

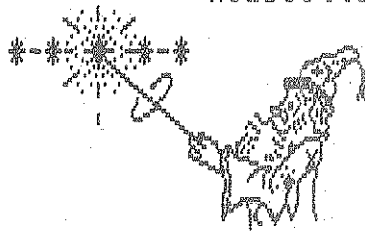
PORT FE

SORCERERS USERS' GROUP

(Toronto)

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SORCERER Newsletter



The Toronto Sorcerer Users' Group was founded in the Spring of 1979, a handful willing and eager to lead members.

This newsletter shall at times keep in mind the goal its conception. To spread the seeds of knowledge.

Articles printed in the newsletter shall be free for all Sorcerer Users' groups to reprint or comment on as they see fit.

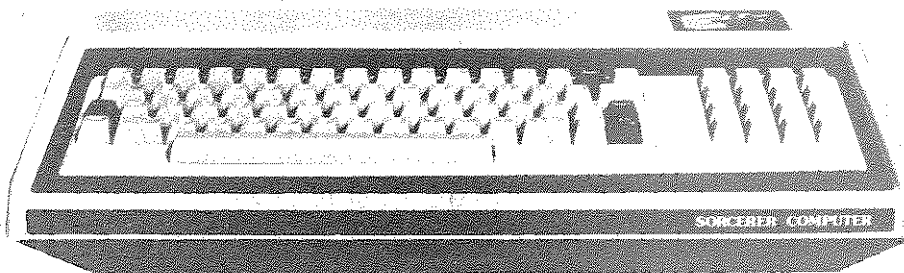
Articles submitted for the newsletter must be in no later than the beginning of the month of every month.

March 1981 ISSUE

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Next meeting will be held at Centennial College
March 13 /81 (Thursday) at 7:00 PM Room 1088
651 Warden Ave. Scarborough, Ont.



Review of Exidy Extended Cassette Basic

As Tony indicated in Port FE (Jan 13/81), Exidy has released a new version of Basic. Implementation is equivalent to MBASIC 5.03/1 for those who have a CP/M based system. Basic is just what the Sorcerer needs to flex its muscles. It is a full version of Micros Basic with extensions for Exidy Hardware.

Moans & Groans

The only really bad thing about the package is that it is around 19K long, so you need at least a 32K Sorcerer to do anything with it. The other problems with it are minor but to be the air, here they are. The Basic is not compatible with PAC Basic in syntax. This Basic requires spaces between keywords since variable names are up to 34 characters in length, all which are significant. EXCAS as it is called will not read a PAC Basic tape, so Exidy provides a utility called RM2EX. (I have no idea what it means.) Basically what it does is take a Basic program and convert it into a format that EXCAS will understand. The program also adds spaces where necessary so that at least the syntax is the same. It then writes the file out to cassette again, so that EXCAS can use the file. The biggest irritant I have found using Basic, is that the USR functions totally differently. No longer do you poke the start of your program, you define it using a statement called DEF USR. Also EXCAS resides from 0100H to 4EESH, so if you want to use existing routines with it, they may need reworking. The last things are also a pain, but I have conveyed the problems to Exidy and these they should be able to fix up. To clear the screen they use the monitor routine at E9B1H which also reads the Exidy defined character set back to normal. They have another function called INKEY which gets a key from the keyboard, but because of the hardware configuration everything stops until you have lifted the key up.

The Good Things

EXCAS has everything that a programmer could dream of. It has a built-in editor which is line-orientated and very easy to use. It has limited (unfortunately) debug facilities which consist of being able to see the line numbers that are being executed currently. It has PRINT USING plus it has an instruction called CURSOR which will move the cursor to an X coordinate that you specify. It also has SERIAL command, so that if you have a serial printer you can send your output to your printer. You have very powerful machine language capabilities. You can do hex and octal arithmetic plus conversions to and from those bases plus the DEF USR statement mentioned above. You can have 10 user routines with DEF USR pointing to different routines. The bad thing about USR is that it only passes one argument but Microsoft added another excellent command called CALL. Basically you can call your routine with as many parameters as you wish, and EXCAS will give you the first two plus pointers to all the rest. Ideal for something like CALL SORT(INFOLIST,"a") etc.

EXCAS supports four data types, real, integer, double and string. There are statements in the language for declaring variable ranges of these types. Integers are especially useful because they help speed up program execution. The double precision variables return 16 digits. Strings are limited to 255 characters. Reals are the same as in PAC Basic.

Another excellent extension to the language is the WHILE ... WEND construct which allows for a more structured environment in programming. Once you start using it, you'll wonder how you ever lived without it.

Here is a list of commands available in EXCAS:-

A. Commands and Statements

AUTO	[<line number>][,<increment>]	BAUD	<integer expression>
CALL	<variable name>[(<i>argument list</i>)]	CLEAR	[,<expression1>][,<expression2>]]
CLOAD	[<filename>] (Loads a program)	CLOAD?	[<filename>] (Verifies a file)
CLOAD*	<array name>	CONT	
CSAVE	<string expression>	CSAVE*	<array variable name>
CURSOR	<x>,<y>	DATA	<list of constants>
DEF FN	<name>[(<i>parameter list</i>)]=<function list>		
DEFINT	<variable range>		(Declares range as integers)
DEFNG	<variable range>		(Declares range as single precision float)
DEFDBL	<variable range>		(Same as above except double precision float)
DEFSTR	<variable range>		(Declares variable range as strings. Means that) (\$ does not have to follow variable)
DEF USR	[<digit>]=<integer expression>	DELETE	[<line number>][-<line number>]
DIM	<list of subscripted variables>	EDIT	<line number>
END		ERASE	<list of array variables>
ERR	(Tells error number of last error)		
ERL	(Tells line number of where error happened)		
ERROR	<integer expression>		
FOR...NEXT		GOSUB...RETURN	
GOTO	<line number>	IF...GOTO	
IF...THEN[...ELSE]			

ON THE NEWS FRONT

In the SORCERER'S APPRENTICE newsletter of January/81 it was recommended that a STANDARD be adopted for Joystick/Keyboard control for future games etc... This is a very welcome thought, resulting in overall compatibility in software. The following have been adopted as standards by ARRINGTON SOFTWARE SERVICE and its representatives in AUSTRALIA. NORTHAMERICAN SOFTWARE will also follow this format.

Two joysticks may be attached to the INPUT of the parallel port. UNIT #1 uses the LOW - ORDER 4 BITS, and UNIT #2 uses the HIGH - ORDER 4 BITS. Each unit may steer in the four basic directions, LEFT, RIGHT, UP, DOWN, as well as in the four diagonal directions. Both units operate independently, and simultaneous operation is permitted.

FIRE BUTTON control may be included, and has priority over directional control of joystick unit it is attached to.

FIRE BUTTON is activated by grounding both BIT 0 and BIT 1 for unit #1 and BIT 4 and BIT 5 for unit #2.

KEYBOARD has priority over JOYSTICK and overrides both joysticks if used. KEYBOARD INPUT RESULT is returned as RESULT CODE of joystick UNIT #1, with UNIT #2 disabled.

Keyboard directional control is via the "arrow" (normally cursor control) keys. FIRE BUTTON on the keyboard is the NUMERIC-PAD '5' key (home). Optional FIRE BUTTONS may be SKIP/TAB or SPACE BAR. FIRE button overrides directional keys on the keyboard.

In the event that both the left and right keys are pressed together, it is treated as NO INPUT. The same rule applies to depressing both UP and DOWN keys together. The UP/LEFT ('7'), UP/RIGHT ('9'), DOWN/LEFT ('1') and DOWN/RIGHT ('3') keys on the numeric-pad are optional.

For programming in Z80 machine code, the 8 bit INPUT RESULT CODE is returned in the 'A' register. No other registers are affected. If there is no input, the 'A' register must contain 00, and the Z-flag must be set.

BIT	PIN	FUNCTION	BIT	PIN	FUNCTION
0	10	UNIT #1 LEFT	4	12	UNIT #2 LEFT
1	22	UNIT #1 RIGHT	5	24	UNIT #2 RIGHT
2	11	UNIT #1 UP	6	13	UNIT #2 UP
3	23	UNIT #1 DOWN	7	25	UNIT #2 DOWN
0 & 1	10/22	UNIT #1 FIRE	4 & 5	12/24	UNIT #2 FIRE
8		GROUND	20		+5 VOLT SUPPLY

From: SORCERER'S APPRENTICE P.O. BOX 1131, TROY, MICHIGAN 48096

Taking a closer look at the above proposed format. Please take note. PROGRAM will have to interpret - SPEED - of movement and also DISTANCE

NORTHAMERICAN SOFTWARE have released this hookup c/w an audio D/A converter on the same printed circuit board. Joysticks plug into DIP sockets on board.

Two programs with audio sound effects are available also.

H.A. Lautenbach NORTHAMERICAN SOFTWARE

Latest From EXIDY

Good news sometimes travels fast, slow or sometimes it never even reaches you but for those of you who are interested in the more sophisticated UTL (Utility) programs, well I can only say hold onto your hats.

Exidy has some rather good programs that have just been released. Some hint of which was in the last issue of PORT FE. I am very glad to report to you these are not mythical as you might think. I have been going over some of those new releases and trying them out. Most of which are oriented more for the programmer and business world. Still this is certainly a step in the right direction.

Here are a few of the many NEW programs being offered by Exidy. By the way they did manage to get the best software from Microsoft nearly all to themselves, and modified for the SORCERER !!!! So here goes.

EXBAS - (MBASIC 5.03) Full disk extended basic	DP 7310
Z80 Disk Development System	DP 7260
EXIDY CP/M full screen EDITOR	DP 7280
EXIDY Precision PRINT driver Routines	DP 7221
CP/M Conversions (Lifboat to Exidy CP/M)	DP 7250
EXIDY ROM PAC BASIC to EXTENDED 19K BASIC	DP 7272
NEW - AUTO BOOT PROM PAC for CP/M	DP 2005

As you can see from some of these programs EXIDY haven't been sitting still during the past months.

EXIDY have now moved into their own new building and are getting back into the swing of things. Wait till you see the NEW SORCERER III. No on second thought better just get in line with the rest and wait your turn.

There are also of course some programs that I'm not even going to mention YET.

H.A. LAUTENBACH

PIRANHA CONTEST

Probably some of you thought it was rather mean of me to just publish half of the Piranha program in the last issue, but as I promised you'll find it in the back of this one.

Have fun trying to get the highest score - to date (high score 311,467) !!!! by me of course. It just seems improbable that anyone will beat my score sigh

If anyone can top that score by April 30/1980 send in a witnessed high score to PORT FE c/o Tony Bagshaw, the highest score will receive one of the new D/A (DIGITAL TO ANALOG) audio cards FREE. (PLUGS DIRECTLY INTO THE PARALLEL PORT)

All entries must be postmarked no later than that date to be eligible. (members only)

H.A. Lautenbach

```

INPUT  [;][("prompt string");](list of variables)
[LET]  (variable)=(expression)
LINE INPUT  [;][("prompt string");](string variable)
LIST   [(line number)[-[line number]]]
LLIST  [(line number)[-[line number]]]
LPRINT (list of expression)
LPRINT USING ("format string")(list of expressions)
MID$( (string exp1),n,(m))=(string exp2)
NEW
NULL  (sint expression)
ON ERROR GOTO (line number)
ON GOSUB (list of line numbers)
ON GOTO (list of line numbers)
OPTION BASE (Set where arrays start, either 0 or 1)
OUT   (sint exp1),(sint exp2)
POKE (sint exp1),(sint exp2)
PRINT (list of expressions)
PRINT USING ("format string")(list of expressions)
RANDOMIZE [(integer expression)] (Randomize RND function)
READ (list of variables)
REM (remark)
RENUM [(new number)][,(old number)][,(increment)][]
RESTORE [(line number)]
RESUME (line number) ; NEXT ; 0 ;
RUN [(line number)]
STOP
SWAP (variable),(variable)
SERIAL
TRON (Turn trace on)
TROFF (Turn trace off)
WAIT (port number),[(I),(J)]
WHILE (expression)
WEND
WIDTH [(LPRINT)] (integer expression)

```

B. EXCAS functions

ABS(X)	ASC(X\$)	ATN(X)	CDEL(X)	CHR\$(I)	CINT(X)	COS(X)
CSNG(X)	EXP(X)	FIX(X)	FRE(0)	FRE(X\$)	HEX\$(X)	INP(I)
INSTR([I],[X\$,Y\$])	INT(X)	LEFT\$(X\$,I)		LEN(X\$)	LOG(X)	
LPOS(X)	MID\$(X\$,I,(J))	OCT\$(X)	PEEK(I)	POS(I)	RIGHT\$(X\$,I)	
RND[(X)]	SGN(X)	SIN(X)	SPACES\$(X)	SPC(I)	SQR(X)	STR\$(X)
STRING\$(I,J\$)	STRING\$(I,J)	TAN(X)				
USR[(digit)](X)						
VAL(X\$)	VARPTR((var name))					

C. BOOLEAN FUNCTIONS

AND OR XOR IMP EQV NOT

There is single stroke entry of the entire language, well sort of, all the functions actually double stroke entry. As you can see, there are a wide variety of commands and sin there are so many, the single stroke entry uses the graphic and graphic-shift to get all t commands. Functions use the same system except that they require graphic-shift-255, then t function designator. The problem with the CLEAR key has also been cleared up. When you h CLEAR and then return, you don't get a syntax error.

The error messages are full messages and when EXCAS detects a syntax error, it jumps in edit mode, so you can correct the problem. The error trapping is excellent, so you can ma literally dummy-proof programs. You can even use the ERROR command to make your own err messages.

Another very important thing about EXCAS is that line can be 255 characters in length wi tabs placed inline so that you cant structure your programs EXCAS, when working with intege rounds them and then takes the integer portion which has some unusual effects in programs. the PAC Basic this does not occur and one place where it becomes a minor irritant is in arr subscripts. It will evaluate the integer and round up causing problems if you are at the ed of the array. The best way to get around this is use INT when you need to convert somethi without rounding. CINT does the same thing except that rounding is forced.

My Evaluations:

I think EXCAS is an excellent piece of software. If you have the memory to use this it wi make life so much more easier. The execution speed is slightly slower than with PAC Basic, b by using integers, you can get around this very easily. The conversion routine works well. T addition of a serial driver to the Basic must mean that Exidy is thinking about the user mor When you get a CRC error, EXCAS will not exit into the monitor, but rather return to the us with a BAD FILE message. The documentation is good as a reference manual, it assumes that yo know how to program in Basic already. The parameter passing to machine language is a littl bit cryptic, but a little playing around yields amazing results. I would recommend thi package very highly to anyone who is thinking of using his Sorcerer for any serio programming work.

CURSORS ... FOILED AGAIN!!!

After scanning thru lots of material to find something to fit on one page, I came across this little nifty program, which was published in the Sorcerer Computer Users of Australia, monthly newsletter of July 1980 by a Ian Macmillan.

He states in the article that a certain John Quirk handed him a slip of paper with the HEX DUMP of a short, clever Z-80 routine that replaces the cursor with a space, or any other character at a Users' Group Meeting sometime in June. In operation, the output vector, normally set to 'VIDEO', is reset to the address of the routine, which does its thing, then calls 'VIDEO' and returns normally. The program is completely relocatable, which means that you start entering the code anywhere in memory without affecting the operation of the program. A convenient area for utility programs is between 0000Hex and 00FFHex, but it is best to avoid locations 0000 and 0001 as these may be clobbered if you have to press <RESET>. The listing given is shown as having its origin at 0050Hex, which is as good a place as any. In this version, the ASCII character replacing the cursor (in this case a space, 20Hex) is to be found in location 0060Hex, which is the first byte in line (d) below.

To enter and use the program:-

- a) Type BYE <CR>
- b) Type EM 50 <CR>
- c) Type FD E5 CD A2 E1 E5 D5 F5 C5 CD 1B E0 CD D6 E9 36 <CR>
- d) Type 20 C1 F1 D1 E1 FD E1 C9 / <CR>
- e) Type SE O=50 <CR>

To restore the cursor ... Type SE O=V <CR>

A disassembly shows PUSH IV, CALL 'GET IV', PUSH HL, DE, AF, BC, CALL 'VIDEO', CALL 'PTRSET', LD(HL),N; POP all registers PUSHed; RETURN.

ONE-LINER PRINTS CHARACTER / ASCII CODE TABLE

The following one line program was published in the Sorcerer Computer Users of Australia, monthly newsletter of May 1980 by Ian Macmillan.

What it does is print out a handy reference chart that can be temporarily incorporated into a program as a tool:

```
1 FOR X=191 TO 32 STEP -1: PRINT X; CHR$(X); SPC(3); NEXT X
```

CUTE GRAPHICS from SORCERER COMPUTER USERS OF AUSTRALIA - JAN 1980

Dynamic bit control in a programmable character enables movement generated in one character cell of eight bytes to be displayed on the screen wherever that character is printed! Here is a listing that demonstrates the possibilities:-

```
10 FOR X=-512 TO -504:POKE X,0:NEXT X
20 FOR X=1 TO 64:PRINT"graphic shift 1";:NEXT X
30 REM That means the one character you get doing that.
40 FOR X=0 TO 7
50 POKE-510,2^X:POKE-511,2^(7-X)
60 NEXT X
70 GOTO 40
```

Well was it worth typing in!

TIDBYTES

For those of you who have the audio card from Arlington or from Northamerican or your own type audio card that takes its information from the Sorcerer parallel connector, try it out on the game called CHASE. You just may be in for a very pleasant surprise.

COMPUTERS ~~~~ VIA ~~~~ COMPUTERS

In today's society, with all of the new types and models of computers emerging from the various manufacturers it seems a pity that one of the foremost linkage methods is not being researched into more heavily. The private industry sector, if it should wish to be able to compete in the near future with a very few large companies that have taken the lead in the development of computer to computer communications via satellite, should investigate this field now.

Don't think for a minute that this is beyond the reach of the normal computer hobbyist. The Canadian Government (DOC) has had a very close interest in Canada becoming a forerunner in this field. It established some two years ago a method by which the computerist can develop and join in. Right now there are approximately two dozen or so active computer hobbyists that have become HAM operators through the DOC'S new class license which they call the DIGITAL OPERATORS LICENSE. This will take the normal hobbyist about six months to a year to get.

This will enable the serious computer hobbyist (one with technical background) to formulate the protocol of computer communications in the years to come. Sounds like this just doesn't happen to the normal individual, well this is very serious and it means that if one gets involved its a new ballgame for that individual.

Upward speeds of 24,000 baud are being practiced by those few, think of how much this will change the mode of operation in the industry.

The old fashioned modem which just isn't practical over long distance on a common line will be a thing of the past within the next TEN YEARS, yes this is in fact the truth. Right now it is just a matter of time. In Geneva a world wide communications regulatory body that meets every 25 Years held the WARAC conference there two years ago to decide which frequencies would be set aside for just this purpose. They decided to set certain spectrum ranges which would be used in the next 25 years aside for computer to computer links.

The main advantage is that from experimental systems that are in use today, it has been determined that 300 users could share ONE frequency channel simultaneously without conflict. This is the equivalent of saying that three hundred companies could use the same piece of wire to communicate with one another simultaneously and everyone not so much as miss one BIT during the exchange of data.

THINK - this is brain food. I will continue this in a future issue.

by H.A. Lautenbach


```

06EF 2020202020 DB
06FD 5048415345PHAMSG DB PHASE 00
0708 FF SCRFLG DB OFFH
0709 3E GOODCAL DB WIDTH-2
070A 00 PHASE DB 0
070B 64 LNEWF DB 100
070C 01 LSIDE DB 1
070D 14 LMINS DB 20
070E 50 LSRNC DB 80
070F 28 LTIME DB 28H
0710 01 LTRACK DB 1
0711 01 LSTRK DB 1
0712 00 LBCNUS DE 0
0713 1607 CTLPTR DW CONTROL
0715 16 DE 2Z
0716 4001026030CONTROL DB 40H,1,2,60H,30H,10,1,50
071E 4801265C30 DB 48H,1,26H,5CH,30H,20,4,75
0726 500124582C DB 50H,1,24H,58H,2CH,30,7,100
072E 580122542C DB 58H,1,22H,54H,2CH,40,10,125
0736 6002205028 DB 60H,2,20H,50H,28H,50,13,150
073E 68021E4C28 DB 68H,2,1EH,4CH,28H,60,16,175
0746 70021C4824 DB 70H,2,1CH,48H,24H,70,19,200
074E 78021A4424 DB 78H,2,1AH,44H,24H,80,22,225
0756 8004184020 DB 80H,4,18H,40H,20H,90,25,250
075E 8804163C20 DB 88H,4,16H,3CH,20H,100,26,255

```

```

0058 = MARKED EQU 58H
0004 = FRATE EQU 4
0001 = MRATE EQU 1
0030 = RDA EQU 80H
E009 = INDAT EQU 0E009H
E015 = INSTAT EQU 0E015H
0049 = PTRK EQU 49H
E003 = MONIT EQU 0E003H
0041 = NOTRK EQU 41H
0017 = VMAXS EQU 17H
0007 = VFAST EQU 7
0085 = VICTIM EQU 85H
0040 = LENL EQU 64
0040 = WIDTH EQU 64
0020 = SCORSP EQU 20H
00C0 = SUBL EQU 0C0H
0000 = BIAS EQU 0
0020 = BLANK EQU 0
0030 = ZERO EQU 0
0000 = BIN0 EQU 0
0001 = ONE EQU 1
0007 = VSYM EQU 7
004F = DEAD EQU 4FH
002A = BOOM EQU 2AH
0012 = FISH EQU 12H
00E1 = BORDER EQU 0E1H
F080 = DTV EQU 0F080H
001E = NLINES EQU 30
F800 = ETV EQU DTV+LENL*NLINES
F800 = STV EQU ETV-LENL+WIDTH
001F = MAXFISH EQU (NLINES+WIDTH)/3
0800 = JUMPS DW 800H
0800 03E0 DW MONIT
0802 8803 DW ESC
0804 0001 DW RESTART
0806 5803 DW UP
0808 6203 DW DOWN
080A 6703 DW LEFT
080C 5D03 DW RIGHT
080E 6C03 DW UL
0810 7103 DW UR
0812 7B03 DW LL
0814 7603 DW LR
0816 8B03 DW HALT
0818 8501 DW STOP
081A 8F03 DW AUTO
081C 3B03 DW RETURN

```

```

081E FF01 CHARS DB OFFH,01H
0820 1B1B DB 1BH,1BH
0822 530D CHARGO DB 'S',0DH
0824 5538 DB 'U',8
0826 4A32 DB 'J',2
0828 4834 DB 'H',4
082A 4B38 DB 'K',6
082C 5937 DB 'Y',7
082E 4338 DB 'I',9
0830 4E31 DB 'N',1
0832 2C33 DB 3
0834 2035 DB 5
0836 502E DB 'F',5
0838 4130 DB 'A',0
083A FF ENDCH DB OFFH

```

```

001C = CHARL EQU
083B 20454E5445STRING DB ENTER NEW VALUES
0855 552D38 DB 'U',8
0858 442D32 DB 'D-',2
085B 4C2D34 DB 'L-',4
085E 522D36 DB 'R-',6
0861 554C2D37 DB 'UL-',7
0865 55522D39 DB 'UR-',9
0869 4C4C2D31 DB 'LL-',1
086D 4C522D33 DB 'LR-',3
0871 482D2E DB 'H-',
0874 502D30 DB 'P-',0
0877 412D2B DB 'A-',+
087A FF DB OFFH
087B 17 VTABL DB VMAXS
087C 85 DB VICTIM
087D 17 VSPEED DB VMAXS
087E 00 VDIREC DB 0
087F 20F4 VPOS DW DTV+LENL*(NLINES-1)/
0881 FTABL DS MAXFISH*6
093B END

```