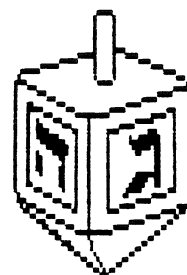# A.C.E.C. 〴

Newsletter of the
Atari Computer Enthusiasts of Columbus

Volume 4, №12

December, 1986

From all of us at the ACEC,

Merry Christmas   and   Happy Hanukkah

This newsletter is written and published monthly by the Atari Computer Enthusiasts of Columbus, Ohio (ACEC). ACEC is an independent, non-profit organization interested in exchanging information about any and all Atari Home Computer Systems.

Meetings for eight-bit users are held on the second Monday of each month at 7:15 p.m., at DeSales High School (on Karl Road, just south of Morse Rd.), and are open to the public.

Dues are $12.00 per year, and entitle members to all club benefits (Newsletter, Disk of the Month, Publications Library, SIG meetings, group discounts at selected area merchants, etc.).

The ACEC Newsletter welcomes contributions of articles, reviews, editorials and any other material relating to the Atari computers, or compatible hardware devices and software packages.

The cover of this month's newsletter was printed with a Star SG-10 dot matrix printer, using XLent Software's TypeSetter 130. The newsletter itself was also printed with a Star SG-10 printer in elite pitch, using Batteries Included's PaperClip version 1.2K on a 256K RAM modified Atari 800 XL.

PRESIDENT:
Charles Lusco
4624 Channing Terrace, #C
Columbus, OH 43232
863-4016

XL/XE VICE-PRESIDENT:
Dave Beck
1194 Country Club Road
Columbus, OH 43227
863-8600

XL/XE DISK LIBRARIAN:
Paul Pelfrey
2199-D Cortside Drive
Columbus, OH 43232
866-1454

PUBLICATIONS LIBRARIAN:
Bill Morgens
4943 Botsford Drive
Columbus, OH 43232
861-2431

MEMBERSHIP CHAIRMAN:
Mike Compton
1342 Gumwood Drive
Columbus, OH 43229
885-3757

NEWSLETTER EDITOR:
Warren Lieuallen
1652 Hess Boulevard
Columbus, OH 43212
488-3977

ST VICE-PRESIDENT:
Larry Mendel
211 Brookehaven Drive
Gahanna, OH 43230

ST DISK LIBRARIAN:
Scott Wade
938 South Weyant Avenue
Columbus, OH 43227
239-7285

TREASURER:
Dave Feeney
2665 Blue Rock Boulevard
Grove City, OH 43123
871-0524

SECRETARY:
Don Bowlin
230 Orchard Lane
Columbus, OH 43214
262-6945

The Editor's Column

by Warren Lieuallen

I'll keep it short this month, I promise! I just wanted to let you know that much is afoot with the ACEC. After reading and considering all the suggestions made by our Past-President, Sheldon Wesson (printed in last month's newsletter), the officer's have the following proposals:

That ACEC now consist of two separate, but related groups -- The ACEC XL/XE Users' Group (for all the eight-bit machines), and The ACEC ST Users' Group (for all the sixteen-bit machines). Under the leadership of one president, each group will have its own vice-president specifically in charge of the individual meetings and detailed activities. Each group will also have its own Disk Librarian, and its own Publication Librarian if that becomes necessary. The Newsletter will continue to serve both groups, and the Treasurer and Membership Chairman will be common to both as well.

Look for some new material in the newsletter, as the ST supplements become a regular feature, and both the eight-bit and sixteen-bit meetings' minutes become included as the Secretary's column, to the benefit of those among you who missed the meetings, or simply weren't paying much attention!

A variety of individual Special Interest Groups will be formed, as introduced by Charles Lusco last month. While initially focusing on a variety of programming languages, other topics will be dealt with as the need and interests of the membership dictate. Look for these meetings to get started in earnest in January or February.

A series of one-time, beginner's workshops and subject tutorials are being formed. These workshops would be small scale, in-depth, personalized lectures and hands-on demonstrations. A specific outline and set of objectives will be furnished, and a fee will be charged for participating. The instructors will be selected from our more experienced members, as well as professionals in the industry.

The BBS is to get a face-lift of one form or another, in the form of new hardware, new software, a new location, or any combination of these.

The Newsletter is to get a new name, beginning at the end of the year. For your information,, and to spur a last minute flurry of addition suggestions from you, here are the names I have received thus far:

The ACE Line
Electronique
The Knowledge Base
Atari Computer Enthusiasts Chronicle
ACE in the Hole
Heart of the ACE's

While I have my personal favorite, as well as an idea or two of my own, I would really like to get your input.

Finally, I have received a transcript of an on-line conference between several users and the management of OSS, Inc. Due to the length, and possible limited appeal of this material, I have placed two copies in our Publications Library for your use. If you would really like to have a copy of your own, let me know. It's yours for the price of copying.

Let's do what we can to make the coming year the best and most exciting ACEC has ever seen. Help us out; write an article; put together a demonstration; let us hear from you! From all the officers of the ACEC, our best wishes for a happy and healthy holiday season.

SIG Notes

SIG Notes
by Warren Lieuallen

I'm afraid my SIG Notes are going to be pretty pathetic this month. You see, there was no Eight-Bit SIG, due to conflicts with the Thanksgiving holiday, and I couldn't be at the Sixteen-Bit SIG (to be refered to simply as the ST meetings in the future) due to conflicts with my job. So, I know less than you do about the SIG meetings this month!

You will, of course, remember that our president, Charles Lusco has promised to put on a demonstration of SynFile at the next SIG meeting, which looks like January for all you Eight-Bitters. Be sure not to miss it, as valuable help and information is sure to be flying fast and furious! Watch this column, and the ACEC BBS (268-0405) for updates on the time and place of the next SIG meeting.

The ST meeting consisted of a number of useful demos. Leading off the pack was Nasir Amra with an update on the Modula-II language. Scott Wade followed with a review of Word Writer, one of the newer word processors for the ST's. In the clean up position was Larry Mendel, demonstrating Intelicom (a new terminal program) and its use of Auto Logon Scripts.

The next ACEC ST Users' Group meeting will be Wednesday, December 10th, followed tentatively by Thursday, January 15th. As always, they meet in Classroom Four, in Doctors' Hospital North, at 7:00 p.m. Come on out and join the crowd of satisfied, educated ST users!

Officers' Commentary

After the December meeting, I'm afraid that the Atari Computer Enthusiasts of Columbus will lose one of its most knowledgable, helpful and influential members -- Dr. Sheldon Wesson. As many of you know, a change in employment requires Sheldon to move from Ohio to parts unknown. While exciting for him, it is costly to us all.

Having been an active member for some time, Sheldon first came to our attention as Disk Librarian. He quickly became popular for filling the disks with a wide variety of interesting and useful public domain software, often filling them so well that it required two, three of even four double-sided disks to hold it all! From this post, Sheldon moved up to that of President, which he held until our last elections this October. Sheldon instituted a number of changes while in office, led twelve very informative and interesting meetings, and proposed a number of sweeping and prophetic items with his closing statements in last month's newsletter (also refer to my editorial).

We can never even begin to repay Sheldon for all he has done for us, although I for one would like to try. Material gains were never his object (what do you give someone who already owns at least three of every conceivable piece of hardware and software for both the eight-bit and sixteen-bit machines?!), and I certainly can't help him out with my programming prowess. I can, however, suggest that Sheldon be made our official "foreign correspondent", member ex officio, President Emeritus, and as many other honorary titles as I can think of. Although he will no longer be able t attend the meetings, it is my sincere hope that ACEC will not lose Sheldon's

input and interest.

Sheldon, from all the officers and members of ACEC, we wish you our very best, and extend to you our deepest thanks for all you've done in our behalf.
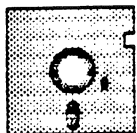
Software Review

The NINJA
by Charles W. Brown

There is a new martial arts game. It is called Ninja, and is put out by a new outfit called Mastertronic.

In this game you are a ninja warrior. Someone has taken a princess and has her hidden in a palace. Like so many of the other stories, you have to go and rescue her. Of course, there are a lot of different bad guys that will try and stop you.

The first one is the thug -- he is supposed to be easy to beat. Then there is the Karateka -- he only uses his hands and feet but is a better fighter. Finally, there is the Evil Ninja. This is the hardest of your opponents, because both he and your ninja have weapons they can use. Available weapons include: a sword, a throwing dagger, and pointed stars that they throw.

There are several different levels that your ninja must go through. The first level is outside the palace. Then he goes up into the palace to face a few more opponents. There are several different rooms that he goes through here. As he goes higher in levels, the game gets harder. There also are little idols that he should pass over, as these renew his strength. Sometimes he has more than one opponent in an area or room, just to make things interesting.

I find the background graphics astounding in this game. Many of the outside scenes or the rooms are very nice, very realistic. There is even some background music, which, of course, is oriental.

The one disadvantage to this game is the use of the joystick. I wish they also would allow keyboard control as well. I notice on some of the games that use all the positions of the joystick, you can have trouble making the proper selections, especially when it comes to diagonal joystick movements. In this game you do need the diagonal movements -- it allows your ninja to use his sword. Against the Evil Ninja, this is very important. The Evil Ninja seems to use his sword a lot; you'd better do the same! Use of the keyboard would help your fighter substantially, as it would help you quickly and precisely select your moves and weapons.

In this article I have tried to give you a little insight into this new game. I did enjoy the graphics. The action seems to be about the same, if not better than some of the other martial arts games -- the use of the sword and the other weapons makes it different. You may have to try the game yourself or see it played. The final decision is yours.

Talk-Box Phoneme Listing
compiled by Warren Lieuallen

Some of you may remember from the October issue of this newsletter that we described how to build your own speech synthesizer using the SP0256-AL2 chip from Radio Shack. In that article, it was explained that the individual sounds were formed from a series of coded numbers. On the next two pages, you will find a listing of all the phonemes and their associated code numbers for use with this chip.

By combining the instructions and programs in the first article with this list, it should now be possible for anyone to have a full featured speech synthesizer for their Atari computers, and for less than $30.00!

Allophone Listing

PAUSES

0	10 ms.	(PA1)	Before p,t,k,ch and between words
1	30 ms.	(PA2)	Same
2	50 ms.	(PA3)	Same
3	100 ms.	(PA4)	Between clauses and sentences
4	200 ms.	(PA5)	Same

VOWELS

*	a	26	(AE)	bat, map
*	e	7	(EH)	set, tent
*	i	12	(IH)	sit, kitten
*	o	24	(AA)	pot, map
*	u	15	(AX)	up, lapel, truck

LONG

a	20	(EY)	cake, great
e	19	(IY)	speek, peek
i	6	(AY)	kite, sky
o	53	(OW)	go, snow
u	22	(UW1)	After y sounds: youth
	31	(UW2)	In monosyllable words: two, shoe, food

DIPTHONGS (Blends)
R Colored

ar	59	(AR)	farm, garment
air	47	(XR)	hair, stare
er	51	(ER1)	stirring, furniture
	52	(ER2)	In monosyllable words: bird, fern
ear	60	(YR)	hear, irresistible
or	58	(OR)	fortune, store

Others

*	aw	23	(AO)	awful, talk
	oi	5	(OY)	voice, toy
	ow	32	(AW)	sound, down
*	uh	30	(UH)	cookie, full
	ul	62	(EL)	little, gentle

CONSONANTS
Stops-Voiced

b	28	(BB1)	Final position, between words and in blends with other consonants: rib, fiber, blend
	63	(BB2)	Initial position before a vowel: bat
d	21	(DD1)	Final position: said, end
	33	(DD2)	Initial position and in blends with other consonants: down, drain
g	36	(GG1)	Before the letters EY, IY, EH, IH, YR and XR: gear, gate
	61	(GG2)	Before the letters OW, OY, UW1, UW2, UH and in blends with other consonants: Gun, green
	34	(GG2)	Before the letters AE, AY, AA, AR, ER1, ER2, OR, AO, AW, blends in the middle of words and final position: gap, agree

Stops-Unvoiced

p	9	(PP)	please, ample
t	17	(TT1)	Before SS and in final position with other consonants: ga**tes**, s**top**
	13	(TT2)	All other positions
k	42	(KK1)	Before the letters EY, AE, IY, EH, AY, IH, UW1, UW2, ER1, ER2, XR, YR and initial blends with other consonants: **c**ute, **scr**eam
	41	(KK2)	Final position and final blends with other consonants: spea**k**, tas**k**
	8	(KK3)	Before the letters AR, AO, OW, OY, OR, UW1, UW2, UH and initial blends with other consonants: **c**oin, **cl**own

Fricatives-Voiced

v	35	(VV)	**v**est, pro**v**e
dh	18	(DH1)	Initial "th" sound: **th**is, **th**en
	54	(DH2)	Final position and between vowels: ba**th**ing
z	43	(ZZ)	**z**oo, pha**s**e
zh	38	(ZH)	bei**g**e, plea**s**ure

Fricatives-Voiceless

* f	40	(FF)	**f**ind, **f**inger
* th	29	(TH)	**th**in, wi**th**
* s	55	(SS)	**s**it, **s**ingle
sh	37	(SH)	**sh**irt, wi**sh**
h	27	(HH1)	Before the letters EY, AE, IY, EH, IH, YR and XR: **h**at, **h**air
	57	(HH2)	Before the letters OW, OY, UW1, UW2, UH, AO, OR and AR: **h**arm, **h**ome
wh	48	(WH)	**wh**ite, t**w**enty

Resonants

w	46	(WW)	**w**e, lang**u**age
r	14	(RR1)	Initial position: **r**ed, w**r**ite
	39	(RR2)	Initial blends with consonants: b**r**own, g**r**ease
l	45	(LL)	**l**ike, hel**l**o
y	49	(YY1)	In blends: bea**u**ty, comp[y]uter
	25	(YY2)	Initial position: **y**es, **y**arn

Nasals

m	16	(MM)	**m**ilk, a**m**ple
n	11	(NN1)	Before the letters EY, AE, IY, EH, AY, IH, UW1, UW2, AX, ER1, ER2, YR, AW, XR and final consonant blends: **n**ame, ear**n**
	56	(NN2)	Before the letters OW, AA, OY, OR, AR and UH: **n**ote, **n**oise
bg	44	(NG)	stri**ng**, a**ng**er

Miscellaneous

jh	10	(JH)	fu**dge**, in**j**ure
ch	50	(CH)	**ch**urch, fea**t**ure

These sounds can be repeated for longer sounds.

Telecommunication Review

850 Express! Versions 1.0 - 3.0
A Terminal Program by Keith Ledbetter
reviewed by Jack Powell

Within the Express! family of telecommunications software, 850 Express! is a terminal program for all Hayes compatible modems. 1030 Express! is also available for all 1030 and XM-301 modems. MPP Express! is available for MPP modems.

I may as well say right off the bat that I think 850 Express! is great. It is a public domain terminal program that is better than many terminal programs you can buy. You can download 850 Express! from many public domain boards around the country (like ACEC or Pandora), as well as Compuserve. 850 Express!, when downloaded, should later be re-named to AUTORUN.SYS. That way, it will be automatically loaded on boot up (while holding down the OPTION key). When it loads, it also automatically loads an Autodial file, rather than loading a separate file, as with Amodem 7.2. You can create this file, name it "PHONE.LST" (the name automatically loaded) and save it. Later, you can add more lists, and load them whenever you want. 850 Express! is written in Action! by OSS, so it is fast, accurate, and has no problems dialing boards, uploading, and downloading (*The Xmodem protocols were specially re-written from the Christensen specifications, to insure compatibility. - Ed.*). 850 Express! is also compatible with the R:R: Connection (which I have -- it works perfectly), and the R:Link. Homemade interfaces have not proven themselves very reliable, at least not for me.

850 Express! is a 32k program, so it should work on the 800, and all XE's and XL's. The main menu contains features,

such as all the DOS Options, and a second menu, containing info on sending macros, setting the clock, and changing the default drive and the default colors. Each BBS entry has room for 3 macros, time to wait for connection, and of course, the translation and baud rate. If you are looking for a very professional terminal program, which is powerful, accurate, and easy to use, 850 Express! is for you.

Being a public domain program, it is not to be sold, but the author, Keith Ledbetter will accept donations. If you think Keith should continue writing software (*don't we all? - Ed.*), then a donation may be a good idea. In my opinion, 850 1030, and MPP Express! are musts for modem users. You can write to him at:

Keith Ledbetter
2919 Ennismore Court
Richmond, VA 23224

Please, if you use this program, send in your donation today. The $5.00 you'll spend will get you the best bargain available today -- the very best Atari terminal program in existence!

In-Depth Tutorial

CHRIS CRAWFORD's
ASSEMBLY LANGUAGE COURSE - Lesson 3 of 8

LESSON THREE: LOGIC

BOOLEAN LOGIC

A great deal of programming involves the use of Boolean logic. This is a standardized system for handling logical manipulations. It's sort of like algebra for logic. You must understand Boolean logic if you are to write assembly language programs, so let's get started.

Where algebra deals with numbers, Boolean logic deals with propositions. A proposition is just a statement such as "Fred eats worms." It can take only two possible values -- True or False. In our programs we seldom bother with broad and glorious propositions such as "Love is the universal language of truth" or "War is the extension of policy by other means". Instead, we normally deal with propositions such as "The joystick trigger has been pressed," or "There is a diskette in the disk drive."

When we use Boolean logic with a computer, we may think in terms of true and false, but the computer is actually working with 1's and 0's. We use the following convention: a 1 corresponds to a Boolean value of "true", while a 0 correspons to a Boolean "false".

Using this system we can represent propositions inside the computer. However, programming requires more than the mere representation of data; we must also be able to manipulate that data. This brings us to the Boolean operators. There are four common Boolean operations necessary for most programming practices:

Not

This is the simplest of Boolean operators. It takes a single Boolean value as an input and produces as its output the logical converse of the input. Thus, a true input yields a false output, while a false input generates a true input.

Or

This Boolean operator takes two Boolean values as its input and generates a single Boolean value as its output. The value of the output depends on the values of the inputs according to the following rule: If one input is true OR the other value is true, then the output is true. Otherwise, the output is false.

And

This Boolean operator is just like the OR operator, except that it uses a different rule. Its rule is: If one input is true AND the other input is true, then the output is true; otherwise the output is false.

Exclusive-Or

This Boolean operator is just like the OR operator, except that its rule is: If one input is true, OR the other input is true, BUT not both are true, then the output is true; otherwise, the output is false.

When we use the 6502 for Boolean operations, you must remember that the operations are eight bits wide. Instead of working with one bit at a time, we use all eight bits of a word in parallel. The bits in a byte are independent and do not affect each other in any way -- at least as far as Boolean operations are concerned.

The 6502 has three instructions for performing Boolean operations. These are AND, EOR, and ORA. The first performs an AND operation. For example, consider the following code:

```
LDA     FISH
AND     GOAT
```

This will first Load the Accumulator with the value of FISH. It will then AND the contents of the accumulator with the contents of GOAT. The result of the AND operation will be left in the accumulator.

The AND instruction can use an immediate operand if you desire, just as the ADC instruction can.

The EOR instruction provides the exclusive-or operator. It works just like the AND instruction. The ORA instruction provides the OR operator in just the same way.

If you wish to obtain the NOT operation, just use EOR #$FF; this will invert each bit in the accumulator. Because NOT is so easily reproduced with EOR, there is no special NOT instruction in the 6502.

APPLICATIONS OF BOOLEAN LOGIC

If you have any sense at all, you are probably asking, "What good is all this Boolean nonsense? What would I use it for?" Four applications are available:

Program Logic -

Many times our programs encounter rather complex logical situations. The program must be able to load a file; if the FMS is in place and there is a diskette in the disk drive, and the diskette has the file we are looking for, or the file specification calls for a cassette load, then we will load the program. Many programming problems involve such Boolean operations. Keeping them straight is certainly a headache.

Masking Bits -

Sometimes we need to isolate particular bits in a byte. For example, in Eastern Front (1941) I used the character value to store the unit type. The color of the unit was encoded in the upper two bits of the byte, the type in the lower six bits. If I wanted to get only the unit type, I had to mask out the upper two bits. This I did with the following code fragment:

```
LDA     UNITCODE
AND     #$3F
```

The AND-instruction eliminated the upper two bits, leaving me with just the unit type. Bit-masking like this is useful in many situations. We use it frequently when we pack bits into a byte to save memory. It is also handy with input handling. If you want to read the joystick port, you frequently mask out the bits in turn to see which is active.

By the way, you mask out bits set to 1 with the AND instruction. You mask out bits set to 0 with the ORA instruction. The logic is reversed.

Setting and Clearing Individual Bits -

We also use the AND and ORA instructions to set or clear individual bits within a byte. This is most often useful for handling arrays of flag bits.

Folding Bytes Together -

This little fragment of code will fold bytes together:

```
LDA     FISH
EOR     GOAT
AND     MASK
EOR     GOAT
STA     ANSWER
```

This is a magical piece of code. See if you can figure out what it does.

Experiment with two values of MASK: $0F and $F0.

SHIFT AND ROTATE INSTRUCTIONS

The 6502 also has instructions that allow you to shift the bits around inside a byte. The first of these are the shift instructions. One, ASL, shifts a byte to the left; the other, LSR, shifts a byte to the right. Thus, the byte %01101011, when shifted left, becomes %11010110. Each bit is shifted one position to the left. The leftmost bit is rudely pushed right out of the byte and falls away ("Aaaaaarrrgghh!"). A zero is shifted into the rightmost bit. The LSR instruction does the same thing in the opposite direction.

Note that ASL also doubles the value of the byte, while LSR halves it. Two ASL's multiply by four; three multiply by eight. This makes it easy to do simple multiplication, but be careful with round-off error here. What happens if you try to multiply by 256? What do you get if you halve 3?

A variation on the shift instructions are the rotate instructions. There are two: rotate left (ROL) and rotate right (ROR). These function just like the shift instructions, except that the bit that gets shoved into the bottom is not necessarily a zero; it is the contents of the Carry bit. The bit that gets pushed off the edge of the byte goes into the Carry bit, so it is not lost. Thus, if you rotate either way nine times, you'll be right back where you started.

Rotate instructions are a handy way to get a particular bit into the carry bit where you can work on it. Conversely, once you get your desired bit into the carry bit the way you want it, you can put it back into a byte with some rotate instructions.

INCREMENT AND DECREMENT INSTRUCTIONS

The last instructions I will cover are the increment and decrement instructions. These allow you to add one (increment) or subtract one (decrement) from a memory location. These are not considered to be arithmetic operations so they do not affect the Carry flag, nor are they affected by it.

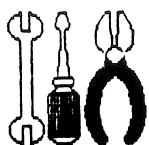You cannot increment or decrement the accumulator, only RAM locations.

Hardware Review

The P:R: Connection
### 850-compatible Interface
by Jeff Powell

The P:R: Connection by ICD, the creators of SpartaDos and many other products, is an 850-compatible interface box that can be used with any Hayes compatible modem or any Atari compatible printer. I just bought the P:R: Connection, and in my opinion, it is a very good 850 replacement. The store I purchased it from sold it for $71.95. That's almost $50 dollars less than the now-obsolete 850.

It is very compact, about 5 x 9 inches, and it gets it's power from the Atari computer. It has two RS-232's and a printer connector on the back, and an I/O cord and an I/O plug on the front. The I/O cord connects to drive 1, while the computer plugs into the I/O plug. It is compatible with all 850 modem software except Hometerm, for which there is a handler on the disk that is contained with it. 850 Express! and Amodem 7.2 work like a charm on this peripheral, and all Compuserve software should be compatible with it, too.

For $71.95, this little guy has about the same capabilities as the 850 and takes little room on your desk, and has no plug to tangle with your other ones. I would recommend the P:R: Connection to anyone who needs an Atari interface, although the 850 still has not yet had something top its great quality.

The ICD P:R: Connection package contains:

1) The P:R: Connection interface
2) A Handler disk which contains three terminal programs.
3) The instruction manual.
4) A list of other products by the same company, including SpartaDos and Rambo XL.
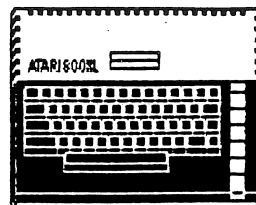
Eight-Bit Atari Programming

Machine Language -- Part 7
Using the X and Y Registers

by Charles W. Brown

In previous articles on machine language I have mentioned the accumulator. It is probably one of the most important and frequently used registers in machine language programing. With this article, I will write about two other registers: the X and Y registers.

These registers are quite similar to the accumulator. Just as you can use the command LDA #64 to load the accumulator, you could use LDX #64 to load the X register with the number 64. You can also use STX 710, which would store the contents of the X register into memory location 710. This particular example would turn the graphic 0 screen red (710 *is the background color register, and 64 is the value for red - Ed.*).

Usually the X and Y registers are used as counters or offsets. They can be used as a counter to see how many times you have gone through a loop. They can be used as an offset into a location or a variable, to keep track of where you are.

I have included the source code for a machine language program which I wrote using the Atari Macro Assembler Editor. This program will take a user's input, and will store the input into a variable (MESS4) in the usual way. Then it takes that same input and stores into the variable MESS5 backwards. By using the arrow keys, the user can display each message on the screen, switching back and forth between the two. Examining the source code, you will see that I have used the X and Y registers a lot. Hopefully, this will help you to

understand how they can be used, and will
make them more useful to you.

```
        ORG $4000          ;store the object
code at 4000 hex
        LIST -M
;FIRST WE CLEAR THE SCREEN
;THEN WE PRINT MESSAGES 1+2
;AND GET THE USERS INPUT
;THE PUTRECS ARE CALLS TO MACROS
;THAT DO PRINT FUNCTIONS
;GETREC IS AN INPUT MACRO
START:  PUTREC CLEAR,#1,#0,#0   ;THIS
CALLS A PRINT MACRO
        PUTREC MESS1,#MS1,#0,#0 ;ANOTHER
PRINT MACRO
        LDA #0
        STA CRSINH         ;THIS TURNS THE
CURSOR ON (POKE 752,0)
        PUTREC MESS2,#MS2,#0,#0
        GETREC ANS,#70,#0,#0
;THIS CALLS AN INPUT MACRO
        LDA ICBLL          ;GET LENGTH OF
INPUT
        CMP #36            ;DID USER GO TO
FAR?
        BCC LENOK          ;LENGTH IS OKAY
SO SKIP THIS SECTION
;TELL USER INPUT IS TOO LONG
;THEN TELL THEM TO HIT RETURN KEY
;TO CONTINUE
        LDA #1
        STA CRSINH         ;THIS TURNS THE
CURSOR OFF (POKE 752,1)
        PUTREC TOOBIG,#TB,#0,#0
        PUTREC PROMPT,#PR,#0,#0
        LDA #$FF           ;255
        STA CH             ;TURN KEYBOARD
CODE OFF(POKE 764,255)
;WAIT FOR RETURN KEY PRESS
RLOOP:  LDA CH             ;GET KEYBOARD
CODE (?PEEK(764))
        CMP #12            ;RETURN KEY?
        BNE RLOOP          ;KEEP LOOPING
UNTIL KEY IS HIT
        LDA #$FF           ;255
        STA CH             ;TURN KEYBOARD
CODE OFF (POKE 764,255)
        JMP START          ;GIVE USER
ANOTHER CHANCE FOR INPUT
LENOK:  STA LEN            ;STORE LENGTH OF
INPUT
        DEC LEN            ;BACK UP ONE
SPACE TO GET RID OF EOL CHAR ($9B)
```

```
;NOW WE WILL TAKE THE USERS INPUT AND
;STORE IT FROM LEFT TO RIGHT INTO
;THE VAR. MESS4
        LDX #0             ;START X REG AT 0
        LDY #0             ;START Y REG AT 0
FLOOP:  LDA ANS,X          ;GET USERS INPUT
        STA MESS4,Y        ;STORE IT IN TO
THE VARIABLE MESS4
        CPX LEN            ;COMPARE X REG TO
LENGTH OF MESSAGE
        BEQ DONE           ;IF EQUAL THEN
JUMP TO LABEL DONE
        INX                ;INC X REG (GET
NEXT CHAR IN ANS FIELD
        INY                ;INC Y REG (POINT
AT NEXT POS. IN MESS4 FIELD)
        JMP FLOOP          ;KEEP LOOPING
;NOW WE WILL STORE THE USERS INPUT
;INTO MESS5 BACKWARDS THE X REGISTER
;WILL POINT AT THE LAST CHAR IN THE
;USERS ANSWER AND WILL WORK TOWARDS
;THE 1ST CHAR.
DONE:   LDX LEN            ;START AT LAST
CHAR IN USERS INPUT
        DEX                ;DON'T INCLUDE
EOL CHAR
        LDY #0             ;START Y REG AT 1
BLOOP:  LDA ANS,X          ;GET CHAR FROM
USERS INPUT
        STA MESS5,Y        ;STORE IT INTO
VARIABLE MESS5
        CPX #$FF           ;WHEN X EQUALS
255 WE ARE DONE
        BEQ DONE1          ;GOTO LABEL DONE1
WHEN WE ARE THROUGH
        DEX                ;DECREMENT THE X
REGISTER(GO BACKWARDS)
        INY                ;INCREMENT THE Y
REGISTER (GO FORWARDS)
        JMP BLOOP          ;KEEP LOOPING
UNTIL WE ARE DONE
;NOW CLEAR THE SCREEN AND PRINT MESS6
;AND 7 ON BOTTOM
DONE1:  PUTREC CLEAR,#1,#0,#0
;THE NEXT 4 COMMANDS ARE THE SAME AS
;POSITION 1,19
AGAIN:  LDA #19
        STA ROWCRS         ;SET VERT
PRINTING POSITION
        LDA #1
        STA CRSINH         ;TURN CURSOR OFF
(POKE 752,1)
        PUTREC MESS6,#MS6,#0,#0
        PUTREC MESS7,#MS7,#0,#0
```

```
        PUTREC MESS8,#MS8,#0,#0
        LDA #$FF        ;255
            STA CH          ;TURN KEYBOARD
CODE OFF
KLOOP:    LDA CH          ;GET KEYBOARD
CODE
        CMP #6          ;LEFT ARROW(+)KEY
            BEQ BACK        ;IF THERE IS A
MATCH THEN GOTO LABEL BACK
                CMP #7          ;RIGHT ARROW
(MULTIPLICATION KEY)
                BEQ FOR         ;IF THERE IS A
MATCH THEN GOTO LABEL FOR
            CMP #28         ;ESCAPE KEY
            BNE KLOOP       ;GOTO LABEL KLOOP
IF NO MATCH (KEEP LOOPING)
        JMP START       ;IF ESCAPE KEY IS
HIT THEN GOTO LABEL START
;THIS ROUTINE WILL PRINT MESSAGE 5
;OR THE USERS INPUT BACKWARDS
;POSITION 1,12
BACK:   LDA #1
            STA COLCRS      ;SET THE HORIZ.
PRINTING POSITION
        LDA #12
            STA ROWCRS      ;SET THE VERT.
PRINTING POS
        PUTREC MESS5,LEN,#0,#0
        JMP AGAIN       ;GO BACK AND WAIT
FOR USERS CHOICE AGAIN
;THIS ROUTINE WILL PRINT MESSAGE 4
;OR THE USERS INPUT FORWARD
FOR:    LDA #1
            STA COLCRS      ;SET THE HORIZ.
PRINTING POSITION
        LDA #12
            STA ROWCRS      ;SET THE VERT.
PRINTING POS
        PUTREC MESS4,LEN,#0,#0
        JMP AGAIN       ;GO BACK AND WAIT
FOR USERS CHOICE AGAIN
;THE NEXT SECTION ARE THE EQUATES
;THIS IS WHERE I DEFINE MY VARIABLES
LEN     DS 1
MESS1:  DB 'PLEASE ENTER YOUR MESSAGE'
MS1     EQU     *-MESS1
MESS2:  DB 'NOT OVER 35 CHARACTERS'
MS2     EQU     *-MESS2
TOOBIG: DB 'SORRY..YOUR INPUT IS TOO
LONG'
TB      EQU     *-TOOBIG
PROMPT: DB 'HIT RETURN KEY TO DO AGAIN'
PR      EQU     *-PROMPT
MESS4   DS 50
```

```
MESS5   DS 50
MESS6:  DB 'LEFT    ARROW  SHOWS  INPUT
BACKWARDS'
MS6     EQU     *-MESS6
MESS7:  DB 'RIGHT  ARROW  SHOWS  INPUT
NORMAL'
MS7     EQU     *-MESS7
MESS8:  DB 'HIT  ESCAPE  KEY  TO START
AGAIN'
MS8     EQU     *-MESS8
ANS     DS 50
CLEAR:  DB $7D
```

This program is only one example of how the X and Y registers are used. Even if you only study machine language programming a little, you will see that these two registers are very valuable. It would be much more difficult to program without them.

 Table of Contents

Cumulative Disk of the Month Listing compiled by Warren Lieuallen

As I have accumulated more and more of our Public Domain Disks of the Month, I have had more and more difficulty finding the programs I've wanted. I know it's there somewhere, I saw it just the other day,.... you get the picture.

In an attempt to alleviate some of the difficulty, I have been using a BASIC disk filing program (also from the Disk of the Month!) to keep track of them all. On the next seven pages, I have included a print-out of my listing. Please notice that to conserve space, I have omitted the DOS.SYS and DUP.SYS files from the listing.

I hope this list is as helpful to you as it is to me. If anyone is interested, I can also furnish the filing program, which allows you to retrieve by disk, or by individual file name (usually, just looking through the printed listing is faster!).

```
DOM 1A1                    DOM 10A1                   ROSETTE BAS 012
ASTAR       105            WILDWESTBAS 066           008 FREE SECTORS
 ?IAPEDBIN 107             DAIRFARMBAS 104
  ?CKEN BAS 069            MSLECHWDBAS 060            DOM 15A1
GRAVITY BAS 027            HOMEINVEBAS 021            DONKONG BAS 021
CLEWSO  BAS 047            AIRDEF  BAS 053            LEVEL2      059
COLOR   BAS 003            DRAW    BAS 008            SWARM   BAS 099
MENU        037           234 FREE SECTORS           RACE        033
TANK    BAS 066                                      RUNWAY  BAS 052
164 FREE SECTORS          DOM 11A1                   LEVEL1      057
                          BLKRABITBAS 025            LEVEL3      052
DOM 2A1                   SHOOT   BIN 010            ELEVATOR    060
MANIAC  BIN 032           BIOCHART    035            ROADRACEBAS 038
BATS    BAS 070           CATACOMB    074            BARRELLS    057
TYPING  BAS 049           DEFENDITBIN 013            MATCHBOXBAS 058
MANIAC  OBJ 032           FROGGIE BIN 040           001 FREE SECTOR
SLOTMACHBAS 059          349 FREE SECTORS
MUNCHERSBAS 048                                      DOM 15A2
STATES  BAS 051           DOM 12A1                   LADY    PIC 032
246 FREE SECTORS          HARVEY  OBJ 013            TEX     PIC 033
                          MYRIAPODOBJ 066            TIMEMACHPIC 027
DOM 3A1                   JUGNAUT BAS 038            GIRLBESTPIC 042
OWARI       046           TYPO    LST 008            UNCLESAMPIC 021
MOONLAND    035           PONG    OBJ 011            DIPCHIPSPIC 034
LASERBAR    065           NEON    BAS 038            SQUEEZE PIC 027
HANOI       041          372 FREE SECTORS            WINSTON PIC 035
MGOLF       077                                      DOLLAR  PIC 036
INVADER     031           DOM 13A1                   RETROFIRBIN 042
301 FREE SECTORS          ROUNDUP BIN 021           231 FREE SECTORS
                          PACMAN2 BIN 103
DOM 4A1                   HOLLYWEDBIN 063            DOM 15B1
VULTURESBAS 081           BOWLING BAS 064            MINIDOS DOC 015
PINBALL BAS 044           OTHELLO BAS 046            WEDGE   BAS 030
TMTRIAL BAS 058           LUNLANDRBAS 070            COMPARE BAS 034
ANTWAR  BAS 037           TRON    BIN 087            PEEKRAM BAS 033
STUNTMANBAS 054           ELEPHANTNAS 069            PEEK764 BAS 004
BALLOONSBAS 092           SABOTAGEBAS 053            XREF    BAS 071
222 FREE SECTORS          METHANE BAS 011            DSASMBLRBAS 040
                         000 FREE SECTORS            ERSUB   USE 020
  ? 5A1                                              HELLO   BAS 002
   NER  BAS 052           DOM 13A2                   MINIDOS BAS 016
?n8     BAS 028           DSKTOOL PT2 051            VARTABLELST 013
FROG    BAS 062           PROGINDXDOM 016            RENUMBERBAS 060
TAG     BAS 044           DSKLABELBAS 018            HEXPOKE BAS 023
BANKSHOTBAS 048           SNAIL   BAS 018            MASHER  BAS 054
SPEEDDEMBAS 051           NOVERDUPSYS 042            TRACE   LST 042
303 FREE SECTORS          DSKTOOL RV3 054            ERRSUB  LST 026
                          DSKINDEXBAS 093            MESSAGE BAS 103
DOM 6A1                   SECTCOPYBIN 008            ERRSUB  LST 026
CALENDARBAS 044           AUTOMATEBAS 023           001 FREE SECTOR
CHANGE  BAS 036           SUPERDUPSYS 042
GRUBS   BAS 071          259 FREE SECTORS            DOM 15B2
ENGINEERBAS 048                                      DISPLAY SUB 002
SUPERMANBAS 092           DOM 14A1                   DELETE  SUB 001
OILGAME BAS 100           LEPRECHNBAS 086            MENU    DAT 004
197 FREE SECTORS          ANTHEM  BAS 123            FNBYTESTSCR 033
                          ACROBAT BAS 018            SUPRFONTBAS 062
DOM 7A1                   ROBOTSETDAT 009            JERRY   FNT 009
CAS2DISKBAS 015           SIMON   BAS 022            COMPUTERFNT 009
PIAZZA  BAS 064           PACINVADBAS 052            HEBREW  FNT 009
SOLITA  BAS 079           GRAVITR BAS 078            MATH    FNT 009
CASCOPY BAS 018           ROBOT   BAS 150            CHEMICALFNT 009
KNIGHTS BAS 091           CYCLE   BAS 046            ROMAN   FNT 009
FILLERUPBAS 067          003 FREE SECTORS            BOZO    FNT 009
212 FREE SECTORS                                     SCRIPTORBAS 126
                          DOM 14A2                   FONTBYTEBAS 099
DOM 8A1                   FLAKES  BAS 037            EXPAND  SUB 001
PHANTOM BAS 072           FLICKER BAS 030            CLEAR   SUB 001
GOBBLER BAS 073           WATERFALBAS 031            CHAR    DAT 003
CAMEL   BAS 060           HOLE    BAS 011            CHAGEN  BAS 037
TBIRD   BAS 062           EZTRANS BAS 043            FONTFLIPBAS 017
CLOSEOUTBAS 055           BOX     BAS 008            JIGSAW  FNT 009
STRBLASTBAS 054           FAUCET  BAS 029            GREEK   FNT 009
170 FREE SECTORS          MAGIC   BAS 019            HIERO   FNT 009
                          SUNRISE BAS 022            FANCY   FNT 009
DOM 9A1                   ZOWIE   BAS 038            FONTDSPLBAS 010
   ?UMBERBAS 060          SPIRAL  BAS 020            MODERNE FNT 003
   ?XS   BAS 053          TRENCH  BAS 009            TEXTEDITBAS 085
MUTIE   BAS 084           WIERD   BAS 065           033 FREE SECTORS
CHARGEN BAS 037           JOYDRAW BAS 071
HARVEY  BAS 013           ART     BAS 003            DOM 16A1
TAKE5   BAS 048           HORSE   BAS 023            RUBICUBEBAS 123
251 FREE SECTORS          PENCILS BIN 047            CRICKETSBAS 095
                          SPLINE  BAS 020            STUNTCLNBAS 056
```

```
PIANO    BAS 034
MESSIAH  BAS 052
DOODLE   BAS 004
HOOKEY   BAS 051
CASTLE   BAS 072
ORGAN    BAS 037
STRWRMSUBAS 024
001 FREE SECTOR

DOM 16A2
PPDEMO       041
TITLES   TXT 027
INFO     TXT 077
COMPILER     043
DPLAYER  DAT 007
CLAV     V   010
GV1      V   008
SCIPIO   V   005
STARWARSV    004
ROCKAS.  V   011
YESTERDYV    003
TEXAS    V   004
IBELIEVEV    004
TENDER   V   002
WABASH   V   003
RITWRONGV    004
IFYOUCANV    003
POLKSALAV    003
SUNSHINEV    008
HIGHNOONV    008
MANGER   V   002
SONATA3  V   013
VADER    V   003
HBDAY    V   002
LONDON   V   003
TITLES       005
INFO         005
EDITOR       146
DPLAYER      022
VMERGE       005
TPIF     V   009
GMF      V   021
CAPRICIOV    017
BUMBOOG  V   016
FACE     V   003
BEE      V   013
GLOWWORMV    002
LOVING   V   007
WATER    V   003
WHYME    V   003
STORYENDV    005
MATHILDAV    003
MEANDBOBV    006
SHERRIF  V   004
WALL     V   009
OLITTLE  V   002
ENTERTN  V   005
BLUES    V   001
MUSETTE  V   003
FAIR     V   009
003 FREE SECTORS

DOM 17A1
DOGGIES  BAS 068
FORTRESSBAS 068
GALAGA   BIN 042
TRAKSTARBAS 057
ANIMAL   INS 009
ANIMAL   DAT 002
ANIMAL   BAS 015
ANIMDAT  STA 005
KNIGHTS  BAS 115
PINAPPLEBAS 069
PASSION  BIN 093
OCTADRAWBAS 015
004 FREE SECTORS

DOM 17A2
SYSTAT   BAS 032
SYSTAT   SYS 003
GTIATEXTBAS 021
GTIATEXTSTR 006
COLRTYPEBAS 065
BOOTTAPEBAS 032
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CDXFER   OBJ 002
CDXFER   SRC 022
CDXFER   BAS 019
CDXFER   TXT 015
DISKPEEKBAS 038
SCRNDMP8NEC 007
SCRNPRNTBAS 064
FASTFNGRBAS 036
TYPO     LST 008
FORMATR  BIN 040
DATAXFERBAS 061
DSASMBLRBAS 040
NEC0600  BIN 002
LABELS   BAS 031
008 FREE SECTORS

DOM 18A1
LUMBJACKBAS 081
SHOTSTARBIN 011
BRICKLAYBIN 016
MAGICTRKBAS 020
DUNDRAGIBAS 139
DNDRAGIIBAS 177
DICE     BAS 072
SUBATACKBAS 065
TRIANGLEBAS 004
002 FREE SECTORS

DOM 18A2
BOXMAKERRUN 002
GBOX0    OBJ 006
GBOX1    OBJ 007
GBOX2    OBJ 007
BOXMAKERBAS 079
CLOCK    BAS 036
CCHECK   BAS 014
DCHECK2  BAS 024
BUDGET   BAS 147
KILOWATTBAS 086
THERMOWTBAS 093
SOLIDS   BAS 066
SOLIDS   DAT 007
SOUNDEMOBAS 012
001 FREE SECTOR

DOM 18B1
SCOPY    SYS 021
689 FREE SECTORS!

DOM 18B2
MANIAC   BIN 032
MYRIPEDEBIN 107
FROGGIE  BIN 040
PACMAN2  BIN 103
FILLERUPBIN 026
LIVEWIREBIN 037
RETROFIRBIN 042
HARVEY   BIN 013
SHOOT    BIN 010
293 FREE SECTORS

DOM 19A1
CANUCK   BIN 242
CREDITS  DOC 003
GALAXIANBIN 061
SMUSH    BIN 067
SHERLOCKBAS 101
BASEBALLBAS 082
SNOFLAKEBAS 030
001 FREE SECTOR

DOM 19A2
DOS 3!   SYS 045
MUSICSYNBIN 003
STARWAR2MUS 002
MUSICBOXMUS 003
BOJANGLEMUS 002
STYALIVEMUS 004
DALLAS   MUS 002
ROUND    MUS 001
EVERGRN  MUS 004
STING    MUS 001
MASH     MUS 002
YELLOW   MUS 001
```

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RAPSODY  MUS 002
UPUP     MUS 001
EASY     MUS 001
GREENSLVMUS 001
SOLACE   MUS 002
POMP2    MUS 001
OBLADE   MUS 001
SIXTY    MUS 002
BOUREE   MUS 001
DREAMER  MUS 001
ROW      MUS 001
LUCY     MUS 002
000 FREE BLOCKS

DOM 20A1
PLANET   BIN 029
MUNCHIN  BAS 063
MONOPOLYBAS 089
CRASHDIVBIN 056
ABCTRAINBAS 043
WORMSQRMBAS 043
SWIRL    BAS 017
AURABALLBIN 242
TARTAN   BAS 004
000 FREE SECTORS

DOM 20A2
DOS      SYS 034
DUP      SYS 070
DEFAULT      031
RX232    ARX 001
ARCREATEBAS 016
TSCOPE   BIN 087
TSCOPE   DOC 073
AWDRIVERBIN 004
AWDIRVERDOC 068
PAINT    BIN 051
PAINT    DOC 039
MAILIST1BAS 008
MAILIST2BAS 010
MAILIST3BAS 088
GRAPHIT  BAS 017
POLARGRFBAS 016
TRENDS   BAS 054
GREYHOLEBAS 004
001 FREE SECTORS

DOM 20B1 (FORTH)
AUTORUN  SYS 123
SYSTEM   4TH 099
NOISES   4TH 082
FLAKES   4TH 082
DOODLE   4TH 042
FLAKES   BAS 037
161 FREE SECTORS

DOM 20B2 (FORTH)
INTRFACEIN0 001
MX80     IN1 006
FORTHD1BIN2 119
DOS      4TH 013
DISK     4TH 041
BOOTEDIT4TH 013
EDITOR   4TH 095
FORMAT   4TH 050
SEARCH   4TH 041
SYSTEM   4TH 099
TURNKEY  4TH 009
UTILITY  4TH 025
FORTHD1  INZ 061
AUTORUN  SYS 002
051 FREE SECTORS
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DOM 21A1
```
    TLON  BAS 101
    :UE   BAS 080
AxENA    BAS 062
CENTUR   BAS 098
ECSMAZE  BAS 053
GANTLET  BAS 106
GLOOP1   BAS 003
GLOOP    BAS 061
SNOWBIRDBAS 042
CIRCLE   BAS 005
000 FREE SECTORS
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DOM 21A2
```
KALSCOPEBIN 047
DISKVIEWBAS 023
NEWDISK BIN 047
L1          062
L2          008
SCRNSAVEBAS 005
SCRNLOADBAS 005
CIOSAVE LST 003
CIOLOAD LST 003
BENCHMRKBAS 008
RUNAUTO BAS 005
MATHWIZ BAS 008
PICPERF BAS 060
GR107   BAS 055
SINE    BAS 014
SINEPRNTBAS 025
GRAPH   BAS 061
NORAD   BAS 060
HAHAHAHABAS 010
000 FREE SECTORS
```

DOM 21B1
```
AMSPLAY      032
CANTINA AMS 184
Y^~SAX  AMS 047
    FIREAMS 045
k..A    AMS 088
PINETOP AMS 053
JUMP    AMS 112
063 FREE SECTORS
```

DOM 21B2
```
AMSPLAY      032
BACH    AMS 164
BETHOVENAMS 047
STAIRWAYAMS 110
RONDO   AMS 053
ARTHUR  AMS 069
RED99BALAMS 089
VOLARE  AMS 034
021 FREE SECTORS
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DOM 21C1
```
HOMEINV PRG 193
HOMEINV SCR 005
ANDER   NET 071
SORT    BAS 041
HOMEINV R01 102
HOMEINV P01 111
HOMEINV F01 003
HOMEINV I01 001
MENU        015
083 FREE SECTORS
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DOM 22A1
```
AXISASS BIN 053
TRIKTRAXBIN 108
GAMBLER BAS 162
BIGJOKE BIN 088
BACTERIABIN 040
CHOPPER BIN 022
P^~ERSOLBIN 131
(   0  BAS 007
b__ FREE SECTORS
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DOM 22A2
```
SECT720 BAS 012
EXTBASICDOC 092
EXTBASICBAS 083
CALCULATDOC 013
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CALCULATBAS 083
EDFONT  BAS 077
DOSWIZ  DOC 128
DOSWIZ  BIN 112
BOXES   BAS 006
000 FREE SECTORS
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DOM 22B1
```
BILLIJ  AMS 165
MANIAC  AMS 123
LETITBE AMS 072
HMUNTUCHAMS 097
LONGER  AMS 045
OPENARMSAMS 047
IMPMARCHAMS 043
002 FREE SECTORS
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DOM 22B2
```
DOWNUNDRAMS 162
SOUTHNITAMS 100
PROUDMARAMS 046
ISLANDS AMS 074
LEADBANDAMS 075
RHAPBLUEAMS 027
RHYTHM  AMS 043
TAKEAWAYAMS 036
AMERICA AMS 011
020 FREE SECTORS
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DOM 23A1
```
SPYPLANEBAS 138
BRING   BIN 028
HYPNOSISBIN 040
AVALANCHBIN 042
CLOSEOUTBIN 072
BUNNYHOPBAS 040
MIKEBALLBIN 242
LACE    BAS 006
003 FREE SECTORS
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DOM 23A2
```
DEDSTICKBAS 166
MULE    BAS 150
NITEDRIVBAS 117
HORSPLAYBAS 104
STARSECTBAS 093
001 FREE SECTOR
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DOM 23B1
```
ACELOGO      020
GR10DBJSBAS 101
LOADFILEOBJ 002
SCRNMOVEOBJ 001
JOYSOUNDBAS 070
FASTKEY BIN 001
RAMDISK DOC 023
RAMDISK BIN 003
WEDGE   DOC 010
WEDGE   AUT 011
NUM     DOC 003
NUM     BIN 002
LOADBIN BAS 004
UNLOK2  BAS 023
REPAIR  BIN 154
CLONE   BAS 018
POLYCOPYBAS 030
DISKDIR BAS 011
CATALOG BAS 099
CATALOG A   001
CATALOG B   001
CATALOG C   001
CATALOG D   001
CATALOG E   001
CATALOG F   001
CATALOG G   001
CATALOG H   001
CATALOG I   001
CATALOG J   001
CATALOG K   001
CATALOG L   001
CATALOG M   001
CATALOG N   001
CATALOG O   001
CATALOG P   001
```

```
CATALOG Q   001
CATALOG R   001
CATALOG S   001
CATALOG T   001
CATALOG U   001
CATALOG V   001
CATALOG W   001
CATALOG X   001
CATALOG Y   001
CATALOG Z   001
LOTTO   BAS 017
000 FREE SECTORS
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DOM 23B2
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AMODEM  DOC 029
AMODEM  AUT 003
AMODEM  BAS 129
AUTODIALBAS 054
AUTODIALNUM 001
TERM1030DOC 047
TERM1030AUT 017
TERM1030BAS 091
SUPRTERMDOC 033
SUPRTERMAUT 017
SUPRTERMBAS 083
TSDIAL  DOC 033
RWFILE  DOC 007
READFILEBAS 005
WRITEFILBAS 008
DISKTRANBAS 058
BOOT850 BAS 005
011 FREE SECTORS
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DOM 23C1
```
KOALA   BAS 023
KOALA12 DOC 017
KOALA1  BAS 025
KOALA2  BAS 013
KOALA3  BAS 031
SAGE    DOC 004
SWARS   PIC 028
APOLLO  PIC 030
NIGHT   PIC 044
USTODA  PIC 033
VEND    PIC 024
VOYAGE  PIC 045
PORTRAITPIC 027
TEDDY   PIC 044
BAUD    PIC 013
PLANET  PIC 010
BALLET  PIC 055
DANCE   PIC 056
WCOYOTE PIC 019
MONSTER PIC 016
MANSION PIC 048
TRON    PIC 015
004 FREE SECTORS
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DOM 23C2
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KOALA   BAS 023
SATURN  PIC 014
SHUTTLE PIC 031
FIREWORKPIC 027
SUPERMANPIC 033
BWING   PIC 020
LITHOUSEPIC 051
CARDINALPIC 028
THEBASS PIC 023
DNKYKONGPIC 019
GGBRIDGEPIC 028
TWEETY  PIC 008
PORKYPIGPIC 020
HENERY  PIC 014
SPACE   PIC 014
ZIGGY   PIC 016
KOALA   PIC 041
OSCAR   PIC 032
SNOWMAN PIC 040
DESERT  PIC 017
LOCKUP  PIC 021
MOONSET PIC 034
DINO    PIC 018
052 FREE SECTORS
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DOM 23D1                DOM 25A1                SPACRACEOBJ 033
RAIDARK AMS 055         MOLE    BAS 068         CREEPCAVBAS 100
CHARIOTSAMS 036         DARKHORSBAS 099         ENTERDOCTXT 128
BOOGIE  AMS 055         DIVER   BAS 095         ENTRPRISBAS 235
ELITE   AMS 054         FIREBUG BIN 039         000 FREE SECTORS
BHCKTAILAMS 077         CLIMBER BAS 073
STILROCKAMS 111         MOTOMAZEBIN 067         DOM 26A2
GIRLSFUNAMS 072         SLAVES  BAS 170         VT10DOC  TXT 069
UPTOWN  AMS 056         000 FREE SECTORS        VT100    AUT 076
MARCHES AMS 111                                 RHAN1030AUT 023
002 FREE SECTORS        DOM 25A2                TERM1030BAS 092
                        AMOD25XLAUT 003         TERMDOC  TXT 045
DOM 23D2                AMOD25XLBAS 149         CIRCUIT1BAS 037
CHOPIN66AMS 131         MPPHAND AUT 047         CIRCUIT2BAS 104
ELISE   AMS 059         MPPHAND DOC 035         CIRCHAR  AUT 010
HAYDOP74AMS 017         AMODPP  BIN 117         FORMAT   OBJ 053
PCANON  AMS 070         ANIMATE BAS 014         LOADER   AUT 017
CARMEN  AMS 037         ANTED   BAS 154         LOADOC   TXT 005
FLITEBEEAMS 061         MAKESETSBAS 012         MENUMAK2OBJ 026
CLAVIS· AMS 068         HYPNO   BAS 030         SEQDOS   BAS 015
BACHORALAMS 012         DEMO    BAS 027         TRANSFIXBAS 020
NUTCRAKRAMS 125         ROM     SET 009         TRANSFIXAUT 001
049 FREE SECTORS        ANTED   SET 009         003 FREE SECTORS
                        HYPNO   SET 009
DOM 24A1                CURSOR  BAS 008         DOM 26B1
AIRATACKBAS 080         MOIRE   BAS 008         AMSPLAY BAS 051
MONEY   BIN 024         000 FREE SECTORS        AMSXLDOCTXT 026
MICROPUZBAS 078                                 COMEDIANAMS 084
THECAVE BAS 162         DOM 25B1                MUPPET  AMS 030
SPELLSAMBAS 065                                 JIG3    AMS 064
DASH    BIN 028         LANTERN2BAS 045         VIDEO   BAS 085
REBOUD  BAS 085         LATESHOWPIC 016         JAZZ    BAS 126
BEMER   BAS 075         BINKLEY PIC 029         MUSICBOXBAS 098
SPIRO   BAS 014         REFLECT PIC 030         MCCPLAY OBJ 018
000 FREE SECTORS        KRUGE   PIC 037         BACHOR  MCC 006
                        COMODOREPIC 021         BACHONE MCC 039
DOM 24A2                MODEL5  PIC 036         BACHTWO MCC 030
LANTERN BAS 042         JOHNYOKOPIC 019         000 FREE SECTORS
GOSTBUSTPIC 015         KAHN    PIC 045
SNOOPY  PIC 014         ANALOG1 PIC 031         DOM 26B2
OPUS    PIC 019         ANALOG2 PIC 054         LANTERN3BAS 069
GARFIELDPIC 021         LUCIEN  PIC 036         ET      PIC 027·
ODIE    PIC 018         DUKE    PIC 051         PARROT  PIC 052
INDIANA PIC 042         CDISK   PIC 019         KNIGHT  PIC 022
GIZMO   PIC 038         MARS    PIC 035         NIXON   PIC 020
MICKEY  PIC 021         SPIDEY  PIC 016         GARFIELDPIC 020
BATLSHIPBAS 081         VISION  PIC 020         EYEBALL PIC 020
BBSLIST ATW 059         VIPER   PIC 020         FRANKSTNPIC 020
XLKEY   BAS 010         YODA    PIC 029         SKULL   PIC 032
TEST1027BAS 006         GARFIEL3PIC 024         DRAGON1 PIC 036
UNDELETEBAS 033         011 FREE SECTORS        TWAIN   PIC 015
MLTRACERBAS 049                                 JIM2    PIC 018
MATTEDITBAS 109         DOM 25B2                RACE    PIC 040
PAINTER BIN 020         LANTERN3BAS 069         STRIPE  PIC 018
GARFIEL2PIC 031         KIRK    PIC 023         DRAGONS2PIC 024
003 FREE SECTORS        DOOM    PIC 026         LINCOLN PIC 022
                        ARTIST  PIC 035         BOND    PIC 016
DOM 24B1                STORM   PIC 025         SCOOBY  PIC 010
CONCERT AMS 157         SPOCK2  PIC 013         LDK     PIC 025
AMNRFG  AMS 079         SPOCK1  PIC 021         FWA     PIC 018
CFUGUE  AMS 032         LDK     PIC 025         TURBO   PIC 071
TRUMPET AMS 044         KLINGON PIC 017         SHDGIRL PIC 067
FINALE  AMS 063         CASTLE  PIC 016         004 FREE SECTORS
DMINRF  AMS 029         LANDING PIC 029
GAVOT1  AMS 028         ENTRPRIZPIC 014         DOM 27A1
FANTGMAJAMS 075         BOZO    PIC 027         MDISK   DIR 041
HACHET  AMS 045         BOZODISKPIC 010         CARDS   BAS 084
JIG3    AMS 064         WEIRD   PIC 025         XMASSONGBAS 093
SARAAMINAMS 013         OBNOXO  PIC 024         RECKLESSBAS 050
000 FREE SECTORS        JTARI   PIC 009         HOMEUTL BAS 169
                        VADER   PIC 029         HOOKEYB BAS 054
DOM 24B2                DALLAS  PIC 016         HOLYNITEBAS 047
AM2     DOC 007         HORSE   PIC 034         TEXTEDITBAS 045
AGITATO AM2 212         CITY    PIC 022         041 FREE SECTORS
FANTASIAAM2 064         CONVERT BAS 029
AIRVARATAM2 090         LILSAL  PIC 006
ECHO    AM2 074         SHIP2   PIC 018
HILBLUESAM2 024         SHIP1   PIC 031
PEGGYSUEAM2 073         CIGAR   PIC 012
BUMBLEBGAM2 038         019 FREE SECTORS
SGRBLUBGAM2 024
WALKLINEAM2 016         DOM 26A1
002 FREE SECTORS        BOPOTRONBAS 078
                        BOPCONSTBAS 037
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DOM 27A2
INFOBITSBAS 014
    1G         080
    JGUEN      150
FLIGHT         092
ELEPHANT       069
QUEST     32K 185
TARGETS BAS 031
ENEMY    BAS 017
INFOBITSTXT 010
MAIL     BAS 012
008 FREE SECTORS

DOM 28A1
WEATHER BAS 038
BIFFDROPBAS 086
KEYCLICKBAS 007
SAVER   BAS 010
BASICKEYBAS 015
BASICKEYSRC 030
WINDOWS2SRC 037
WINDOWS2BAS 027
MINER   BAS 039
BANNER  BAS 029
ANDROTONLST 060
ANDROTONEXE 084
GEOQUIZ BAS 091
039 FREE SECTORS

DOM 28A2
JTERM38 BAS 068
AUTORUN SYS 001
PRUFREADBAS 008
TYPO2   BAS 009
BBSNUMB TXT 046
ASTRON  BAS 136
ASTRON  TXT 017
JTERM38 TXT 015
TYPO    TXT 007
   TY8  BAS 110
        BAS 016
HAMURABIBAS 038
STATES  BAS 060
HEARTS  BAS 036
QUATRAINBAS 057
002 FREE SECTORS

DOM 29A1
CHESS   DOC 017
QT      BAS 097
POPCORN BAS 078
POPCORN BIN 029
CHESS   BAS 081
ROBOT   BAS 060
DARK    BAS 085
KOOKQUSTBAS 120
SPELLINGBAS 014
011 FREE SECTORS


DOM 29A2
AUTORUN SYS 025
DISKIO  BAS 064
SEARCH  LST 014
HOMELOANBAS 108
MUSFLASHBAS 044
PALETTE BAS 051
CUPID   BAS 029
BLONDELLBAS 095
GUITUNERBAS 011
VALENTINBAS 013
SCRAMBLEBAS 075
CRYPTO  BAS 055
HIGHSEASBAS 080
BLONDGAMDAT 004
000 FREE SECTORS

   30A1
    TISLBAS 194
ADVENTX5BAS 101
CALORIESBAS 043
VANDADV BAS 101
ERRORMSGBAS 029
THIEF   BAS 070
MICRODOSBAS 044
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044 FREE SECTORS

DOM 30A2
DOS     SYS 039
DUP     SYS 042
ATHFNT  SYS 002
CUSTOMGPBAS 054
CUSTOMNPLST 008
JERRY   FNT 009
JIGSAW  FNT 009
COMPUTERFNT 009
GREEK   FNT 009
HEBREW  FNT 009
HIERO   FNT 009
MATH    FNT 009
FANCY   FNT 009
CHEMICALFNT 009
NORTH   FNT 009
SOUTH   FNT 009
GOTH    FNT 009
STOP    FNT 009
ROMAN   FNT 009
OLDE    FNT 009
OUTLINE FNT 009
RED     FNT 009
ADVENTURFNT 009
ARCHAIC FNT 010
FLATFOOTFNT 010
UNDERLINFNT 010
CURSIVE FNT 009
FONTDSPLBAS 010
FONTLOADLST 003
FONT    BAS 077
FONTMAKEBAS 110
FONTFX80LST 009
CURSIVE2FNT 009
BLOCK1  FNT 009
BLOCK2  FNT 009
EPSTAN  FNT 009
DISKPRT     003
DIGITAL FNT 009
CUSTOM  DOC 032
AWFNT   DOC 018
AUTORUN SYS 002
SEQDOS  BAS 015
MAKE    FNT 019
005 FREE SECTORS

DOM 31A1
DRAGONLRBAS 135
MAXICOPYBIN 009
ZURK    BAS 069
ACROBAT BAS 103
INFOBIT2BAS 024
INFOMOD BAS 003
INFOBITSTXT 016
ELIZA   BAS 076
MONEYMATBAS 062
SECURITYBAS 076
053 FREE SECTORS

DOM 31A2
GRAPH   BAS 116
AUTORUN SYS 002
START       010
MENU        019
UTILITY     064
CHECKBOO    096
CHECKPRT    067
CHECKBAL    058
DATEBOOKBAS 084
DATEDOC BAS 017
CALENDARBAS 031
MAILLISTBAS 088
053 FREE SECTORS

DOM 31B1
WRDSCRAMBXL 097
WRDSCRAMDOC 044
ADDRESS1    051
BUDGET  BAS 051
BG1985      015
BLAKJACKBAS 073
BACH    BAS 044
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MONSTER BAS 139
BANNER3 PTR 025
COLOCHOS    045
005 FREE SECTORS




DOM 31B2
AUTORUN SYS 002
START       010
MENU        019
UTILITY     064
CHECKBOO    096
CHECKPRT    067
CHECKBAL    058
352 FREE SECTORS

DOM 32A1
RAMDISK COM 009
DOS25   DOC 165
AUTO850 SYS 001
KERMIT  DOC 037
KERMIT  BIN 168
AUTORUN SYS 002
DIRECT      035
COPY32  COM 056
SETUP   COM 070
DISKFIX COM 060
SPSCRIPTTST 005
020 FREE SECTORS

DOM 32A2
CLUE    BAS 070
SPSCRIPTBIN 067
DODGER  BAS 048
HIGHLOW BAS 036
ATARIBBSTXT 049
BOULDER BAS 053
ARENA   BAS 056
BURGER  BAS 062
MHD     ML  009
BURGER  BIN 009
PREPBURGBAS 072
RUNAUTO BAS 017
PULSE   BIN 037
043 FREE SECTORS

DOM 33A1
COPY32  COM 056
SETUP   COM 070
DISKFIX COM 060
RAMDISK COM 009
DISKIO  DS2 025
CALENDARBAS 096
ROUNDUP BAS 081
LUNAR   BAS 115
COSMIC  BAS 027
WEBSTER BAS 067
022 FREE SECTORS

DOM 33A2
AUTORUN SYS 025
XIO41   BIN 007
XIO41   DOC 014
V       BAS 012
MSCOPE  BIN 085
TSCOPE  DOC 073
ROTO    BIN 091
AMODFIX LST 004
PROBJ   BIN 067
PROBJ   DOC 096
DRDADVN BIN 084
V       OBJ 002
108 FREE SECTORS

DOM 34A1
RAMDISK SYS 009
LAZERTYPBIN 039
DIRECT      035
AUTOWORDSYS 109
AUTORUN BXL 055
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WORDLISTDAT 001
SENTENCEDAT 002
MUSICIANBAS 125
MAKCLOCKBAS 023
SETCLOCKBAS 010
BLINE    BIN 005
REVIVE   BIN 002
LOANSHRKBAS 048
ZPLOTTERBAS 048
COLOR256BAS 024
MORSE    BAS 023
STING       001
075 FREE SECTORS

DOM 34A2
DRAW         033
SHOW         030
SAMPLE       006
RANDOM       010
TRIANGLE     010
TRIANG2      012
COLOR        004
AUTODRAWSY   003
GRAPH        009
SINES    BAS 006
PLOT     LGO 019
ZPLOTTERBAS 048
DIR1020  BAS 010
SOLIDS   DOC 068
SOLIDS   BAS 078
BUTTRFLYDAT 030
CHIP     DAT 009
TIEFGT   DAT 013
XWING    DAT 014
ADJSTP   DAT 010
SOLIDMODBAS 067
LBL1020  BAS 017
VCWPLO   BAS 035
PM1020   BAS 028
BOLD     BAS 003
BANRDEMOBAS 017
IMPOSSI BLE  005
1020DISKTXT 032
000 FREE SECTORS

DOM 35A1
AUTORUN  SYS 002
DIRECT       035
BACKTRAKBIN 116
MANEUVERBAS 088
VALIANT      074
DINO         010
DINOSAURBAS 088
BASIC    BIN 068
BUGFIX   BAS 021
HACKERS  AID 059
C        COM 007
DATALINEBAS 037

DOM 35A2
RAMDISK  SYS 009
AUTODIALNUM 003
AMODEM70BAS 191
AMOD70   AUT 033
BBSNUMB  DAT 044
PROTERM  AUT 030
PROTERM  BAS 154
SPACECAVBAS 087
SECRET   BAS 068
ATARIBBSADM 003
036 FREE SECTORS
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DOM 36A1
ALLEYCATAMS 020
ALBMLEAFAMS 032
READMINDAMS 017
OVRRNBOWAMS 048
ICECSTLEAMS 029
SYNCOPATAMS 048
PRNTSHOPBIN 105
COPY130  BIN 011
MUSICPLYBIN 039
PRNTDRVRBAS 073
CRICKETSBAS 093
SMURF    PSF 006
SLATE    PSF 005
UNICORN  PSF 006
PHONE    PSF 005
COW      PSF 005
ATARI800PSF 005
COOKIE   PSF 005
GARFLD   PSF 005
BIKE     PSF 006
LUVBRD   PSF 006
MICKEY   PSF 006
CHIP     PSF 005
048 FREE SECTORS

DOM 36A2
T1030V42RUN 140
T10V4DOCTXT 113
RHAND2   AUT 023
KOLDUMP  BAS 064
INDIANA  PIC 042
BIKINI   PIC 032
BISMARK  PIC 037
SHAMPDMNPIC 051
LIFTOFF  PIC 034
JT       PIC 024
WOMAN    PIC 019
WINDOCATPIC 043
006 FREE SECTORS

DOM 37A1
DRAGON   BAS 100
ELEVATORBIN 018
WARRIOR  BIN 017
CATCH    BAS 065
MUSORQA  BAS 036
STYPO2   BAS 013
AUTORUN  SYS 023
CV3TO2   BAS 027
NDUPBA   BAS 020
NDUPBA   DOC 014
CV3TO2   DOC 013
RHAND2   BIN 023
AMODEM70BAS 191
CIRCLES  BAS 028
GLOBE    BAS 015
GLOBEMOVBAS 015
010 FREE SECTORS

DOM 37A2
PROTERM  AUT 030
COMBAT   BAS 217
HANGQUOTBAS 064
SPEDREADBAS 043
GUITAR   BAS 071
VOLEYBALBAS 079
085 FREE SECTORS

DOM 38A1
AUTORUN  SYS 030
DISKIO   BAS 105
RHAND3   BIN 022
RAFFERTYBAS 073
NIGHTSH  BAS 101
LEMONADEBAS 042
ASYLUM   BAS 041
WITCHINGBAS 055
SKYSCAPEBAS 112
KEYMAC   BAS 013
034 FREE SECTORS

DOM 38A2
EXPRESS  BIN 230
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EXPRESS  DOC 144
HIDESEEKBAS 069
BONK     BIN 029
TURTLE   BAS 059
060 FREE SECTORS

DOM 39A1
AUTORUN  SYS 030
CREATOR  DIR 009
MASTER   DR1 054
MASTER   DR2 065
LASER    BIN 020
LOADLSR  BAS 004
RENUMBERBIN 009
DSASMDOCTXT 043
DSAS6502BIN 077
INCOMI   BIN 095
LOGOPAK      026
BANJO    BAS 035
YOGA     BAS 035
VAMPIRE  BAS 054
036 FREE SECTORS

DOM 39B1
AUTORUN  SYS 030
MYRIAPEDBIN 107
ASSAULT  BAS 094
SPECDLIVBIN 201
RMDSK2   BIN 007
RMDSK2   DOC 043
BUZZZAP  BAS 042
LIVEWIREBIN 037
CARDFILEBAS 034
RAMDISK  SYS 009
024 FREE SECTORS

DOM 39B2
AUTORUN  SYS 039
HOLYNGHTAMS 024
FRSTNOELAMS 010
JOYWORLDAMS 010
INAMANGRAMS 013
LITLETOWAMS 010
GREMSLVSAMS 011
GOORSTYEAMS 012
SLNTNGHTAMS 008
ANGLONHHAMS 011
HARKANGLAMS 011
MIDNIGHTAMS 010
WE3KINGSAMS 010
CMFTHFULAMS 010
AVEMARIAAMS 035
NEEDXMASAMS 036
JLYSTNIKAMS 008
DNTBLATEAMS 033
WE3KINGSAMS 010
SLNTNGHTAMS 008
RUDOLPH  AMS 041
CMFTHFULAMS 010
SNTACLASAMS 009
NIB4XMASAMS 010
MOM4XMASAMS 014
DAYSDONEAMS 036
SLVRBELLAMS 027
LTITSNOWAMS 041
XMASSONGAMS 042
DECKHALLAMS 010
INAMANGRAMS 013
FRSTNOELAMS 010
XMASTREEAMS 009
TOYLAND  AMS 012
HOLYNGHTAMS 024
001 FREE SECTORS

DOM 40A1
RAMDISK  SYS 009
REMOVER  LST 009
TIME     BAS 020
TIME     BIN 002
TIMEDEMOBAS 004
SNEAK    ACT 117
CONVERT  BAS 078
CODEWRITBAS 031
CODEWRITBIN 007
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BOXIN    BAS 028
HALLEY   BAS 103
HIDESEEKBAS 070
ATRAIN   BAS 067
083 FREE SECTORS

DOM 40A2
AUTORUN  SYS 030
SOUNDS   BAS 036
CHOICE   BAS 069
ERAMDISKDOC 069
ERAMDSK1BIN 009
ERAMDSK2BIN 009
POETRY   BAS 039
CESDEMO  BIN 151
VULTURESBAS 081
PACINV   BAS 045
BACHMUS  BAS 019
071 FREE SECTORS

DOM 41A1
EXPRES21BIN 263
EXPRES21DOC 033
LIFEINSUBAS 054
RAMDISK  COM 009
COPY32   COM 056
DISKFIX  COM 057
SETUP    COM 070
CONFIG   EXP 001
FORMAT   BAS 013
FRACTALSBAS 010
DCHECK2  LST 024
PHONE    LST 002
041 FREE SECTORS

DOM 41A2
AUTORUN  SYS 030
MAZEWAR  BAS 113
MAZEWAR  EXE 045
LOADIT   BAS 055
BOOKKEPRBAS 087
BOOKKEPRDOC 065
FUJIBMCEBIN 163
BIO      BAS 030
LABELS   BAS 031
TYPO2    LST 009
000 FREE SECTORS

DOM 42A1
SUPRPONGBAS 057
SUPRPONGBIN 020
DEBUG    BIN 048
SPEDCALCBIN 070
UNICHCK  BAS 031
CLASH    BIN 043
ALIEN    BIN 033
IRA      BAS 036
VISIPLOTBAS 053
PLOTDATABAS 008
BOOTSTUFBAS 054
SOFTKEY  BAS 028
VISITEST     001
109 FREE SECTORS

DOM 42A2
QDOS     SYS 036
CONFIG   SYS 012
QDUP     SYS 012
DISKUTILCOM 066
QHELP    COM 012
GOBASIC  COM 018
READDOS2COM 012
READDOS3COM 018
REDIRECTCOM 012
SETPARAMCOM 030
RS232C   COM 012
QDOSEQU      018
QHELP    DAT 426
024 FREE SECTORS

DOM 43A1
AUTORUN  SYS 042
BARBOZ   BAS 168
ROCKSLDEBAS 063
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MESTER   MSB 019
 CRUNCH  DOC 031
 CRUNCH  BIN 036
UNSCRUNCBIN 041
RAMDISK  COM 009
COPY32   COM 056
SETUP    COM 070
DISKFIX  COM 057
036 FREE SECTORS

DOM 43A2
ATARLOGOBAS 034
AUTORUN  SYS 042
EXPRS850AUT 249
EXPRS850DOC 181
AVALNCHEBAS 107
015 FREE SECTORS

DOM 44A1
AUTORUN  SYS 009
HICKRY   BAS 031
GSIQ     BAS 040
MLEDIT   BAS 024
ATMO     BAS 050
CALENDARBAS 051
ROCKSLDEBAS 063
POSTRMKRBAS 029
GARDEN   BAS 071
DICE     BAS 032
CHARDISPBAS 041
BSWTCH   BIN 004
CHARDISPDOC 027
CHARDISPINT 012
BITCHECKOBJ 001
MACASSEMDOC 044
HEXCON   BAS 023
076 FREE SECTORS

DOM 44A2
 TORUN   SYS 023
 ON3     AMS 191
BRAND6M3AMS 154
BRAND5M1AMS 074
INVENT4  AMS 020
MUSETTE  AMS 017
BRAND1M3AMS 124
PRELUDE  AMS 059
008 FREE SECTORS

DOM 45A1
STORE    DAT 007
BSWTCH   COM 004
INVTRY   BAS 150
PASSWORDLST 043
PASSWORDAUT 001
AUTORUN  SYS 009
AUTOXDOC     015
AUTOS    BIN 011
AUTOD    BIN 011
SHOPEDITBAS 018
SHOPPER  BAS 080
MIAMI    BAS 072
GPRINT   BAS 029
DIVER    BAS 095
TESTER   BAS 038
010 FREE SECTORS

DOM 45A2
HOMBUDGTBAS 060
AUTORUN  SYS 002
PERFINANBAS 181
AMORTIZEBAS 040
MORTGAGEBAS 038
CLIMBER  BAS 073
DARKHORSBAS 099
MISSMATHBAS 074
026 FREE SECTORS

 JM 46A1
AUTORUN  SYS 001
LAZYLOADBAS 038
ARTMAKERBAS 035
DESERT   BAS 067
RLE      BIN 042
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RLEMAKE  BAS 032
BUILD    BAS 017
JULIAN   BAS 053
BOMBSQU  BAS 116
RECIPE   BAS 166
RAMDISK  COM 009
052 FREE SECTORS

DOM 46A2
WEATHER  BAS 066
MPPEXP   DOC 185
MPPEXP   BIN 271
RINGDETCTXT 026
MATHART1BAS 040
MATHART2BAS 041
041 FREE SECTORS

DOM 47A1
HEXWAR   BAS 118
TROLL    BIN 023
BLAST    BIN 033
TITANIC  BAS 182
BUMBLBEEBAS 041
DECIDE   BAS 079
CRZY8    BIN 085
RAMCOPY  BAS 022
TREE     DAT 003
005 FREE SECTORS

DOM 47A2
RBIN1030BIN 020
VT10XL   BIN 082
LBASIC   BIN 051
VT10XLD  TXT 069
BASRENUMBIN 022
MASRENUMDOC 050
FSTFIL   BAS 028
KOALAPLTBAS 051
FILEMSTRBAS 096
RAQUEL   PTR 072
BATGIRL  PTR 048
039 FREE SECTORS

DOM 48A1
WOFSCR   DOC 152
LAUNCH   BAS 075
EARTH    BAS 081
CHECKRS  BIN 058
TRAP     ACT 010
CRC1980  AMS 103
TRON     BIN 087
025 FREE SECTORS

DOM 48A2
AUTORUN  SYS 004
TROPHY   DAT 062
WHEEL    DAT 062
WHEELOF  FTN 155
PUZZLE   1   029
PUZZLE   5   031
PUZZLE   2   030
PUZZLE   3   029
PUZZLE   4   031
PUZZLE   9   029
PUZZLE   6   030
PUZZLE   7   030
PUZZLE   8   032
074 FREE SECTORS

DOM 49A1
MOONLORDBAS 129
MOONLORDFNT 009
MOONLORDML  001
DZONE    BIN 059
EDITORIILST 029
MODESEL  BAS 059
MODESEL  OBJ 001
MODESEL  INT 012
MODESEL  DOC 027
PCODES   TXT 067
RAMD256  BIN 009
RAMD256  DOC 027
CANON    AMS 050
EXPCOM   BIN 032
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AXELF    BAS 044
036 FREE SECTORS

DOM 49A2
EXPRESS  0   258
EXPS3    DOC 152
SCOPY    BIN 023
SPELLER  OBJ 037
SPMAINT  OBJ 023
DATABASEBIN 065
DISKFILEOBJ 009
DISKFILEBAS 047
014 FREE SECTORS

DOM 50A1
TEXTPRO  CNF 001
TEXTPRO  COM 089
TEXTEDT1HLP 005
TEXTEDT2HLP 004
TEXTEDT3HLP 004
TEXTEDT4HLP 005
TEXTMAC  HLP 006
TEXTMENUHLP 004
TEXTPRT1HLP 005
TEXTPRT2HLP 005
TEXTSPE  HLP 007
TEXTPRO  MAC 006
ASM      TXT 015
BLUE     TXT 013
CFORMAT  TXT 016
FASTC    TXT 005
FLOAT    TXT 010
PRINTF   TXT 014
READTHISTXT 075
RAMDSKXLBIN 005
APSDOS   BAS 045
SPEDCALCBIN 070
PCPATCH  BAS 007
AUTORUN  SYS 002
DIRECT       035
180 FREE SECTORS

DOM 50A2
ACEC     COM 121
CFORMAT  COM 023
CONFIG   COM 006
EOLSTRIPCOM 033
FASTC    COM 033
LINK     COM 035
RD       COM 012
SCOPY    COM 029
TDLINE   COM 012
ENGINE   OBJ 040
ACECIO   C   058
CFORMAT  C   058
COMPACT  C   011
FILECMP  C   009
GRAPHICSC    034
PMDEMO   C   018
PRIME    C   006
ACECIO   CCC 011
GRAPHICSCCC 015
ENGLOAD  OBJ 002
062 FREE SECTORS
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A Antic On-Line

ANTIC '86 COMDEX REPORT:
The First Day

by DeWitt Robbeloth,
ANTIC Executive Editor

Las Vegas - Nov. 10, 1986

COMDEX, the international computer
exposition run by The Interface Group,
opened a five-day stay here today with
1,300 exhibitors and 50,000 "trade" folk
attending. The event filled the huge Las
Vegas Convention Center and spilled over
into four major local hotels. The crowd
seemed optimistic and energetic as it
surged through the aisles.

Casual eavesdropping often caught the
two letters "ST" floating on the COMDEX
air. People are again excited about
Atari, and this time it's about
computers, not game machines. This
report and others through the week will
cover the latest Atari developments.

Atari Corp. set up its crowded COMDEX
exhibit near the entrance to the main
hall of the Las Vegas Convention Center.
Atari occupied a rectangular island
measuring about 30 by 75 feet. In that
area it crammed not only its own products
but those of 65 selected third-party
developers. Things got so crowded that
some of Atari's exhibitors had to take
turns using the display space at one of
the 40 minibooths.

ATARI HARDWARE

In the hardware line Atari showed its
new 1200 baud, Hayes-compatible modem,
the SH212, and the new 80-column card,
XEP80, for the XL/XE 8-bit computers.
The long-awaited ST blitter chip was
demonstrated running some sensational
graphics. It is to be released early in
1987 as a $120 upgrade, piggybacking on
new ROM chips

The SH212 modem is another
price/performance breathrough for Atari.
This fully Hayes-compatible 300/1200 baud
external modem retails for $99.95. It
has an industry standard RS-232 interface
port, making it plug-compatible with
virtually all computers. Other features
include internal speaker, autodial via
pulse or tone, auto-answer, and full Bell
212A compatibility. Expect to see it in
the stores around the first quarter of
1987.

According to Atari president Sam
Tramiel, Atari is bringing its philosophy
of "Power Without the Price" to the wider
peripheral market. That punchy motto may
be on its way out though -- one Atari
press release says the new tag line is
"Technology So Advanced It's Affordable."
Perhaps those words are only for the
business market, to which Atari has
assigned long-time Tramiel associate Sig
Hartmann.

The XEP80 is an 80-column board for
the Atari XL and XE 8-bit computers. It
costs $79.95 (a dollar a column, says
Atari's John Skruch, Associate Director
for Computer Software). The XEP80 plugs
into a joystick port and requires a
monochrome monitor or black-and-white TV.
Although no major word-processor programs
now support 80-column format for the
8-bits, Skruch says that PaperClip, by
Batteries Included, and AtariWriter Plus,
by Atari, are being adapted for that
purpose.

ICD 8-BIT POWER

Another 80-column board for the 8-bit
XL/XE computers was introduced here by
ICD, Inc. of Rockford, Illinois. This
board costs $99.95 and can only work as a

piggy-back add-on to the company's Multi I/O external interface box for the XL/XEs. However, this card operates in 16 selectable colors (or monochrome) and requires no RAM from the computer.

Multi I/O itself provides five valuable functions: RAMdisk (256K or 1 megabyte), parallel printer interface that accepts standard 850 cables, a serial printer/modem interface with the 850 handler built-in, a spooler, and a hard disk interface that supports up to eight SASI or SCSI controllers simultaneously -- using either 5 1/4-inch or 3.5-inch hard drives. Multi I/O costs $199.95 in the 256K configuration and $349.95 for 1 meg.

Another ICD product is the R-Time 8, a battery-powered real-time clock for the Atari 8-bit. It plugs into the cartridge port and works with or without Multi I/O. R-Time 8 costs $69.95.

Machines equipped with Multi I/O can be networked within 50 feet to share hard disks, printers and files using the company's proprietary SpartaDOS.

MICROSOFT WRITE

On the software side, Atari showed and announced its word processor for the ST called Microsoft Write. This package, to be shipped late this year, is a direct port by Microsoft of its Macintosh Word, Vers. 1.05. It makes full use of type fonts, including proportionally-spaced fonts, and many special features pointing towards desktop publishing with a laser printer. Insiders expect Atari to offer an affordable laser printer in 1987. Microsoft Write will retail for $129.95 when it ships late this year.

ARRAKIS EDUCATIONAL

Apparently Atari will be building up the software side of its business, according to an announcement by Sam Tramiel at Atari's party held this evening at Caesar's Palace. Among the programs offered will be a series of

educational programs for junior high schoolers. These were designed by Arrakis Software of Canada and include 17 modules on algebra, trigonometry, geometry, statistics, biology and physics. Although other educational programs are available for the ST, few address the needs of this age group, who comprise about 60% of personal computer users, according to John Skruch.

CHRISTMAS SOFTWARE PROMO

Atari announced a cooperative ST software promotion to run through December. It has mailed coupons to ST dealers which will be given to the customer at time of purchase. Each company controls the discount, rebate or free merchandise offered by its coupon. The Catalog from Antic has a typical offering. Buy Flash, CAD-3D, A-Calc, Expert Opinion, or Maps and Legends and receive any of the following programs for $5 each: Disk Doctor, COLR Object Editor, Star Struck, Red Alert, A-RAM, A-Seka, Murray and Me or Mom and Me. The offerings of the other participants are listed at the end of this article.

Commenting on the promotion, Michael Katz, Atari Executive Vice President, said, "We feel this will serve as a great incentive to the consumer to purchase ST software and will help our ST dealers generate profitable, new and continuing software sales."

FIRST WORD PLUS

That free bundled software with purchase of an ST is a thing of the past was confirmed by Atari's new Director of Software Sales, Richard Frick. "Only ST BASIC will come with the computers now. 1st Word has been improved and will sell as a product called 1st Word Plus." He was demonstrating the ability of this word processor to incorporate graphics with text at the show.

Atari claims there are now more than 700 software titles available for the ST computers, but admits that many of this

number are updates or enhancements of earlier versions of programs available for the ST.

Antic Publishing identified more than 300 unique commercial ST programs in its winter issue of START -- the ST Quarterly, which will be on the newsstands Dec. 1. The December issue of Antic Magazine identifies more than 100 more products designed for the 8-bit Atari computers.

As one of Atari's third-party developers, Antic Publishing showed its products from The Catalog, especially CAD-3D with Tektronix's 3-D glasses. This combination enables true 3-D viewing of full-color animated onscreen images.

SOFTWARE OFFER DETAILS

ACTIVISION -- Offering a $12 rebate on PaintWorks or Music Studio; Hacker and 14 other games, get rebate and free demo disks.

ATARI -- Buy DB Master One, get a free box of 5 double-sided disks; buy DB-Man and get GEM version for $25 (a $49.95 value).

BATTERIES INCLUDED -- Buy any of their ST titles and receive free TimeLink or I.S. Talk.

DAC SOFTWARE -- Buy Dac Easy Accounting, get DAC Easy Personnel for 30% off.

ELECTRONIC MUSIC PUBLISHING -- Buy MIDI disk, get a music disk free.

FTL GAMES -- With any software purchase, get free game sampler disk containing demo of four games.

GENERIC -- Buy First CAD ($49.95 value), get 30% off Electronic Symbol Libraries ($24.95 value).

MARK WILLIAMS CO. -- Buy Mark Williams C, get $10 rebate.

MAXTHINK -- Buy Maxthink and get free book on thinking, "Style of Thinking."

MICHTRON -- Buy Mighty Mail or Personal Money Manager and get Your Financial Future (retail $39.95) at half price.

MIGRAPH -- Buy Easy Draw and either Fast ($49.95) or LabelMaster ($39.95) and get a free poster-making program ($29.95 value).

PCA -- Buy The Graphic Artist ($199.95) and get a $5 rebate on any auxiliary product priced from $39.95 to $79.95.

QUICKVIEW SYSTEMS -- Buy Zoomracks II, get a starter pack free ($19.95 value).

REGENT SOFTWARE -- Buy Regent Word II and get a free backup disk, a $10 value.

ROYAL SOFTWARE -- Buy E-Z Calc ($69.95), get Help Calc ($24.95) at half price.

SIERRA ONLINE -- Buy two games, get a third game free (up to $49.95 value). Offer applies to King's Quest I and II, Space Quest and Black Cauldron.

TDI -- Buy Modula II and get Example free (retails for $24.95).

VIP TECHNOLOGY -- Buy Pro Gem and get templates free.

XLEnt -- Buy Typesetter Elite ($49.95 retail) and get Typesetter Utilities, Vol. 1 "The Font Editors" for $9.95 ($19.95 retail).

ANTIC '86 COMDEX REPORT:
The Second Day

Software and peripherals companies have climbed on the Atari bandwagon and are showing new or revised products at Atari's pavilion here at the autumn COMDEX. Sixty-five such "third-party" vendors are showing products that range from business applications to pure fun.

One striking new application is the touch screen technology for the ST by the Video Touch Company of Springfield, Oregon. Demonstrating a real-life restaurant ordering program operated entirely by touch, this company shows how Atari STs can match and even improve on data-entry systems formerly costing much more. The application is flexible both in terms of the kinds of businesses it can serve and the the changes needed periodically to meet new conditions.

The system uses standard ST hardware with monitors modified to include the touch screens. One ST running under the Micro RTX operating system from Beckemeyer Development Tools controls the other STs in the system. The user interface is completely graphic and requires no computer knowledge to operate. New employees learn how to use it in 20 minutes, according to the manager of the Mill Camp restaurant where the system was first installed.

Beckemeyer Development Tools also showed the Micro RTX kernel running with the company's MT C Shell ($129.95) which creates a multi-tasking, multi-user environment for many programs to operate simultaneously.

Other monitor news from the show includes the Monitor Box from JNL Technologies of Oceanside, NY. This box plugs into the video-out port and converts the signal to both composite video and RF. This makes it possible to use monitors other than Atari's brand, plus regular television sets, video recorders, projection TVs and other video equipment. The Monitor Box will sell for $59.95 when shipped in Jan. 1987.

CAD & ANIMATION

Another impressive new program for the ST is Drafix-1, a full-featured, high-performance CAD package ported over from the IBM by Foresight Resources Corp. of Lawrence, Kansas. This program for professional architects, engineers, drafters and other designers actually runs faster on the ST, in some functions, than its counterpart on the IBM. It costs $249.95.

FirstCADD Atari is another two-dimensional drafting and design package intended for the entry level, business or recreational designer. Both color and monochrome modes are supported. The program costs $49.95 and is from Generic Software of Redmond, Washington.

Other software companies showing drafting programs that have been reported on earlier are Migraph (Easy Draw, $79.95) and PCA (Graphic Artist, $199.95). Graphic Artist combines CAD with desktop publishing in that variable type faces can be used with its drawings in a laid-out page to be printed by a laser printer.

Aegis Development Inc. showed its Animator ST program that should be available before Christmas. This program can use any ST drawing as a background, for example NEOchrome or DEGAS, and overlay detailed cels to create an illusion of movement. The program does the tough work of creating intermediate steps. It will also change the shape of one object to the shape of another – say a fish to a dog – or make objects appear to move through color cycling, as in a waterfall or a waving flag. Retail price is $79.95.

Avila Associates of Lafayette, CA, again showed its Animation program called Make It Move, which sells for $49.95.

ACCOUNTING

Execon Business Software of London, England, demonstrated its Accounting

software, part of a larger integrated system for British business. The payables, receivables, ledger and forecasting module has been Americanized and will be available in January for $250. This will be followed by the Invoicing and Inventory modules which will sell for $150 each.

Crystal Software of Merlin, Oregon, introduced Fore*Star, a financial forecasting spreadsheet and general ledger program for business with integrated word processor and report printer -- all in one for less than $100 when it appears next year. Crystal also offers PayDay, a payroll program for small businesses that sells for $69.95.

SBM is an accounts and inventory program from Newell Industries of Wylie, Texas. This program is available for the Atari 8-bit computers or the ST and sells for $99.95.

The incredible accounting software buy for the ST, however, remains DAC-Easy, a complete accounting package for business that costs $69.95. It is available from DAC Software of Dallas, Texas.

At the personal level, Monogram Software has converted its popular Dollars and Sense program from the Macintosh to the ST. This GEM-based mouse-oriented program accepts 120 separate accounts for maintenance analysis, reporting and check writing. The package is ready now and costs $99.95.

MAXTHINK is a new outliner and idea processor for the ST. The size of the outline is limited only by memory, as are the number of topics and levels of detail it can accomodate. Material can be moved about easily. The program retails for $59.95 and is available from MaxThink in Piedmont, CA.

VIDEO DIGITIZERS

MichTron's Video Digitizer Expert (by

way of Pro-Technik of Germany) features 128 gray levels, resolution as high as 1024 X 512 pixels and NEOchrome and DEGAS compatability. Antic first saw this outstanding digitizer in Europe last year and has been waiting eagerly for its availability in the U.S. A lower resolution version, the MichTron Realtizer, quickly digitizes pictures in 320 X 200 resolution with 16 gray levels. The Sound-Expert sound digitizer has a 40kHz sample rate and 8-bit resolution.

A new color video digitizing system for Digital Vision's Computereyes ($249.95) captures images in full color or monochrome from a VCR, video camera or video disk, automatically calibrating brightness, contrast and color balance. All ST graphics modes are supported in a variety of formats. Low resolution takes six seconds to scan and hi-res takes 24 seconds, and images can be saved to files in NEOchrome, DEGAS, etc.

DESKTOP PUBLISHING

Major desktop publishing products for the Atari ST pulled a great deal of focus at COMDEX.

From England, the Fleet Street Editor (about $150) has a complete disk of library graphics and is ideal for newsletters, sales bulletins, restaurant menus and circulars. The two Fleet Street Publisher packages for the ST let you produce multi-page documents with editable page layouts and more, in addition to those features offered at the Editor level. Publisher Level I will be available this spring, and Level II will be ready in the summer.

In all three packages, what you see on screen in what you get on paper. Features include kerning (changing the spacing between characters to make it more pleasing), picture sizing and cropping and output to dot-matrix or laser printers.

XLEnt Software's mouse-controlled and menu-driven TypeSetter Elite ($49.95)

contains 23 built-in fonts and the ability to load custom fonts, and you can underline and outline text and change intensity, copy and move texts, grab entire screens and print a full page, screen dump, free form, index cards, labels or Rolodex cards.

TypeSetter Elite supports both color and monochrome systems, and you can preview your output before printing. A text formatter is provided to move ASCII files into the program.

Coming soon for the ST is LaserType ($279) by Softlab, which takes full advantage of the Hewlett Packard LaserJet+ printer's font downloading and gives you smooth graphics and full typesetting capabilities. Select from 20 different screens and tones for column headings, backgrounds or graphic designing, and control 16 type styles and sizes.

SoftLogik's Publishing Partner ($149.95) gives you type as small as six points and as large as 144, as well as backslant, double underline, mirror and inverse type faces (in addition to such standard faces as bold, italics and underline). You can also reduce, enlarge or cut any DEGAS or NEOchrome picture.

Postscript and several printers are supported, as well as color or monochrome monitors, and additional printer drivers are being released.

PRINTERS

Keep It Smart and Simple with the QMS KISS ($1,995) laser printer, which produces crisp, near-typeset characters at nearly 400 characters per second (cps) -- six pages a minute. Mix as many as 64 fonts on a single page, and combine graphics with portrait and landscape text on the same page.

The Big KISS and Big KISS II (both $2,995) are quiet and fast, also allowing 64 different fonts on a page, 17 of which are built in. The Big KISS has a standard parallel interface, and the Big KISS II has a dual serial/parallel interface. Print eight pages per minute, and 256K can be used to print graphics with single, double, triple and quadruple Epson densities.

The QMS Smartwriter 80+ gives you 19 resident fonts, 75, 150 or 300 dots per inch (dpi), and 2.5Mb of dynamic RAM, allowing you to produce a full legal page of bit-mapped graphics. Also, you can use most software packages that work with your dot-matrix or daisywheel printers.

The LaserImage 2000 ($3,495) from Personal Computer Products gives you near-typeset quality also, and a pop-in cartridge lets it emulate an HP LaserJet+. A second cartridge slot lets you change fonts instantly. The LaserImage 2000 prints full-page, 300 X 300 dpi graphics at 8 pages per minute. Both serial and parallel interfaces are included.

The 24-pin NEC CP6 (80 columns, $860) and CP7 (136 columns, $1,160) are dot-matrix Color Pinwriters that give you eight colors and 360 X 360 dots-per-inch resolution for graphics, and high speed (180 cps in draft mode) and letter quality for text. These quiet printers are compatible with the Epson LQ Series and JX80. COMDEX saw the announcement of option kits including buffer expansion and extra font capability for the CP6 and CP7.

ATARI COMPUTER ENTHUSIASTS

OF COLUMBUS

UPCOMING MEETINGS:

XL/XE

January 12

February 9

ST

January 19

February 12

ACE of Columbus, Newsletter
Warren Lienallen, Editor
1652 Hess Boulevard
Columbus, OH 43212

FIRST CLASS MAIL

To: