As of the last message from Deron Karmeier, he hopes to have the new version out by the end of September.
As of the end of June, he had coded the foilowing:

- malciple windows
- $n 0$ redraws when selecting objects or changing modes in the toolbox
- moveable toolbox
- select multiple objects

The new version of the Postscript driver was, as of early July, so full of bugs as to make the author's 'head swim'. So, if you're planning on trying Postscript aploads to other machines, stick with Helvetica, Times and Courier .- these fonss appear to be available on most PS printers.

Anyone planning on buying the Atari laser printer, slated to be ont any month now?

See you in September!


This is trom Disney_2 TNY. a po clip-art tio. printed at $83 \%$ you may be able to notice a striped etfect in the background. caused by thaty to print the pieture at about 93.9 aors per inch with a 180 api printer. The image to the lett is taken form a senes of trademark kles. The mages were scamed isung Comphtereyes.

C Fram Fas =rid Eajic
by Denald Farbes - JACG
You just bought a new ST, and are looking at the $C$ compiler. Hut how do you translate all your Pascal and Basic prograns into C?

Why would you mant to translate your programs from one language to another? There are three good reasons.

The first one is maintainability. A pregran witten in an unstructured language like BASIC is difficult to asintain or enhance.

The secand is speed and efficiency. $C$ is an efficient language. C was invented and first iapleaented by Demis Rítchie fifteen years ago on a DEC PDP-1I that used the UNIX operating systea. Framewark and dBASE III were written in C. in fact, ATti's UAII operating systes mas written in C. C gives you access to the bits and bytes, and to menory addresses via pointers. In short, $C$ is a systems progranaer>'s language.

The third reason is practicality, You say see useful prograns mitten in another languge, but want to create your awn version and use your om compiler.

BASIC and Pascal are two completely opposite languages. Pascal is strurtured and siailar to $C$. EASIC is unstructured and has virtually no siailarities ta $C$.

PASCRLTOC
The sinilarities between Pascal and $C$ sake it possible to wite a computer progras (in $C$, of course) to do many one-to-one translations. Then sose siaple editing of the output ay give you a finished product. If you mant such a progras, you will find it on page 272 of Advanced C by Herbert Schildt (Osborne Hcfiraw-4ill 1986 p. 3435201.

With this translator progras, you can input a Pascal program like this:
progras test (input, output);
procedure ton (x: integer);
begin writaln(x+2); end;
function ken (x: real): real;
begin if wion writeln('w is 100 inside ken $^{*}$ );
ken: $=\mathbf{w} / 3.1415$; end;
begin witeln('hello there');
ton(25); witeln(ken(101);
end.

The translator will then give you this pseudo-6 output:

```
test ( input , output) ;
ton (y: int);
{printf {: & 2);};
ken (m: flact): float;
{ if m= 100 printf ('m is 100 inside ken ');
ken = m/ 3.1415; };
{ printf (' hello there'|;
tow (25);
printf {ken (10)};}
```

The reason the progran works at all is that fascal and $C$ have sinilarities such as the ase of control structures and stand-alone subroutines yith local variables. This way you can do wany one-to-one translations.

Pascal and C have three major differences.
Pascal is more restrictive and liaited. You do not write systen cede in Pascal because memory addrosses cannot be loaded into pointers, as in C. Pascal does not perfors type conversions for you.

Pascal is formally block strustured fyou create logically connected units of code that are referenced together) but C is not. Pascal lets you create procedures that have other procedures nested inside then. © dees not let you define a function inside another function.

The second differgnce deals with forward references. In Pascal you aust deciare all your variables, functions and procedures before you use them. In $C$ you must declare all your varianles before you use then, but forvard references to functions are used all the tise.

The third difference is that Pascai does not let you do separate compilations. On the other hand,

## separate compilation is $C^{\prime} 5$ strong point.

Pascal has any keywords, but C has only 32 . Sone (like else, for, goto, if, and while) are the sate. Sone are siailar, such as begin $\frac{1}{}\{$, end $\&\}$, case $\&$ suitch, not $:!$, or and $1!$, and repeat in de. In snate cases $\mathbb{C}$ uses operators where Pascal uses keywords.

Host prograns are built around control loops. Pascal has three of then: for, while, and repeat-until. C has eatching copies.

A Flar loop in Pascal lite this
wald look like this in C:


This Pascal MHILE loop
while $z<5$ do begin witeln $(x)$ iread $(x)$;end;
wald look like this in $C$ :

This Pascal REPEAT loop
repeat read $(x)$ in iteln(x); until n)5;
sould look like this in C:

You should be amare that Pascal and $C$ both acress disk files differently, so you will have to hand code that part of the procass.

The Pascal-to- transiation progran vill save you a lot of typing, but you mill still have to edit the output a line at a tige before you input the text to your C campiler.

BASIC TOC
BASIC to $C$ is another story. You will end up rewriting the progras in $C$ using the BASIC version as a guide.

In the first place, BASIC is not a structured language. It does not have a complete set of contral structures. It does not have stand-albne subroutines with local variables. You have know both BASIC and $C$ to get the jot done.

Here is how a BASIC loop

10 FOR $\mathrm{I}=1$ TO 100
20 PRIMT I
30 MEXT
mould appear in C:

This BASIC luop, in which the control variable conid be modified,

10 FBR COART:10 TB 0 SIEP -1
20 INPTI A
30 PRINT AxCOHRT
40 IF $4=100$ Ther Cunit $=0$
50 HEXT
mould look like this in C:
for (count=10i count $70 ;$-count) \{

if ( $a==100$ ) breat; )

This DASIC loop executes at least once
$105=5+1$
20 合 $5 / \mathcal{S} .145$
30 PRIIT a ;
40 IF 5 <100 IH2N 607010
and thus requires a do/mile construct in C.


```
mbilefs(100);
```

This loop with an initial loop test
$10 \mathrm{~A}=1$
20 IF A>100 THEN 50TO 90
30 PRIMT A
40 INPUT B
$50 \mathrm{~A}=\mathrm{A}+\mathrm{A}$
60607020
80 PRINT "DOME*
requires this code in C:
$\mathrm{d}=1$;



When you convert an if/then/else statament from BASIC then you juap if the IF is true.

12 IF TiN0 THER GOTO 50
$15 \mathrm{Y}=\mathrm{H}$
$14 \mathrm{~T}=10$
15 IAPUI A\$

50 RED RESUKE DISK READS

In $C$, you don't.
if $f(t)=100)\{y=w ; t=10 ;$ ģets (aj; $\}$
/a resume disk reads if

Your gasus roukines in EASIC
$10 \mathrm{~A}=10$
$208=20$
30 EDSu8 100
40 Print A.B
$50 \mathrm{C}=20$
$60 \mathrm{D}=30$
3060508200

80 PRINT CgD
90 END
$100 \mathrm{~A}=\mathrm{A}+\mathrm{B}$
$110 \mathrm{~B}=\mathrm{A} / \mathrm{B}$
120 RETLIA
$200 \mathrm{C=C} 5$
$210 \mathrm{D}=\mathrm{C} / \mathrm{A}$
220 RETUR
will becone a single function with paraneters

$$
\begin{aligned}
& \text { eaind (int a,b,c,d; } \\
& a=10 ; b=20 ; f 1(\mathrm{az}, \mathrm{th}) \text {; } \\
& \text { printf("Id Idin's,a,b,); } \\
& c=20 ; \mathrm{d}=30 \text {; flitc, idli; }
\end{aligned}
$$

$$
\begin{aligned}
& \text { fl(x,y) int } x x, z y ;
\end{aligned}
$$

Your global variables in HASIC

10 IMFUT A, B
20 gesun 100
30 PRIMT C12
40 END
100 C12=A*日
110 C12-C12/0.142
120 RETUR
should be changed in C to local variables


```
printf('lf \(\left.\left.{ }^{2}, f(a, b)\right] ;\right\}\)
float fla,b) float \(\mathrm{a}_{\mathrm{a}} \mathrm{b}\);
\{float cl2; c12=ath; c12/=0.142; return c12; \(\}\)
```

If you plan to do any serious work in C, you ady mant to get copies of Herbert Schildt's other books. They are exinently readable, and he knows his subject. You can get C: The Complete Reference (Osborne McGran-Hill 1987) with 740 pages for $\$ 25$.

If you are interested in artificial intelligence, there is fascinating discussion in chapter 22 on page 571 that yoa will enjoy reading atout. 如t that is another story...

If you hate typing sore than you love maney, you can also get the source code for all the prograns in both these boaks by witing hie at R 1, gox 130 , Hahomet, IL b1835 or calling his at 217/586-4021.

## PRESIDENT'S CORNER

Tom Pazel - Jacs

For those of you tho noticed (and even those who didn't), by coluna vas aissing last month. I feel 1 nust apologize for this. Hy min "problem" with vriting this coluan is finding the tiae in which to do it, and unfortunately, I was extremely lacking in that comnodity last nonth. It shouldn't happen again.

Anyway, wat I absolutely nusi mention this sime 'round involves EVERYBODY (at least, those of you tho attend the meetings). From all indications, it appears the JACE is suffering fron a case of apathy. Now, before anybody jumps down ey throat about this, let we say that I understand that this is the time of year for people to be on vacation, relaxing and enjoying the outdoors, I fully agpet vith this philosophy asd an guilty of it uyself. I mean, let's face it folks, there ARE other things in this verld to be enjoyed and discovered besides Atari conputers. Without dragging my point out any further, let ae sum up wat I's trying to say here. Sunner is traditionally a "slov" tine of year for clubs such as ours. If is to be expected. Hovever, I feel i aust urge all meners to sit back and think about hou much THEY have contributed to this opganization. Do you feel coufortable about it? Couldn't you find some time to help out, urite an occasional column, do a deno? Let ce reiterate something: Ho antter whether you have 5 years or 5 veeks of experience with our beloved machines, you CAN consribute to this club! I strongly urge you to do so. Remeaber, people, HITHOUT YOU, THERE IS MO JACS.

As best as I can tell, still no shou (in this neck of the voods, anyway) on the new Atari products, I've heard tell that the devices in question are NOT vaporvare and are being shipped, at least in the uestern part of the country, I must let my personal feelings spill out here a bit and say that this is the first tine that l've been truly AMIIOUS to purchase an Atari product. I bought ay 400/800 conputer with little (if any) research and was obviously very happy with what I got. Hy $130 \times \mathrm{E}$ and two highly peliable (only 1 failure froe both of 'en in almost 5 years) 810 drives attest to the fact that 1 use and swear by Atari equipment. The Xep-80 has really get we going, however, as I can almost taste ounership. Details on this as they happen.

Let we take this opportunity to wish evepyone an enjoyable rest of the sumer. As the song goes, "See you in September".
B. B. Noyes - JACA

ICD's MULTI I/O BUARD
or MIED REVIEM

A couple of months ago, needing a printer buffer; I bought IED's peceakly released product, the 権II $1 / 0$ sound (From hencoforth to be referred to in this article is the MIO Board) for $\$ 199.95$ (the LIST price. Although a buffer (or "spoolef" as referred to by ICD) is only one of the five features, I felt that the additional investment was worth it.

The five features are as follows:

1) 256X Radisk vith the ability of suitching physical and virtual drive designations.
2) Parallel printer interface (siailar to the ATARI 850 in function, but with P ; or P 2 : as options).
3) Serial printer/noden interface (again 850 -like RS-232 type).
4) Hard disk interface supporting up to eight SASI or SCSI $\$ 1 / 4^{*}$ or $31 / 2^{5}$ hard drives.
5) Printer apcoler with a variable butfer of up to 250.

As you can see I bought much more (and, of courst, paid auch more!) than a printer buffer. Until I purchased the MID Board, I utilized a printer interface in my TRAK drives (with a 4 K buffer), and a borroved ATARI 850 as a coden interface. I din't own any hard drives, and I use the internal randist in ay 256K 800KL. Thess, what I really was doing was adding a buffor ("spooler") and putting all of ay "eggs in one basket".

I have to addit, things vere looking up. hy soden and associated software ran better than ever, and $I K$ additional semory vas available. The randisk, and the ability to change drive designations around, vas usefulio. and a lot of Fim. As anentioned, I don't have a hard drive...ss I can't attest to the ability of the NID loard in that area (although I ws tempted to purchase a hard drive). So far, beautiful!

Well, wat atout the printer interface and the spoolep? This is where the grief began. ATAR1MitERt worked FAIRLY well with the spooler by the way that is the peal reasen I purchased the MIO Board.asto use it with All in editing this newsletter); however; if I wasa't
watching, it vould repeat copsats on occasion. But that vas minor; the spooler did not vork at all with Ally progran of a database nature (such as SMFILE+) and acted strangely with various graphics programs (inciuding PRINTSHOP and our own Ton Pazel's PS Utilities). Further; it ade no difference whether the spooler uas engaged or not...eAven vith a "O'K spooler...problens galore.

Nov of coursef my first thought was, either I have done something urong, or ay software is "buggy". I called ICD (the first of nany direct, long distance calls; some in-person, some to their BBS). I uas told that there vas a problen with the code in their "chip" and that there vere problen with using the MiO Boapd with SYMFILE+ (this was before I noticad problems with aluost any softwarel. I was arsured a "fix' was in the vorks. Subsequent phone calls gave se added intelligence that 1) the "fix" was in the future (perhaps Buck Rogers can use (t), and 2) that the procle el vas vith a los of sottuare. I was further uade avare of the fact that it was a "global" problen, in that if I exchanged ay MID Board for another, that I vould continue to have the same probleas.

Hell, this brings up an interesting question. What deout all of those glowing reviews in the ATARI-specific angazines? Especially the reviev by Matt Rasliff. If it is an across-the-board problew vith the MIO Board...hou did his all plus and no minus reviav cone about? Has his trial of it cursory? I mean, we are talking a review in a aajor aagazine of an EXPEMSIVE product. I EXPEET objectivity and thoroughness (not to mention, honesty), in a reviev that can potentially create sales. I vill be sure to send Ir. Ratliff a complenentary copy of this Newsletter article, in fact, I'll even send his the entire Mevsletter!

I developed by oun "fix" to the problen (and based on selling [not list] prics, probably lost a bit); the fix vas simple, no viring or harduare madifications were necessary, No more suspenst, if you oun a 256 K Mio Board vith similar problens, and don't want to uait for the ICD "fix", here is what 1 did: I exchanged the MIO Board with ICD for the SPartabos Construction Set, The r-Tiae 8 Cartridye, the us Doubler, and a PiR: Connaction, Perhaps you nay even be able to negotiate an even better gettlement!

Please understand, this is not an "Anti-Icn" article. The fact that I nou possess and use the other ICD products should attest to that. Further, when 1 mentioned an exchange, Ton Harker of ICD vas more than cooperative. I vish ICD nothing but success in the future. They have been a good supporter of ATARI and hTari users. Hopefully the nid Board will eventually reach its full advertised and claimed potential. I just vantod to assess it honestily.

221 B BAKER STREET<br>DataSoft/Intellicreations<br>19808 Mordhoff Place<br>Chetsworth, ca 91311<br>(818)886-5922<br>LIST PRICE: 334.95

## Reviev By Steve Godun

Hy first inpression of 2218 Baker Strest, after glancing over the packeging, was but one word: CLuE, This game reninds ne so auch of the gaae Clue (C) Parker bros.) that I vas villing to spead the $\$ 35$ for it. 2218 Baker Street is really a board gane of the same naas converted to computer, but somhou CLUE becane more popular on fanily tables than 2218 Baker Street did.
for those unfortunate fou who have never played 2218 Bakef Street (the board gane, that is), let me give you a urief overviev, You play the role of a detective trying to solve cases ranging from sinply (?) decoding a message to outright aupder (or was it suicide?), while other players try to do the sam before you do. Rolling a die allows you to sove anong the buildings and streets of England searching for clues. Mobody is going to julep out and start shooting at you, or try to get you to stand on a trap door, or anything else of the sort. With the obvious exception of the cases to be solved, this is a non-violent gane.

Anyway, back to the computer version. Up to 4 players - or you can work on teans, if you like - compete to solve one of thirty crines included an side 2 of the disk. Players/Teass can choose to don the appearance of the infanous Sherlock Holnes, Doctor Hatson, Inspector Lestrade, or Irene Adler. Clues, found in the various establishants ranging frow a Paum Shop to Scotland Yard itself, caa be placed under secpet codes so that only the tana that knows how to decode it vill get the clue (this is optional; you can also have uncoded clues). Rolling the "die" (accomplished by holding down the SPACE bar or the joystick button) allows your joystick-controlled detective to move from 1 to 6 "spaces" on the screen. The entire gase board is represented (in excellent graphics) in a three-quapter overhead viev. Mot exactly true 3-0 because your player can't actually disappear and reappear behind a buliding, but impressive nonetheless. And if you get lost, a app is instantly available with the tap of a key.

Clues are given out in parts, so it aight take three or four clues to get, for example, the name of the killer. A little logic can spare you the extra cluegetting, since solving the crime in as little clues as possible will got you a higher zating.

The gave disk also coass vith a Case Book, containing
a short background history on each of the 30 casts. In onder to understand uhat's going on in the gane, you have to read the case history that goes allong with the gane you'll be playing. Each case history is short - usually no more than 5 paragraphs.

A soneuhat unexpected treat is speech synthesis. It is very cleap and is used throughout the galle. for exaaple, when the gase begins you hear Holmes say "The gane is afoot!" Entering the Carriage Depot brings in the clop-clop of horseshoes against cobblestone streets and the neigh of the horses. And an oul nakes his usual sounds in the Park.

Aleost all of the cases ape very siaple to solve. I yould consider the age group for this game to be 10-14. Some of the cases are more difficult to solve than others, aspecially when multiple players are involved. Anyone who has had an interest in coaputer adventuring but found most adventures like the Ulitiea series or Infocon ganes will probably get a longer shelf life out of this one than the dedicated infocom player (like ne). It took ne an average of $t 0$ ainutes each to solve the firgt 5 cases, and after that $I$ shelved $i$. But renenber, $i \prime m$ an infocon/ultina person, so ! have quite a bit of experience. Lending the disk to a friend who has just started adventure ganing proved ay theory - he took on the first few cases and fell in love vith it (I wish he'd give ay disk back though it's been a week!). This is definately a fanily gane (have non, dad, and Junior all join in).

Still, no game is perfect. Hy biggest disappointaent to the gase is its one-player mode. No conputer opponent shows up on the gane board - it's just you and your joystick. It wouldn't be 50 bad, except that you still have to roll the die to wove. That gets a little frustrating after a little uhile, but you get used to it.

The only other complaint 1 have is disk access. Every time you enter or exit a building, the disk starts to spin. I would have preferred use of the t30xE's extra RAM to hold some of the data. Still, if you have a quiet drive it's no big problet.

Can I recomand this gane? Yes. To whon? Anyone just startiag out adventure ganing, those who find other adventures too difficult, and for younger ganers looking for a "grom-up" game. Excellent graphics, pleasant aniation, elever, clear speech synthesis, and a now-voilent theme aakes this gase a wianep.

TREAS̄URER'S-REPORT - $6 / 87$
S. Vandenterg -Treasurer- JACE

Starting galance 6/1/87 \$2488.82

| Incose | 1638.52 |
| :--- | ---: |
| Expeases | 831.25 |

Ending Palamer 6/30/87
\$ 3296.09

## BETA TEST

Nalt Drumond - JaCs

As I sat at ay trusty soorl, typing in the results of the beta test I had just concluded on one of the J.A.C.a library disks, I thought that it aight make the basis for an article, or a series of articles for the Neusletter. While the colum "PD6", nov written by Doug Van Hook, does a terrific job in covering the library disks, he to concentrates on the "Disk of the Month'.

I thought that this could be an adjunct to his efforts, in that I vill just give a short description of EVERY file on a particular disk each sonth. As I do the beta testing of each disk that I get from San Cory, I get a good understanding of each prograll, and hou they operate. And, since I have to vrite up a short report on each of then, why not?

If any of the other 'geta Testers' would like to urite up an article on the disks they work on, I'a sure that Dave Moyes would be glad to print it. We could print then all under this heading. Hov about it?

So, with out further ado...

## J.A.C.6. Library disk tis

Bisk 459 has four graphics dewos and/or games on it. The graphics dewos are high level. Sone of then appeared at one of the C.E.S shows a couple of years ago. All of the files are of the binary progras type, and wust be loaded from DOS, or froa Ton Pazels J.A.C. 6 Menu.

ROBTSHIP.EXE
A demo of the graphics capabilities of the 8 -bit Atari computers. First is a Robot valking tovard you, and second is a space ship blasting thru spact. Both have incredible detail and highlights.

## TRACXS. DBJ

A game in which you switch track blocks around to keep the catapillar from hitting an obstruction. Three levels with two difficulty levels each. A very fast paced gam.

## 3NLLSams. 0BJ

A demo of sound and 3-0 graphics. interesting.

Hy favorite on this disk. This is a graphics treataent of a catchy tune, vith words so you can sing along. Very nicely done!!

## geta test

\#alt Druamond - JaCG

## J.A.C. 6 Library Dist \#33A

This installaent covers the J.A.C.G Library disk \$33A. This disk contains a complete package of prograns and subroutines to create and use shape tables in Basic prograss. Shape tables are a series of instructions to sove the graphics cursor and plot points. Each instruction includes the position and color information of the plotted point.

Shape table implementation is very fast, because the routine gakes direct calls to the CIO utility of the operating systen.
included on the disk are the SHAPTAB saved subroutine, and a SMAPTAB.LST listed copy of the sas subroutine. Also included are an editor progran to create your oun shape tables, and a coaplete set of documentation for the use of the editor and the subroutines.

For your enjoysent, there are also two sample prograns vith their oum shape tables. There is a little work involyed in using the demo prograss. First, you aust LOAD sither "DEMEg.DSK" or "ATARI3D.DSK" and then ENTER 'SMMPTAB.LST" to create a complote progra, hake sure that "JEME9.SHp" and "ATARI3D.StP" (the shape tables) are on the disk. Then just type RUN to see a short demo of what a shape table can do.

The docs ape vell upitten and quite extensive, but l've cone to expect this from a M.A.C.E progras. There is a short SPECIAL NOTICE at the beginning of SHAPETAB.DOC, but is it is dated feburary 24, 1993, I think we can ignore it now.

On the disk is the routine to create a shape table and save it to cassette (wy?). And the routine to get the table from tape into the graphics progran. All I can say is that they are there if you need thel.

All the prograns loaded correctly, and I had no trouble with any of the files. For what ever it's worth, this disk gets ay stanp of approval.
ix motice of copyrient violation

## Easyplex

hatet 11-Jul-87 10:50 EDT
Front Clayton Halnus (ANALO6)
Subji D.F.Scotł article
In your 1 -hag 59 you have an articie authored by D.F.Scott. That articie cane frou a past issue of $57-$ Log and is copyrighted by AMALO6 Publishing.

The BBS you got it frow is also in violation of our copyrights. Please renove the article from the databases and anywhere else you've adde it available. Though we allow our programs to be fairly freely distributed, ve do not do the same with the magazine's text. We are, after all, in the business of selling sagazines. Thanks for your attention to this aatter.

Clayton Malnua
Technical Editor

## EasyPlex

later 11-Jul-87 21:51 EmT
Front Clayton Malnum (mmalog)
Reply tos D.F.Scots article
0kay, print sonething about it in the next issue, and along with it, I'd appreciate it if you'd include a sort of 'yarning' to other BBS and newsletters that, just because ve put sone of the articles in the databases on Delphi, doesn't mean they should treat the material as if it uere public donain. It's most definitely not.

Keep up the good work.
-Clay
REPLY
Fron: Ron Kovacs [2aga
Well, As you can all read we have violated a copyright of Analog Publications. The issue in violation is Imassg. I vill re-edit that isave and renove the DF Scott article. If your systen is carrying old issues of Zhag, Please remove
issue 59 fron your database and look for the re-editted issue on the lang BBS and Conpuserve shortly.

I must stress that if you send in any article to Zhas, please ake sure it is not copyright any publication and it nust have reprint approval.

I find this most entarrasing as I get a number of articles each week for consideration.

1 will now research each article received and print the name of the person who sent the article in along vith the author.

This notice vill be printed in 2m662, 2Ma6573.

Although we are a free publication, ve are still bound to copyright laus. Please help us out by honoring copyrights.

Thank you for your assistance.
Ron Kovacs Publisher/Editor Imagazine New Jersey

Copyrighted Text
Lso Newean

In reference to the recent copyright violation I vould like to apologize to both IMag and Analog Magazine. It was never ay intention to have a text file posted on ay BES that infringed on anyone's copyright. Since I run a purely Public Doadin BBS (much to the dismay of pirates in ny area) I have alvays supported all copyrights on ay ass and vill continue to do so in the future.

I vould like to point out to hr. Walnue that I, like nost Sysops, have various, text files, as well as numerous prograns, uplonded to our boards. In the past, I have alvays checked checked all softvare thoroughly to see if it is copyrighted softuare of a comerecial typer and if that were the case, 1 never posted the prograt on ay board, and vill never as long as it is possible for me to deternine if it is pirated softuare. As for text files, that brings up another point, however. Seldoa does anyone who has captured or typed in text articles ever include any type of copyright notice. Since I have no vay of knoving which articles are copyrighted, it is highly possible to inadvertently post a text file which is copyrighted.

Of course, even in view of this fact, it is still not ay intention to post any copyrighted text file which will infringe on copyrights. I have alvays been a big supporter of Analog agazine because of its policy of releasing their prograns to the Public in the month that the agazine was priated for. I have even gone to the extreme of uriting articles which have been published in newsletters, MACE of Wichita, Ks and ACE of Eugene, just to mention two. These articles dealt with supporting Analog agazine and criticizing AMTIC magazine because of it's software copyright policy.

While I do feel that hr. Halnua does have a right to protect his copyrighted text, I feel that Analog nagazine and M. Walnuan could have handied the situation better. In doing so they would not have eenarrassed publicly the Editors of Zmag, especially since the article in question wes not posted iatentionally to infringe upon their copyright. I doubt that you will find very many sysops whe have enough tiee or a large enough library of agazines to validate, for copyright infringenent, each and every article which is uploaded to then. I vould think that should this happen aqain, and $l$ an sure that it will, hin. Walnue and Analog should siaply advist zmak of the infrimgement, if it did infringe on their text. And, that they shouid contact the 日Bs in question (whith in this case vas aine) and tell thes that the text file vas a copyrighted file.

If I had known that the file was a text file fron the nagazine, I would not have posted it on ay toard, siaple as that. I have, in the past, alvays tried to make sure that I did not post ANTIC prograss on ay board because of their copyright policy. Now 1 an in the process of removing all Analog goftware from ay board. I vill no longer post their prograns or promote their aagazine on my systel. This is not done in retaliation due to the above probles, but aore so to protect ayself from any future change of heart by Analog in regards to their softuart.

I an a software producer myself, as many of you say knov, the Dasis gBs System, I yould like to point out to Mr. Walnua that this softuare product, even though currently one of the nost popular BBS prograns for the B-bit Atari, has not been revieved in his aggazine nor in Antic. I an not now nor vill I ever be an advertisar in either agazine, mainly because, ualike ay compatition, I do not charge $\$ 40$ or $\$ 70$ for the software, but only \$15.00, which I an sure Mr. Halnue would realize could not support the advertising charge of his sagazine.

Even though I vill not advertise because of cost, I feel that Analog and ANTIC both ove se the courtesy of revieving the softuare in their mgazines. This is sonething that Zhat has done on 2 different occasions. further, there have been revieus in numerous user group newsletters.

Mr. Walnun, again, my apologizes for any problen that it nay have caused you for that article being posted on ay BBS, the HELP BBS in Hichita, Ks., (316)-683-7514, I can only say that I will atsempt to be more selective in the text files which 1 post on ay board.

## Editorial coment:

1) I edited Mir. Mewman's response in the interest of readability.
2) Although I agree with the position of AMALDG and Mr. Halnua (after all, it is the legal position), i an also a realist. To think that the posting of a sopyrighted AMLOG text file on a BBS vould affect the sale of aagazines, and the profitability of AMALD (in a negative vay)... C'ion folks!

by Donald Forbes - JAC6
You are headed for Los Angeles for an Artificial Intelligence meeting to deliver a talk on Effective Search Techaiques, wich ought to be a hit berause searching is to Al wat sorting is to data processing.

You are on the way to the airport and about to start the car when, HRLY MOSES, you discover YRIR KEYS ARE MISSIMG!!!

The keys sast be in the house. But where?


You are standing at $I$, the front door. Where are your keys? As an Al expert, you realize that the aost iaportant first step is to develop an efficient search techni que.

You take out your trusty Toshiba partable and call up your search prograa (written, or course, in Cl. You cannot afford to azke an exhaustive search. This would violate everything that you propose to discuss in your talk in Los Angeles.

Exhaustive searches are extreaely inefficient. The reason: what researchers in AI refer to as the coabinataric explesion. If you had a card deck, and placed one card on the table, you could arrange it in I way. If you had two cards, you could arrange thea in $1: 2$ mays, or 2 mays. Thres cards would give $1 \times 2 \times$ 3 mays, or f ways. Six cards gives 720 ways. The whole dect ( 52 cards) gives you 8.0658170 followed by 50 2eros. This number is 52 factorial, according to sy Hewlett Packard 15E calculator.)

As you can 5ee, exhaustive searches are not econonical. So let us start with a tree search.


Our Toshiba now prints out the search path: Living Re to Hall to BRI back to Hall to BR2 back to Hall to $A$ 腯 back to Hall back to Living Rom to Kitchen where, EMREXA, we find the keys.

We start at the root of the tree funich happens to be at the topl and then search each lefteost branch in turn until we cose to a node that ends a path !(nown a5 a terainal node) and then backtrack to the next branch.

In AI jargon, the house becomes the CEARCH SPACE (the set of all nodes). Each roon in the house becomes a noge (a discrete point and a passible goal). The kitchen, in this case, turns out to be the 60AL (the node that is the object of the search). Your steps through the house becone the SOLIIIOM PATH (the directed graph of the nodes visited that lead to the solution). The bedroons and the bath lead nowhere and therefore becose feninfl wopes (nodes that end a pathl.

An axhaustive search mould have examined all nodes. In this case our search ended at the kitchen, and we did not have to search the bath. But in large scale coaputer searches, the brute-force technigue of exhaustive search soaks up toe auch time and too auch of our coaputing resources.

Now that you found your keys you head for the airport and the counter for Macirena Airlines. Your brother-in-law works for thea, and you have a 502 discount ticket. You ask for a direct flight to Los Angeles, and the surprised clert says: 'hat we have no direct flights to Los Angeles!
'Well, how dn I get to Los Angeles on Hacirena?
They hand you a card listing all their flights:

|  |  | Miles |  |
| :--- | :--- | :--- | :--- |
| Men York | to | Chicage | 1000 |
| Chicago | to | Denver | 1000 |
| Mew York | to | Toronto | 800 |
| Mew York | to | Denver | 1900 |
| Toranta | to | Calgary | 1500 |
| Toronto | to | Los Angeles | 1800 |
| Toranto | to | Chicago | 500 |
| Denver | to | Urbana | 1000 |
| Houston | to | Los Angeles | 1500 |
| Denver | to | Los Angeles | 1000 |

Here is a tree yersion of Macirem's flight schedule.

|  |  |  |  | Hen Yort |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1 |  | $!$ | 1 |
|  |  | . 1 |  | ! | 1 |
|  |  | icago |  | Toronto | Denver |
|  | , |  | 1 | $!$ | 11 |
|  | Denver |  | LA | Chicagr | Calgary LA |
|  | 1 ! | 1 |  |  |  |
| La | Houston | Urbana |  |  |  |
|  | ! |  |  |  |  |
|  | LA |  |  |  |  |

So how do you get to Los angeles? hat to warry. You have your trusty Toshiba with all your Al search prograss on dick in C.

There are seyeral ways to search for a solution. The nest ieportant, and the sost comen, are:

BRIND

> hepth-first searches Breadth-first searches
> RULE-fF-THHB
> Hill-cliching searches
> Least-cost searches

Which one to pick? We can try thes one at a tiee.
Let us try the depth-first search. Here we explare each possible path to its conclusion (or goal) before another path is tried. As we did in the key search, we start with the lefteost branch and pursue it to the ead. We start with Hex York - Chicago - Denver - Los Angeles. Total distance: 3000 niles. Success: Depth-first searching succeeded in finding a solution on the first try and with no backtracking,

Of course, this nas not the pprinal solution. For that, we would have to traverse all the branches to their ending nodes.

The disadyantage of depth-first searches is that you get poor results if you have a long branch with no solution at the end. Then you have to waste considerable time backtracking toward your goal.

How abput the number two sethod? Mould breadth-first searching give us a better answer?

Breadth-first searching involyes going down one level and examining (left to right) all nodes oine level domn from the start.

The first layer down gives us Chicago, Toranto and Denver. The second layer dom gives us a useless route Chicago to Denver, and then a solution: Mem Yori to foranto to Los Angeles. Total distance: 2500 ailes fwhich just so happens to be the optisal selutioni.

The depth-first and breadth-first searches, as you can see, are radically different. Soth guarantes you a solution (if one exists) because eventually they degenerate into an exhaustiye search.

The disadvantage of the breadth-first search soon becomes abvious if the goal is seyeral layers deap a lot of effort is needed to find it.

解ich gethad to choose requires you to sake an educated guess as to where the goal is most likely to be found.

Bath of these sethods are blind searches. You keep going from node to node until̂ yoo find an answer. Which is fine if you have some idea where the goal is to be found. Rut as a general method, there is a better may.

The better way is to add rule-of-thumeh inforaation to speed the search. In Al jargon, rule-of-thumb transiates into "heuristics."

If you are lost in the woods and need a drink of water, you would be crazy to start clinhing to higher ground. Water flows domnhill, and that is the direction you would instinctively choose.

Heuristic search nethods use the same technique. You try to maxisize or sininize sone aspect of the problen.

On your flight to Los Angeles, remenber that you have two choices: (1) do you want the fewest connections? or (2) do you mant the shortest route?

Here we will choose the femest cannections. Which seans that we will use the third search method, a hill-clinting search. If you are halfway up a montain looking for your casp at the top, you nill know that every step upuard is a step in the right direction.

In this case we will search the nodes looking in each case for the node that is farthest from the starting point lin the hopes that it will pat us closer to our destination at Los Angeles).

In our case, the first layer gave us Denver as the farthest from Hem York, and the next layer gave us Los Angeles, our destination. Total distance: 2900 niles, which is not bad. The route had anly one stap on the may and is not much Ionger than the shortest route. Best of all, we found a solution without having to waste tise on extensiye backtracting.

This turned out to be a good solution because there was a connection fron Denver to Los Angeles. If that were lacking, then we wold have ended up with a route fros Mew York to Denver to Houston to Los Angeles for a distance of 4900 ailes. In Al jargon, this salution "clishs a false peak."

Hill-climing has three eajor disadvantages. If you hit a false peak, you have to do extensive backtracking. You can run into "plateaus' where all nodes seen equally good or bad, so that you hill-clinbing is no better than depth-first searching. Thirdly, you say run inte a 'ridge" and backtracking may cause you to cross the ridge eany times.

In spite of the disadyantages, hill-clinbing is still better than blind depth-first or breadth-first searches.

The opposite of the hill-cliching search fuhich aininized the number of comnections) is the least-cost search (which will ainisize the nuaber of ailes).

The analogy for the least-cost search is when you stand in the aiddle of the street on a big hill wearing raller skates - it is a lot ezsier to ga domn than up.

The least-cost search takes your to Toronto, and fros there to Las Angeles. Yotal distance: 2600 ailes, which also turns out to be the shortest route.

The least-cost search has the sase disadvantages as the hill-clieding search, except in reverse. linstead, you have false valleys, lowiands, and gorges.

All in all, rule-of-thubb searches are likely to give you better results than blind searches.

So far we have looked only at single solutions. But suppose that you needed multiple solutions? Suppose, for exaplie, that you had several coapanions but none mere to be allowed to share the same flight?

This is not the sase problez as finding $\mathrm{A} L \mathrm{~L}$ solutions, berause that again involves an exhaustive search.

Two favorite methods of finding sultiple solutions are: (1) path removai, and (2) node renoval.

Path reaoval takes out of the database all those nodes that provide a current solution, and then tries to find another solution. Path reaoval gets you to Los Angeles three ways: Mew Yort to Chicago to genver to LA (for 3000 ) siles; Hew York to Toronto ta LA (for 2600 ailes); and $\overline{\text { ay }}$ to Denver to LA (for 2900 ailes). It so happens that these are the three best solutions.

Mode resoyal works by taking out the last node in the current solution path and trying again. This tise you end up with threse solutions: Hew York to Chicago to Denver to Ls (for 3000 ailes); ay to chicago to Denver to Houston to LA (for 5000 ailes); and $n Y$ to Toranto to LA (for 2600 siles). Here we found the best solution and also the worst.

Once you are back froe giving your talk in los Angeles and want to try out the searches on your computer in C , you can find then all in a new (1987) 740-page book called C: The Cauplete Reference
 Herbert Schildt. (If you don't want to type out the cade, call hin (217/586-4021) or write: RR 1, Box 130, hahomet IL 61835.)

He has alsn witten a brand new book on Artificial Intelligence Using $C$ - but it is about tige to do the dishes...put out the garbage... and go to bed.... 50 I will save that story for another tise...

BEFORE calling us,call around THEN CALLUS FOR LOWEST PRICE:

We Are A Certified Atari/Epson Service Center/Dealer

Low Overhead = Low Prices


visa-m/c<br>9am-5pm mail orders



Software for ftari 8-bit and ST computers subscriotions (6) issufes) ondy \$79.95!

Disk Publications, Inc.
12200 Park Central Drive Suite 310 Dallas, Texas 75231

1-600-345-6467
in Texas call collect 214-788-4441

Writing For The JACG Newsletter

Articles should be submitted to the Editor by the $20 t h$ of the month for inciusion in the next issue. Submissions preferred on disk using Atariuriter. Use paragraph indentation marker (CTRL-P) if possible. other file structures are acceptable as long as they are not in dos 3. Do not insert special printer control coces unless absolutely needed. All formats will be considered, including hand written documents and transfer via modem, if first arranged with the Editor.

We encourage everyone to express his/her thoughts, knowledge and opinions as often as possible. Writing will be modified at the discretion of the Editor. No piece will be knowingly altered out of original context or intent.

If you want to read the latest Atari news and revieus, dounioad Your copy of Zadg from the Syndicate BBS in Middlesex, Ney Jersey (phane (201)968-8148), or the JACG BBS in Roselle, New Jersey (phone (201)298-0161). Also available nou are the current issues of the monthly luag ST Report!



ADELALDE (Aastralía) COMPUTER CLUB - - -

## LET THE

 JACE (Do The Work for You)8. Gorski - JACG

Sit back, relax, and earn extra aoney, by letting the JACG sell your original software. for one reason or another, we all buy software that just isn't right, has teen outgrown, of is no longer needed.

The Jack will sell that softyare (naximan of 3 pep wonth) at its' monthly eetings. All you have to do is to bring in the softuare and ORIFIMAL documentation, clearly narked with: your nane, menber number, and the price you vould like to sell it for!? For $20 \%$ of the sale price, the JACS vill handle the sale for you, with no hassles, Please be sure to bring your software to the meeting early, so that it can be displayed at the flea market. This can be a wonderful way to get that nuch needed extra cash. If you need additional inforation please call, or drop ne a line:

Gary Gorski
313 Sheridan Ave.
Roselle, NJ 07203
201-241-4554

$$
\begin{aligned}
& \text { Comercial Sellers Must Advertise }
\end{aligned}
$$

The JACO Executive Comitter has adiopted the following adiley concerning commericial sales at any jeç ofiticial meeting. The effective date ci impiementation will be with the July 14 th, 1984 meeting.

1. Any merchant selling or renting products, selling services, or in any tay promoting same at JACS cluomestings mus: have an advertisement in the current or previcus montris issue of the IACD Newsletter, $1 / 4$ page minimum.
2. The number of merchants shall be reetricted to three per metting unless special permission is grantec by the President. Preference will be given to current aduertisers.
3. Each merchant will occupy no more than one table space or its equivalent. The Jifcg does not guarantee availability or tables.
4. Merchants are responsible for the return of all furniture they use to its original location and to leave their area neat and clean before leaving.
5. Merchants will check with the Advertising lanager for permission to set up erior to the meeting to have their qualification confirmed.
6. Merchants may not sall during the official meeting and must cease sales and ciean up within 15 minutes after the end of the official meeting.
7. Any merchant vialating these rules will be not allowed to oderate at JACG functions until compliance is assured through the Jacg Executive Committee.
8. A merchant is any perscn, or group of persons, who operate as regular full or part-time business for the purpose of profit.
The purpose of these operating rules is to insure nonuyiolation of the Pell Laboratories use agreement whith, if violated, could jeopardize JAC's use of the facilities. we aporeciate your fuil cooperation in this matter. These rules do not apply to regular members seiling their own second hand hardware or original software as outlined in the fied Market Rules.

```
Remember，receiving the JACG Newsletter is just one of the many benefits of being a member of JACG．
```

MAIL TO：
Robert P．Mulhearn
8 Crescent Road
Pinebrook，NJ 07058

```
DUES:
        US (inc. APD, FPO, etc.), Mexica and Canada - $25.00
            First class mailing of newsletter add sG.00
            Foreign memberships - $30.00(U.S, cURENCY)
                フ^CO
                    MEMBERSHIF APPLICATION/RENEWAL
    RENEWAL
```

$\qquad$

``` NEW MEMBER
``` \(\qquad\)
``` FORMER MEMBER
``` \(\qquad\)

Name \(\qquad\) Member \(\qquad\)
\(\qquad\)
Addres： \(\qquad\) 21P．
City／state／Country \(\qquad\)
\(\qquad\) 1P： \(\qquad\)
Howe Phone Number \(\qquad\)
Date \(\qquad\) 1st CLASS MAIL \(\qquad\) 3rd cLASS MAIL， \(\qquad\)





Contact：Gary Gorski
313 Sheridan Ave．
Roselle，N， 07203 （201）241－4554

Take a moment and look at your mailing label on a recent issue of the JACG newsletter．Check the bottom right hand corner． following＂Last Issue：＂．This is the month／year when your membership expires．Try to renew at least one month early．This helps us keep our book keeping in order and avoids your missing any issues of the newsletter．

There are two easy ways to renew：
1．Fill out a membership renewal form in the front lobby before our monthly meeting and pregent it with \(\$ 25\)（in cash or check to the Treasurer．Add \(\$ 6\) for first class mailing of the newsietter．

2．Copy the information on your mailing label and send，with your remittance，to：

> Robert P. Mulhearn
> \& Crescent Road
> Pinebrook, NJ 07058

\section*{ン＞＞CHECK YOUFR LABELくくく} ＞ンクTODAY！くぐく

J A C G Newsletter Advertisements
 RETAILERS－MANUFACTURERS－VENDORS

How would you like to reach a targeted audience of over 780 ATARI computer users？This newsletter has a press run of 800 per month，is read by members and non－members alike，and is sent to over 60 other ATARI User Groups across the U．S．and in several other countries．

Advertising is available on a first－come and space－available basis．Camera ready copy，accompanied by payment，must reach the Editor by the 26 th day of the month preceding publication． JACG reserves the right to make decisions concerning the placement of ads within the Newsletter and editing or rejecting advertisements deened unsuitable．

\section*{Advertising Fates}
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{3}{*}{\begin{tabular}{l}
Full page（7－1／2 \(\times 9\) ）．．． 548.88 \\
Half page ．rwo．．．．om．．．\(\$ 25.89\) \\
Quarter page ．mocono．．．．\(\$ 18.00\)
\end{tabular}}} \\
\hline & \\
\hline & \\
\hline
\end{tabular}

Discount rates available upon request．

```

ATARI EIT BYTER USERE GLUE EU
CO WOLFGNG BURGER
WIESCHENEECK 45
-4S52 HERTEN b. GER 60000
THNS $Y$

```



The dersey atari computer group (saca) is an independent, informal organization of alanl computer users. It is not affiliated with atari or any other comercial enterprise. Opiaioas expressed in this pablication reflect only the views of the indiyidual author, and de not aecessarily represent the views of jacs. Naterial in this Wewsietter may be reprinted by other atari user Groups, provided the author fif applicablez and jack are given credit. only original work may be reprinted, auestiens conceraing reprinting should be addressed to the Editor,```

