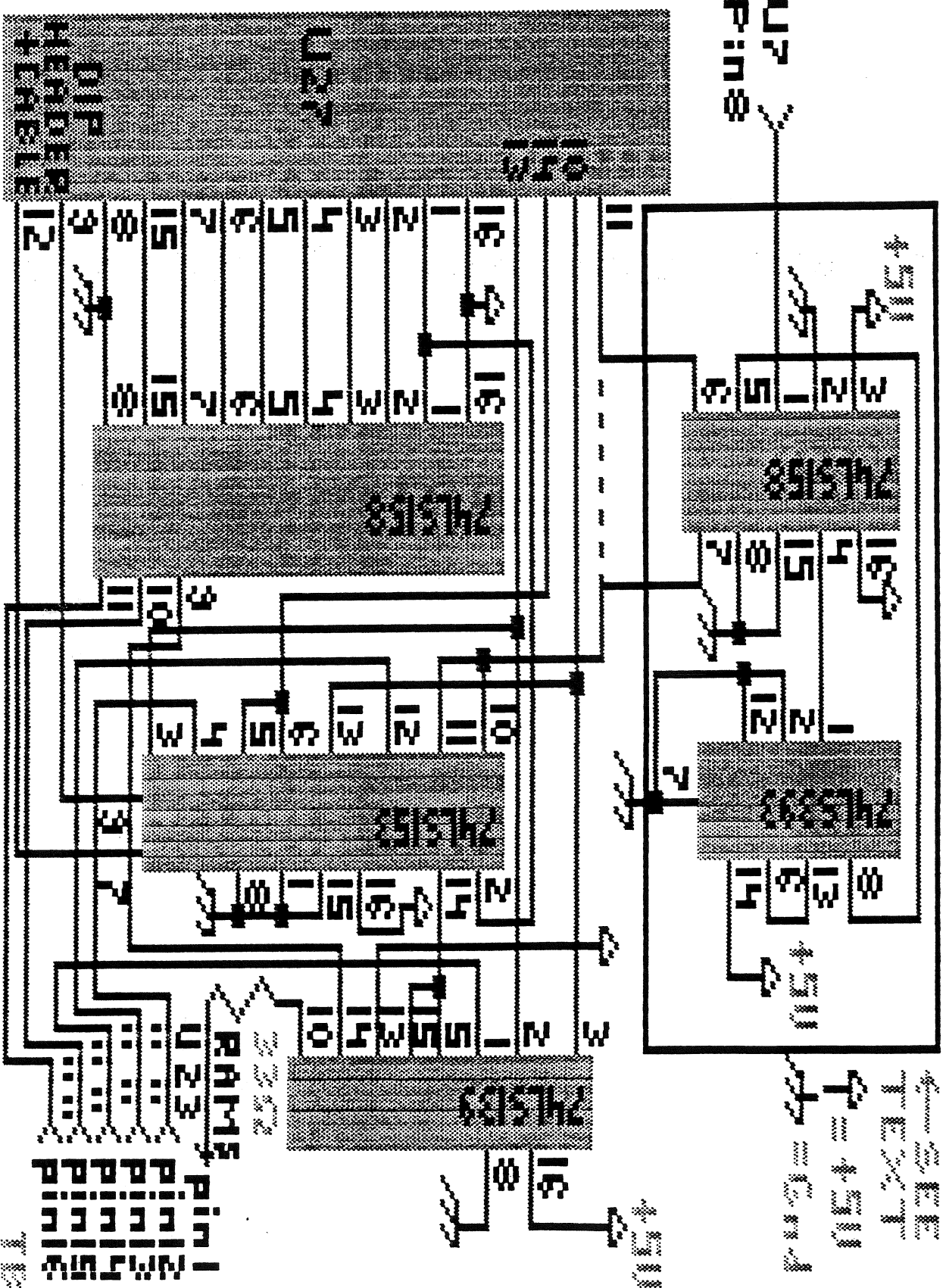# A.C.E.C.

Published by
Atari Computer Enthuasists of Columbus, Ohio

      This newsletter is distributed for the current ACE of
Columbus membership. Dues are on an annual basis and entitle
the members to all club benefits (Newsletter, Disk or Tape of
the month, group discounts, etc.). Monthly meetings, at
DeSales High School (Cafeteria) on Karl Road are also open to
nonmembers.

      Upcoming meeting dates at 7:30 pm are:

April 14

May 12

April 14

PRESIDENT
Sheldon Wesson
444 N. Pearl St.
Granville, Ohio 43023
614-587-2716

VICE PRESIDENT
Warren Lieuallen
1652 Hess Blvd.
Columbus, Ohio 43212
614-488-3977

MEMBERSHIP CHAIRMAN
Tim Adcock
7544 Satterfield Road
Worthington, Ohio 43085
614-764-9492

TREASURER
Bill Eckert
6632 Lisamarie Road
Columbus, Ohio 43229
614-891-9785

DISK LIBRARIAN
Charles Lusco
Channing Terr. #C
Columbus, OH 43232
614-863-4016

NEWSLETTER EDITOR
Mark Shuter
1854 Solera Drive
Columbus, Ohio 43229
614-899-9473

ADDRESS ALL MAIL TO:

ACE of Columbus
P.O. Box 849
Worthington, Ohio 43085

SIG Notes

The SIG meeting on February 27th was well attended, despite the cold and snow. Several new faces were there, as well as the old "die-hards"!

The RAMDISK utility for the 800 XL was demonstrated (after some initial difficulty in setting it up properly!). It was discovered that the instructions in the January newsletter had a small typographical error in the first statement, which should read: POKE 1802, (PEEK(1802) +128). Once this is corrected, the RAMDISK is set up without difficulty. Everyone was impressed with the speed of access to the virtual disk. If anyone has any interesting uses for the RAMDISK, please share them with the rest of us.

The Communication SIG was hampered by the removal of the telephone from the meeting room. Several telecommunication programs were demonstrated, including Express 1030 and Amodem 7.0, but going on-line was not possible. Hopefully, the new location for the SIG meetings will allow phone connection again.

Charles Brown's BASIC class was as enthusiastic as ever. Several detailed discussions cleared up some misunderstandings and misgivings about Atari BASIC, and several new techniques were explored. We certainly hope that Charles will continue his efforts in educating us all.

The next SIG meeting will be Wednesday, March 26th, at an as yet undetermined location. I will announce the time and place at the ACEC meeting on March 10th, and will have Sheldon put it in the monthly flyer.

A.C.E.C. Publications Library

The folowing magazines and books may be checked out at a regular A.C.E.C. meeting and must be returned at the succeeding regular meeting. We ask your cooperation in returning your materials promptly, so other members can enjoy them also.

M A G A Z I N E S

ANTIC - Apr 1982 thru Feb 1985 (not all issues available)

ANALOG - Issue #6 (1982) thru Issue #27 (Feb 1985)

BYTE - Sept 1981, Feb 1984, June 1984, Oct 1984

Creative Computing - Sept 1984, Jan 1985, May 1985

Dr. Dobb's Journal - June 1985

B O O K S

STIMULATING SIMULATIONS,C.W. Engel - Twelve unique programs
in BASIC.

ATARI BASIC, Bob Albrecht et al

INSIDE ATARI BASIC, Bill Carris

ADVANCED ATARI BASIC TUTORIAL, R.A. Peck - A Sam's book.

DE RE ATARI - A guide to effective programming.

ATARI OPERATING SYSTEM SOURCE LISTING, Atari Corp.

    You are encouraged to donate any related books and
magazines to foster our growing library. Please see Bill
Morgens for further information.

More On Assembly Language

    I am back to continue my series on machine language. I
have included a simple program, it will prompt the user to
input a phrase and then print the phrase near the bottom of
the screen. I know it dosen't sound like much, but it will
make a good demonstration. I used the Atari Macro Assembler
for this program. It is a different assembler than the one I
used in my last installment, but the commands are still the
same.

ATARI Macro Assembler Ver 1.0a Page 1

D2:INPUPRNT.AS

```
    1        2                 3

  3000   = 3000               ORG $3000
                          ;THIS PROGRAM WILL PROMPT THE USER
                          ; TO ENTER A PHRASE
                          ;AND PRINT IT TO THE SCREEN
                          ;1ST - LETS CLEAR THE SCREEN
  3000 +A200      INPUT:    LDX #0
  3002 +A909                LDA #9
  3004 +9D4203              STA ICCOM,X
  3007 +A9E6                LDA #LOW CLEAR
```

```
3009  +9D4403                        STA ICBAL,X
300C  +A930                          LDA #HIGH CLEAR
300E  +9D4503                        STA ICBAH,X
3011  +A901                          LDA #1
3013  +9D4803                        STA ICBLL,X
3016  +A900                          LDA #0
3018  +9D4903                        STA ICBLH,X
301B  +2056E4                        JSR $E456
                      ;PRINT MESSAGE
301E  +A200                          LDX #0
3020  +A909                          LDA #9
3022  +9D4203                        STA ICCOM,X
3025  +A986                          LDA #LOW PROMPT
3027  +9D4403                        STA ICBAL,X
302A  +A930                          LDA #HIGH PROMPT
302C  +9D4503                        STA ICBAH,X
302F  +A923                          LDA #P
3031  +9D4803                        STA ICBLL,X
3034  +A900                          LDA #0
3036  +9D4903                        STA ICBLH,X
3039  +2056E4                        JSR $E456
                      ;GET USERS INPUT
303C  +A200                          LDX #0
303E  +A905                          LDA #5
3040  +9D4203                        STA ICCOM,X
3043  +A9A9                          LDA #LOW ANSW
3045  +9D4403                        STA ICBAL,X
3048  +A930                          LDA #HIGH ANSW
304A  +9D4503                        STA ICBAH,X
304D  +A93C                          LDA #60
304F  +9D4803                        STA ICBLL,X
3052  +A900                          LDA #0
3054  +9D4903                        STA ICBLH,X
3057  +2056E4                        JSR $E456
                      ;STORE LENGTH OF USERS INPUT
                      ;INTO A VARIABLE
305A                                 LDA ICBLL ;INPUT LENGTH (LB)
305D                                 STA LEN    ;VARIABLE
                      ;NOW WE ARE GOING TO POS. THE CURSOR
                      ;TO PRINT AT LINE 20. THIS WOULD BE
                      ;LIKE SETTING Y TO 20 IN POSITION
                      ;X,Y COMMAND IN BASIC
3060  +A914                          LDA #20
3062  +8554                          STA ROWCHRS        ;VERTICAL POS.
                      ;NOW PRINT USERS INPUT
3064  +A200                          LDX #0
3066  +A909                          LDA #9
3068  +9D4203                        STA ICCOM,X
306B  +A9A9                          LDA #LOW ANSW
306D  +9D4403                        STA ICBAL,X
3070  +A930                          LDA #HIGH ANSW
3072  +9D4503                        STA ICBAH,X
3075  +ADE530                        LDA LEN
3078  +9D4803                        STA ICBLL,X
```

```
307B  +A900                            LDA  #0
307D  +9D4903                          STA  ICBLH,X
3080  +2056EA                          JSR  $E456
                        ;TELL THE COMPUTER TO KEEP DISPLAY
                        ;SAME AS 100 GOTO 100 IN BASIC
3083  +4C8330           STOP:    JSR STOP
                        ;NOW WE DEFINE OUR VARIABLES
3086  +454E544552       PROMPT: DB  'ENTER A PHRASE UP TO 60
                                      CHARS. LONG'
      = 0023            P       EQU  *-PROMPT
30A9  = 003C            ANSW    DS   60
30E5  = 0001            LEN     DS   1
30E6  7D                CLEAR:  DB   $7D
```

no ERRORs,   336 Labels, $3097 free.

Column 1 shows the actual memory locations for different commands. Column 2 shows the hexadeciaml values for the actual object code of each command. Column 3 shows the source code for the program. This is what I actually typed in as the programmer. The object code is the actual code that tells the computer what to do. When you see a phrase with a semicolon in front of it then it is a comment. The semicolon is just like a REM statement in BASIC.

The first set of commands (3000-301B) are just like a PRINT command, it is printing the character $7D hex, which is 125 in decimal. Printing CHR$(125) clears the screen just like in BASIC.

In the next set of commands (301E-3039) we have the same type of commands. This set will print the variable prompt on the screen. In BASIC it would look like this:

PRINT "ENTER A PHRASE UP TO CHARS. LONG"

In the next set of instructions (303C-3057) we get the users input from the keyboard, in BASIC the input routine would look like this:

INPUT ANSW$

You may notice that it looks a lot like the print command. The only difference is that when printing you are putting something, but when inputing you are getting something.

Most of the rest of the program is self explanatory. First, I position the cursor at row 20, then I print the users input on that line. In BASIC it would look like this:

POSITION 2,20:PRINT ANSW$

In my program I set the vertical position, I did not change the horizontal position, so it printed in column 2 which is the default. In location 3083 I tell the computer to go back to the same location, it is just an endless loop. This holds the computer and keeps the program from ending. Down at the bottom of the program i define my variables. These are at locations 3086 to 30E6. When you define a veriable the computer will assign a memory location for the data that is stored in it. If you were to look at that location you would see the data that is stored there. The DB command is the Define Byte command and it is used to tell the program what your variable is. The BASIC equilvent would look like this:

    PROMPT$="ENTER A PHRASE UP TO 60 CHARS. LONG"

PThe DS command is a Define Space command. It tells the computer to set aside a location so many bytes long for your variable. It is the same as the DIM command in BASIC. The EQU commands that you see the variable P is a special command. It automatically figures out the length of a variable. This way you don't have to count the number of characters. I don't quite understand how it works yet, but I will tell you when I do. I know this all sounds confusing, but as I have said before if I can figure it out then anyone can.

                    by Charles W. Brown

    January 9, 1986

    CES - THE FIRST DAY
    By Jack Powell

   Las Vegas, NV - The Consumer Electronics Show! Only six weeks have passed since ANTIC attended the massive COMDEX in Las Vegas (just enough time for three holidays, two turkeys and an armload of gifts). And now, here we are - back in "Sin City" for an equally massive CES.

    FAMILY OF ATARI PRODUCTS

        Atari Corp. displayed their "family of Atari products" in a huge booth with over 81 monitors featuring videotapes of everything from Dig Dug on the 2600 video machine to Star Raiders on the 520 ST.

Whereas Atari had displayed primarily ST software support at COMDEX - a show primarily for the high end of the computer industry - their exhibit here at CES is focused on the mass-market; the K-Marts and the Toys-R-Us outlets.

The Atari exhibit is three huge walls of monitors. Looking from left to right, while standing in the middle of the purple corral, one first sees 12 monitors displaying 2600 games, including Pole Position, Stargate, Moon Patrol, and Joust. The 2600 has been redesigned as a smaller unit and will sell for $39.95. Release date is expected to be February 1st.

To the right of the 2600 screens are twelve 7800 screens. The 7800 video game machine was developed by the previous Atari company and exhibited at the June 1984 CES just weeks before Jack Tramiel bought Atari and temporarily squelched the project. The machine features excellent color graphics (due to the "Maria" graphics coprocessor) that appear to be slightly better than the 8- bit computer line, but not quite up to coin-op (or ST standards. Maria has exceptional bit-block transfer capabilities.

At CES, the 7800 was displaying crisper and faster versions of the same games as the 2600, plus Pacman, Xevious, Asteroids, Food Fight, Robotron, Galaga, Centipede, and the first two Lucasfilm games: Rescue at Fractalus and Ball Blazer. Although Atari told us the machine was ready to market immediately, they have not yet settled upon a price. The unit should sell for between $69.95 and $79.95.

There were an additional 48 monitors showing videotapes of mostly ST software coming from third party developers. Unlike the COMDEX exhibit, where Atari was surrounded by third party ST developers (using Atari's equipment), at CES, the third party support was represented on cycling video displays with company title credits.

Atari was also displaying the "Boink" comparison of bouncing balls on the three 68000 machines - the Macintosh, Amiga and 520 ST. Over in the 8-bit area, however, Atari was delighted to have just received a new Boink demo for the 130XE from XANTH - a software store and ST development company from Seattle, which had been responsible for the previous 8 -bit Boink.

The latest Boink features a spectacular, spinning 3-D fuji in place of the familiar ball. Additionally, one side of the fuji displays the well-known scrolling rainbow. Very impressive. You can find it in DL4 of the 8-bit SIG*Atari by or before January 14th.

STAR RAIDERS

Star Raiders, the classic 8-bit arcade game, is being adapted by Atari for the ST by programmer Rob Zdybel. A demonstration of the ST version was lighting up a monitor in the Atari area. The game is about one-third complete, and there's no warp drive yet, so we can't report on that particular effect - sorry. But the ships are displayed with solid modeling rather than wire-frame. And, currently, the most impressive part of the demo is the control panel on the lower half of the screen. It's a very detailed graphics display reminiscent of the control panel in Koronos Rift. Atari has no price yet on this software, which it hopes to get to market by early March.

Meanwhile, on the130XE, Atari was showing the long-awaited Star Raiders II. The game looks remarkably similar to a previously un-released arcader called "The Last Starfighter", which some insiders may have seen about a year ago in a beta version.

But Atari has done a lot of work on the game to improve its playability and make it look more like a sequel to Star Raiders. The star field now moves in response to your joystick giving the illusion of spacial dogfighting. It's more difficult to lock in on your destination planet and the orbiting algorithm has been fixed so you can slow yourself down by pulling on the joystick - but you can no longer go backwards. This makes bombing runs a lot more of a challenge. Other added goodies include shields, space stations and a tactical display. Star Raiders II should be in the stores very soon at a price of $39.95.

Atari displayed no new hardware at this CES. The 1040 ST is not on display, and the rumored 80-column card and 3 1/2-inch drives for the 8-bit machines were also absent.
   According to Atari spokesmen, both the 80-column interface and the smaller drives will be announced at the Hanover Fair in Germany.

When the drives are shown, they are expected to be single-sided, holding 325K - formatted. The access time on the 3 1/2-inchers will be about twice as fast and DOS 2.0S and 2.5 files may be "upwardly" ported to the new drives but you won't be able to port files in the other direction.

Atari will be marketing a packaged 130XE which includes 1050 disk drive, 1027 printer, and bundled software. The "starter package" will sell for $399, and the software will be Silent Butler, Star Raiders, Music Painter, Paint, and AtariWriter. The package will become available February 1st.

THE 1040 ST

Although Atari was not displaying the 1040, they did

officially announce its existence. Photos reveal a machine identical to the 520ST, with the exceptions - as previously reported by ANTIC - that the disk drive slot is where the mouse and joystick ports once were, and the ports have been moved to the right-front under the keyboard. The depth of the back section is about 1 1/2-inches deeper than the width of the current drive slots. Also, it appears as if there is a slightly different eject mechanism in the drive.

The new machine, featuring one megabyte of RAM and built-in double sided disk drive, will   sell for $999.95 (monochrome) or $1199.95 (color).

Atari has slated the 1040ST for exclusive distribution to "authorized" computer dealers and said the 520ST will be given wider distribution "beyond computer specialty dealers." The 520ST will be aimed toward the consumer who wants to trade up from an 8-bit to a 16-bit.

Atari also announced the availability "next month" of a 20 megabyte, 5 1/4-inch hard disk peripheral - the SHD-204. No other details were provided on the eagerly awaited peripheral.

Once again, Atari is "packing them in." Every time we stopped by their exhibition area the crowds were thick. ST Software developers are scattered throughout several CES exhibition halls. Over the next four days ANTIC will bring you the latest details and keep you up to date on the products and the press releases.

January 10, 1986
CES - THE SECOND DAY:PRODUCTS
By Jack Powell

Las Vegas, NV - Though most CES insiders agree this year's Vegas show has far fewer software exhibitors, a thorough search reveals a wealth of Atari related goodies at this giant, electronic toy store.

Many developers, having decided the high cost of booth space is not worth the exposure, are displaying their wares in hospitality suites scattered throughout this desert city, while still others simply wander the fair and show off their wares at other's booths.

In one hospitality suite, Datasoft was displaying the recent 8-bit products, Goonies, Zorro, and Alternate Realities. The latter fantasy role-playing epic is currently being adapted for the ST by a team of programmers led by John Butrovich. Philip Price, the game's original author, will act as creative consultant.

The ST version of AR will take advantage of the ST's greater power and RAM capacity to include many concepts Price had always wanted in the game. There will be magic spells, for example, and you will be able to get a job and earn money - as well as meet others and earn their admiration... or their hatred.

The ST AR was started two months ago and Datasoft hopes to have the first disk - The City - to market by Christmas of 1986. The second disk of AR will be The Dungeon. It is also currently under development for both the ST as well as the 8-bit machines. No release date has yet been set but both versions will debut simultaneously.

A third disk, The Arena, is currently being brainstormed. Arena will allow users to pit two developed characters against each other.

Batteries Included was demonstrating their fine collection of Atari software. The Isgur Portfolio System - a high end financial package - has been released for the IBM.

According to BI, it will be available for the ST sometime in 1986.

BI is also developing a full-scale telecommunications program called I*S talk, and a time management and billing system called I*S Time. These too will become available for the ST in 1986.

Batteries also announced a special purchase policy for educational institutions. For every three or more BI packages purchased, BI will throw in an equal number of the same title for $10. (Not bad!)

Soniture, Inc. showed off the Space Pen, a three-dimensional light pen, currently available for the 8- bit computers, and soon available for the ST. Space Pen requires its own software to take advantage of the third axis, but it will take the place of a touch tablet on two -dimensional software products. Space Pen is $150 on the 8-bits, and $175 on the ST.

Compute! Publications has a new book: The ST Programmer's Guide. The 356 page volume retails for $16.95 and includes an introduction to ST BASIC, plus explanations of the BASIC keywords. There is also a section on Logo concepts and a rundown of the Logo primitives.

In back of the Programmer's Guide is an explanation of the GEM VDI calls and how to access them from BASIC. Although GEM theory is explained, there is no listing of AES calls and no explanation of C access to either VDI or AES.

Microprose is showing a new 8-bit strategy simulation called Conflict in Vietnam, written by Sid Meier and Ed Bevers. The game, which is due in early March, is similar to the company's Crusade in Europe or Decision in the Desert. There are five battle scenarios you can choose among, which are based upon five decisive battles of the 60's "non-war".

Microprose was also demonstrating Silent Service, for the ST. Programmed by Silas Warner - who did Castle Wolfenstein - the game is expected to hit the dealer's shelves in late March.

PrintMaster, a printer utility similar to Print Shop, is being developed for the ST by a company called Unison World. The product, which is currently available on the IBM PC and Commodore 64, was not being shown at CES.

HELP FOR THE UPRINT

Digital Devices makes a printer interface for the 8- bit Atari called Uprint. The initial releases of the product had a few bugs in it and the company originally established a replacement policy which they now feel is unfair.

They have asked ANTIC to pass the word that all owners of the earlier Uprint (you can tell the earlier models by the existence of a copy switch) may receive a free exchange. Simply return your original unit along with $6 for shipping.

Jim Schwaller of Extended Software was showing Disk Library, an ST file cataloging utility currently available for $39.95. Extended Software is also related to Classic Image Software which is planning the release of a marble-rolling game for the ST called Diablo, due out in late March. Classic Image is, somehow, related to Classic Covers which makes plastic dust covers for all Atari peripherals...right down to the mouse.

Accolade announced a February release date of Sundog. The announcement was made from a hospitality suite and, though Accolade was not demonstrating the program on the ST, ANTIC has seen it and can attest to its superior graphics.

ABACUS Publishing displayed their newest ST books. ST Internals is all about the ports and the BIOS and includes a listing of BIOS system calls. ABACAS also has a 68000 machine language book for the ST. Both these books are currently available. Coming January 27th will be their GEM Programmer's Reference book featuring the VDI and AES calls. All three books retail for $19.95.

XETEC, Inc. is developing a CAD package for architectural drawing. The ST program, which was demo-ing, will be available in the second quarter at a price no higher

than $99.95.

BACK AT ATARI

Meanwhile, back at the plum-colored Atari corral, Charles Andrews demonstrated his home-brewed 320XE. The machine has been upgraded to contain 192K RAM over the standard 130XE's RAM. It is completely compatible with any XE software and enables such niceties as two RAMdisks plus one floppy - without touching the 130XE's memory.

Atari was interested in the idea, and asked Andrews to display his upgrade machine for awhile to get reaction from the CES crowd. If any of you want to see this product in the Atari lineup, contact John Scruch at Atari.

Bill Wilkinson of O.S.S. premiered their Personal Pascal for the ST. It looks like another winning language from this company.

Version 1.0 boots to a familiar GEM menu bar with drop-down menus for editing, compiling and linking. Default options for the compiler and linker may also be adjusted from here then optionally saved to disk.

Compiler options, for example, include pause on errors, chain to linker, debugging options, and GEM or TOS structure for final output code.

The editor is a command-based text editor that has a full Help screen for all commands, and a cut and paste function very similar to the ACTION! editor. We were particularly impressed with the fact that the editor also has auto-indent. A feature sorely lacking from all ST program editors up to this point.

O.S.S. has designed their own custom calls to access both GEM AES and VDI. Not satisfied with the original design, they rolled up their sleeves and made a few changes. To open a workstation, for example, you need only one call: InitGem. That's it!

Documentation consists of a very full-looking, 284- page paper-bound book. The language is currently being shipped and retails for $74.95.

MIDI MARVELS

The Casio exhibit at CES is a sprawling display of synthesizers, watches and other electronic marvels. In one corner ANTIC found Micro-W, a company with a novel approach to MIDI software. Q.R.S. Music Disks are player piano rolls translated to MIDI song drivers for the ST.

The company discovered the original Q.R.S. player piano company was still making the rolls and set about converting all that music to synthesizer code. As a result, for $19.95 you can buy a disk of Scott Joplin rags. Or, how about some Gershwin? An entire catalog of disks is expected to be available soon.

Just pump 42nd Street into your synthesizer and then alter it to suit your fancy.

Also, for the MIDI crowd, Hybrid Arts - creators of the MIDI Track-3 for the 8- bit machines - stopped by the ANTIC booth to discuss their latest MIDI software for the ST. DX-Droid, is a patch librarian/editor and the first MIDI product to use a form of artificial intelligence. DX- Droid can actually program your Yamaha DX-7 for you. Programming the DX-7 is said to be so complex, there are people who are paid to do it.

Hybrid Arts will also be releasing a sequencing program called MIDI Track ST, which will be able to read and write SMPTE time code. It can also record and play back system exclusive data. (Those last two sentences are for you MIDI freaks out there.)

MIDI Track ST will be available in both a "professional" and a "consumer" version. DX-Droid will be available in February.

No release date has been set for MIDI Track ST.

For those of you with a strong interest in MIDI's, you might want to log onto the Hybrid Arts MIDI BBS at (213) 826-4288.

January 11, 1985
CES - THE ADVENTURE CONTINUES...
By Jack Powell

Las Vegas, NV - Wandering the fantastic world of Kerovnia, searching for a way to remove the cursed wrist bracelet, you come upon an old and gnarled tree stump...

> PUT THE POINTY HAT ON THE STUMP.

The pointy hat is on the stump.

> PUT THE TOP HAT IN THE STUMP.

The top hat is in the stump.

> PUT THE GREEN BOTTLE IN THE HAT
IN THE STUMP.

The green bottle is in the top hat.

> PUT THE WHISKEY BOTTLE IN THE HAT
ON THE STUMP.

The whiskey bottle is in the pointy hat.

>PUT THE METAL KEY IN THE BOTTLE IN THE
 HAT IN THE STUMP.

The metal key is now inside the
green bottle.

>PUT THE KEY IN THE BOTTLE IN THE
 HAT IN THE STUMP IN THE BOTTLE
 IN THE HAT ON THE STUMP.

The metal key is now inside the

whiskey bottle.

The above dialogue is from The Pawn, a new text-with
graphics adventure for the ST created in England by Magnetic
Scrolls and distributed in the US by Firebird, Inc. The Pawn
may be the fist major
adventure to take full advantage of the ST's graphics
potential. The pictures were designed with Neochrome. And
they look spectacular.

ANTIC was shown a demonstration of this exciting new
game at CES. We estimate the program to be late alpha. The
pictures have not yet been condensed for optimum disk
storage, and the title screen is on a separate disk.
Firebird expects a March release date at a price of $44.95.

The Pawn uses some very sophisticated programming
techniques. The title screen alone has the capability of
using up to 512 colors simulataneously. When the program
begins, you are faced with a full, medium resolution text
screen. At the top is a menu bar - but with a difference.
The drop-down menus are shaped as ragged scrolls. Anytime
during the game, you can grab the top bar witht the right
mouse button and pull down a full low resolution picture.

That's right. A full, 16-color, low resolution picture,
scrolling smoothly over a medium resolution text screen. It
acts just like a window shade. At any time, you can scroll
the picture, part - or all of the way up to see your words.

The company was deliberately vague regarding the plot of
the game. Simply put, you find yourself in the land of
Kerovnia with some kind of band about your wrist.

The country is surrounded by a barrier that you cannot pass as long as you wear the wrist band. To leave the game, you must leave the country. And the object of the game - surprisingly enough - is to leave the game.

There are 110 locations and 40 screens. And the parser, as demonstrated above, is very advanced - particularly in its use of objects. For example, you come upon a rake, a hoe, and a trowel. Checking your inventory, you find you have nothing but the clothes on your back... and that nasty wrist bracelet.

So, you remove your clothes to find that you now have a shirt and jeans. Now, you type: TIE THE TOOLS EXCEPT THE TROWEL TOGETHER USING THE CLOTHES BUT THE JEANS. And the response is: The hoe is now fixed to the rake.

Objects may be referenced by location as well as by name: PUT THE KEYS IN THE BARROW. PUT ALL IN THE BARROW IN THE POCKET. Response: The wooden key is in the pocket. The metal key is in the pocket.

Also, any living character you run into has a character and will talk with you. You can talk to your horse and receive some pretty strange information. Also, here's another example of complex object programming. You see a mat on the ground. You get on your horse, then type: GET MAT. Response: you can't get the mat. ASK THE HORSE TO GET THE MAT. Response: he does. GET THE MAT. Response: you now have it.

Infocom fans will have a ball. The Pawn is design with several ways of winning. You can be an aggressive adventurer or a passive explorer. There's little likelyhood of a fast death if you're a nice person, but those armchair warriors with a violent bent will find it much more of a challenge to stay alive.

The Pawn has been in the works for over two years. It was originally designed for the Sinclair QL, but quickly swerved in the direction of the Atari ST. The programmers on the project include Anita Sinclair, who designed the front end interface, including the drop-down scrolls; Hugh Steers, creator of the intricate parser; Ken Gordon, who implemented the verb routines and the data handling; Rob Steggles, author of The Pawn scenario; Roddy Pratt, who programmed the low-level routines such as the interrupt handlers for the title screen; and, finally, Jeff Quilley, the artist who created the beautiful, and detailed pictures.

Magnetic Scrolls next project will be another adventure called The Guild of Thieves. Also, Firebird, Inc. was showing a completed arcader for the 8-bit machines called Chimera.

Chimera, which will retail for $19.95, is a 3-D maze-arcade game with a sci-fi background. It's also a bit of a fantasy/role-playing adventure in that you wander the maze picking up objects which you may or may not need.

The big novelty is artificial speech, which is most obviously noticeable at the end of the game - when you die with a blood-curdling scream.

THE BLACK CAULDRON

Sierra On-Line, which sells the popular King's Quest II, demonstrated The Black Cauldron for the ST. The game is based on the recent Walt Disney feature animation and is similar in structure to King's Quest II. Black Cauldron is expected out in February at a price of $24.95.

Also from Sierra is Donald Duck's Vacation, and ST OneWrite. Donald will be out in March for $24.95. ST OneWrite - an accounting series - is expected in April at approximately $149.95.

ACTIVISION

Activision took a luxurious hotel suite at the Desert Inn to demonstrate their ST support. Of particular interest was their Music Studio, by Audio Light, Inc. (ANTIC has uploaded fifteen demo files from this program in DL6 of the 16-bit library. Type BRO /KEY: AUDIOLIGHT.)

Music Studio will drive the internal sound chip - but to really appreciate its capabilities you should hook it up to a synthesizer through the MIDI port.

The Music Studio is a composition-oriented MIDI product using the standard music notation system. It is not a sequencer product, although it does have rudimentary monophonic MIDI input capability. (In other words, it does not emulate a multi-track tape recorder.)

The program supports 15 different instruments in one song, and 8 different voices simultaneously. It also has very powerful MIDI channel assignment capabilities.

You can instantly replace or temporarily delete any instrument. Limited blocks of music may be delineated and then worked on, with such options as cut and past.

The Music Studio also has four tracks, each of which control all 15 instruments. There are pop-up windows for such control as redesigning the ADSR (Attack, Delay, Sustain, Release) envelopes of the sound chip. You may add lyrics and print the music on hard copy. You can have a great time with

this software.

    There's even a "paint box" mode consisting of abstract
color patterns, for those with less music training.

    The Music Studio is due in February or March at $49.95.
Activision also announced there will be an 8- bit Atari
version of the program as well.

    ANTIC also saw Borrowed Time, an Activision murder
mystery graphics adventure set in 1930. You play the role of
Sam Harlow. The graphics on this are very nice, and in many
cases have some simple animation. An interesting touch is a
window of most-used words which can be pointed to by the
mouse. You can also pick up and drop objects with the mouse.

    ANTIC spoke with Activision's Vice President of Product
Development, Kenneth Coleman. He told us Activision was
committed to the Atari ST. The immediate releases, he said,
would be programs which had been converted from their
stronger titles then improved to take advantage of the ST's
superior abilities.

    But Coleman was looking forward to the succeeding
generations of ST products which would be designed
specifically for the 68000 processor. And he told us that by
next Christmas, Activision would be releasing programs that
were conceived and designed totally for the 16-bit machine.
Because of the greater memory and speed, he said,
increasingly complex simulations were possible.

    Coleman also gave us an idea of the kind of effort
Activision puts into each product. Every program has a team
consisting of a producer, who oversees the entire project;
one to two programmers, a graphics artist, a sound/music
programmers, a writer, and a concept person.

    "When you see the 1987 products," said Coleman, "you
will say, 'Wow!'"

    AUTO PC BOARD DESIGN

    FLASH! - Abacus Software just received, and began
demonstrating, a PC Board Designer for the ST. The product -
which was generating great interest - was originally
developed in Germany for the Sinclair QL, then adapted for
the GEM system.

    ABACUS considers the product to be mostly suitable for
the vertical market. Nevertheless, though there is yet no
title or set price for the program, ABACUS has written
three-dozen orders in the past two days.

                        260XL MODIFICATION

Preface:

I have built and thoroughly tested this modification. It is
requires more wiring than either the BYTE magazine
modification or the 320XE modification; however, it makes your
XL compatible with XE software, and it gives a full double
density (192K) RAMDISK.

There are several companion files that provide pictures of
the circuit and several RAMDISK handlers. The files are as
follows:

MXLPIC1 - A detailed Koala Pad picture of the circuit.(See
cover - Ed.)

MXLPIC2 - A simplified Koala Pad picture of the circuit.
This picture is based on the assumption that you leave the
74LS158 in its socket and simply bend up 6 leads -
9,10,11,12,13, and 14. The 6 connections to the straight
vertical leads of IC1 on the picture are to these bent up
leads. Additional connections are shown to pins 9, 10, and
11. These are actually connections to the socket pins that
the leads of the 74LS158 would normally be plugged into. By
leaving the 74LS158 in its socket, considerable wiring is
eliminated; however, either circuit will work.

MXERDSRC - Assembly language source for a RAMDISK. Use the
M65 assembler. This handler works for DOS 2.0 and other
compatible DOSs such as SMARTDOS and MYDOS. This handler
works for both the 260XL and the 320XE.

MXERD3DB - RAMDISK object from the source set up for a double
density disk on D3:. Rename AUTORUN.SYS.

MXERD23S - RAMDISK object set up as two single density drives
on D2: and D3:. Rename as AUTORUN.SYS

MXERD320 - RAMDISK object file for SPARTADOS. This is a new
smart hanlder from ICD that works for 130XEs, modified
260XLs, and modified 320XEs. For the 260XL it provides a
1536 sector RAMDISK utilizing the full 192K of extra memory.

Good luck! I hope you find this modification as useful as I
have.

Dean Hester

A 130XE-COMPATIBLE 256K UPGRADE FOR THE ATARI 800XL
by Claus Buchholz

I designed the 256K upgrade described in my article, "The Quarter-Meg Atari" (BYTE, September, 1985), in December, 1984. Since this predated the 130XE, there was no precedent for extended memory on the XLs. I felt free to implement a system of eight 32K banks. The major reason was to keep the add-on circuit as simple as possible. The 130XE, introduced in early 1985, set a different standard for bank-select memory. It uses 16K banks and makes them separately available to both the CPU and the video controller (ANTIC). The XE has 128K total memory. The 64K extended RAM is split into four 16K banks.

A 256K 800XL has 192K extended RAM, which requires 12 16K banks. I have designed a new upgrade for the 800XL that implements such a scheme. Its similarity to the 130XE's scheme allows use of software for the XE on a 256K 800XL.

To select one of four banks, the XE uses two bits, #2 and #3, in the memory control register (port B of the 6520 PIA, addressed at $D301 or 54017 decimal). Zeroing bit #4 makes the selected bank appear at addresses $4000-$7FFF (16384 to 32767 decimal), as seen by the CPU. Zeroing bit #5 makes it appear there as seen by ANTIC.

In my upgrade, bits #2, #3, #5 and #6 select one of the twelve banks. Zeroing bit #4 makes the selected bank appear at $4000-$7FFF to both the CPU and ANTIC. So, any program for the XE that uses the extended RAM for CPU storage will work on an 800XL with this mod. Those programs won't use the additional 128K, though. Programs that use the video banking feature of the XE might run on the modified XL, but the screen display will be wrong.

The procedure for this upgrade is basically the same as in the article, except for the following points. If your ANTIC (U7) part number is CO21697, use the circuit described by the first connection list below. If it is CO12296, include the circuit in the second list. The circuit requires five connections to the PIA (U23). So, pins 12 through 16 must be bent up and connected to the circuit. The rest of the procedure is the same. Notice that this circuit has one more chip than the article's circuit. This is the price of compatibility.

With the 256K dynamic RAMs in your XL, be sure to wait at least ten seconds after turning the computer off. Otherwise it may not coldstart properly when you turn it back on.

My original RAMdisk software doesn't work with this new mod, so I have written a new version. It is used in the same way, except that it offers a choice of either two single-density RAMdisks or one double-density. If you wish a

disk copy of the source and object code, send me a blank disk
and return mailer with full postage, and I will promptly send
it back with the software. Alternately, you may download the
software from the Capitol Hill Atari Owners' Society BBS at
517-371-1106 or from the Castle Communications board at
517-371-4234. The source file is called QMEGXLD.SRC for
Quater-MEG XL Double.

        Also available is a RAMdisk program that sets up one
single-density RAMdisk and leaves the XE-equivalent banks
free for XE software. This is quite useful with BASIC XE, DOS
2.5, or the new Synapse software. Its name is QMEGXLS.SRC.
I ask one thing in return for this information: Please pass
it around to all your interested friends. Put it in your
club's library or on your favorite BBS. Encouraging software
support of 256K will result in many interesting uses for it.
Thank you and enjoy!

              DEFINITION OF MEMORY CONTROL REGISTER AT $D301
(54017 DECIMAL)

                    XL MOD   130XE

          bit: 7 6 5 4 3 2 1 0   bit: 7 6 5 4 3 2 1 0
               D a b E c d B R   D   V C x y B R

      D=0 enables diagnostic ROM   D=0 enables diagnostic ROM
      B=0 enables BASIC ROM   B=0 enables BASIC ROM
      R=1 enables OS ROM   R=1 enables OS ROM
      E=0 enables extended RAM   V=0 enables extended RAM
for video
abcd is 4-bit extended RAM   C=0 enables extended RAM
bank #   for CPU
-ranges from 4 to 15   xy is 2-bit extended RAM
bank #
- banks 12 to 15 are equivalent   - ranges from 0 to 3
                                     to XE's banks 0 to 3

                        PARTS LIST

      8   41256   256K-bit dynamic RAM (200ns or less)
      1 74LS153 Dual 4-to-1 multiplexer (IC2)
      1 74LS139 Dual 2-to-4 decoder (IC3)
      1   -   33 ohm, 1/4 watt resistor

              ADDITIONAL PARTS FOR ANTIC #CO12296

      1 74LS158 Quad inverting 2-to-1 multiplexer (IC4)
      1 74LS393 Dual 4-bit counter (IC5)

LIST OF CONNECTIONS FOR THE UPGRADE
CIRCUIT

        Instead of a drawing of the upgrade circuit, below is a
list of connections. Each entry in the list begins with the
name of the signal followed by all the IC pins that connect
together and share the signal.

        IC3-13 means pin 13 of IC3. The IC numbers appear in the
parts list above.

        IC1 is the 74LS158 chip from socket U27 on the XL
motherboard. DIP is the DIP header to be plugged into socket
U27. U23-xx refers to the pins you bend
up on the PIA chip at U23 on the motherboard.

```
        Vcc  : DIP-16, IC1-16, IC2-16, IC3-16, IC3-13
        Vss  : DIP-8, IC1-8, IC2-8, IC2-1, IC2-15, IC3-8
        A7   : DIP-11, IC2-10, IC2-11
        A15  : DIP-10, IC2-13, IC3-3
        A6   : DIP-14, IC2-6, IC2-5
        A14  : DIP-13, IC2-3, IC3-2
        MUX  : DIP-1, IC1-1, IC2-2
        A4   : DIP-2, IC1-2
        A12  : DIP-3, IC1-3
        RA4  : IC1-4, DIP-4
        A5   : DIP-5, IC1-5


        A13  : DIP-6, IC1-6
        RA5  : IC1-7, DIP-7
        -E   : DIP-15, IC1-15
        RA7  : IC2-9, DIP-9
        RA6  : IC2-7, DIP-12
        PB2  : U23-12, IC2-4
        PB3  : U23-13, IC2-12
        PB4  : U23-14, IC3-1
        PB5  : U23-15, .IC1-10
        PB6  : U23-16, IC1-11
        -Zd  : IC1-9, IC3-14
        -O1a : IC3-5, IC3-15, IC2-14
        -O2b : IC3-10, One side of resistor
        RA8  : Other side of resistor, Pin 1 of all RAMs
```

        If your U7 part number is CO12296, do not connect signal
A7 above, and make the following additional connections. The
connection to U7 is to a trace on the motherboard that runs
from pin 8 of U7.

```
        Vcc  : DIP-16, IC4-16, IC5-14, IC4-3
        Vss  : DIP-8, IC4-8, IC4-2, IC4-15, IC5-7, IC5-2,
IC5-12
        A7   : DIP-11, IC4-6
        -REF : U7-8, IC4-1
        REF  : IC4-4, IC5-1
        A7'  : IC4-7, IC2-10, IC2-11
        Q7   : IC5-8, IC4-5
        Q3   : IC5-6, IC5-13
```
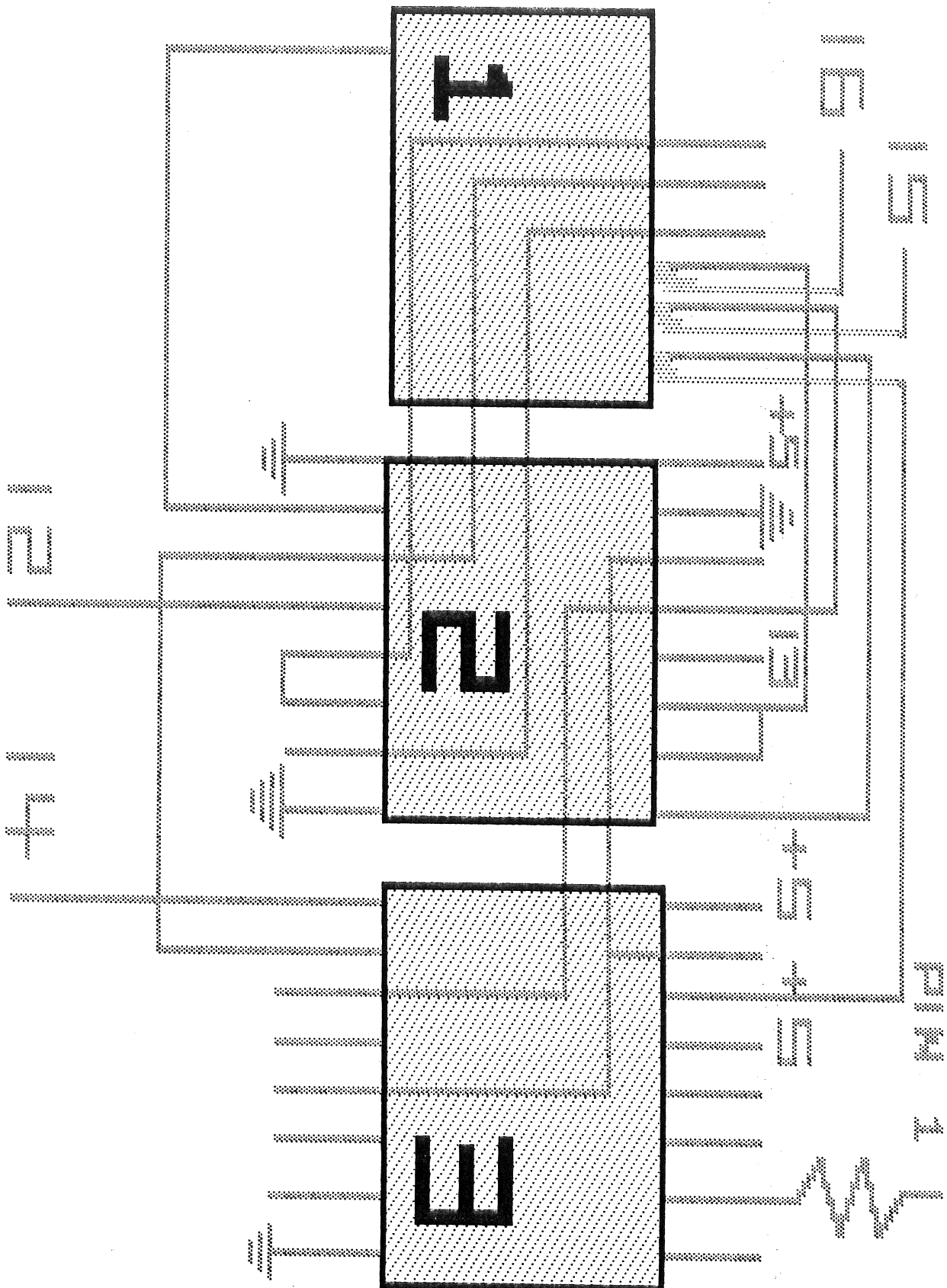
LIEUALLEN, DR. WARREN G.
1652 HESS BLVD.
COLUMBUS, OHIO, 43212
12/10/86

ACE of Columbus
P.O. Box 849
Worthington, OH
43085