

The SORCERER'S APPRENTICE

VOL.2

NO.1

APRIL 1980

IN THIS ISSUE-

Serial Interface Works!.....	page 1
Character Generator Program.....	page 4
New Newsletter from Lansing,MI.....	page 4
New Technical Manual Review.....	page 3
Editorial.....	page 3
EPROM PAC.....	page 2
Cassette Tape to Printer Project...	page 2

SERIAL PRINTER INTERFACE WORKS!!!

Larry Stempnik reports the serial printer interface on his new Model II Sorcerer works as advertised at 300 Baud. The first test was to connect a 300 Baud serial printer and use the "P" command in the Word Processor. Text was printed correctly. This did not require any software or hardware changes since the serial printer driver is already in the Word Processor.

The second test was to load the printer driver program on Page 20 of the Sorcerer Technical Manual, First Edition. It was loaded into 0023 through 003A using the Monitor ENTER command. Then the commands SET T=1, SET O=0023, and PP were entered. Basic program runs and listings were printed without modifying the programs. USR(X) calls are not required. Note, the printer does not type the keyboard entries, only the program run or listing.

A detailed procedure is listed below:

```
Connect Sorcerer pin 7 to printer pin 7.
Connect Sorcerer pin 2 to printer pin 3.
CLOAD BASIC program first.
BYE (RETURN)
ENTER 0023 (RETURN)
0023:
  to      Enter driver program in Technical Manual
003A:
003B:/(RETURN)
SET T=1
SET O=0023
DUMP 0020 003F
```

(Memory dump of program should be printed. This is a quick check to verify the printer is connected and operating correctly.)

```
PP(RETURN)
LIST      (Print a listing of the BASIC program)
RUN      (Print output from the BASIC program)
```

NOTE: Extra PRINT lines may be required to prevent overprinting.

CASSETTE TAPE TO PRINTER PROJECT

Larry Stempnik is working on a circuit to convert the 300 baud cassette tape output to a RS232 signal for driving serial printers directly without going through the Sorcerer. Printout so far is about 90% accurate and more testing is being done. Long character strings were printed correctly however, single 1's in a stream of 0's were being dropped.

The objective is to be able to print out listings or text at a place where a serial printer is available without having to bring a Sorcerer along.

The circuit is very simple and only requires 3 integrated circuits to convert from frequency to RS232. Remaining minor circuit problems will be resolved soon. BASIC programs will not print line numbers or commands since they are not coded in ASCII. The Word Processor will print text with line feeds between lines.

EPROM PAC- from Larry Kobylarz

One of the unique features of the Sorcerer is the ability to use the ROM PAC to provide different programs such as the Word Processor or Development Pac. The EPROM PAC is available for users to provide their own plug-in machine language programs. I am interested in using this feature for a business program I frequently use. It would be very handy to plug in the PAC, turn the power on, and have the program up and running without having to go through the cassette loading routine. The program is now written in BASIC and takes up about 10K of memory so it will take me some time to redo it in machine language. In anticipation of this I have purchased an EPROM PAC and I have copied two programs onto EPROMs and both have worked flawlessly.

The first program I copied was on 4 Texas Instruments TMS2716 EPROMs which I had copied on EPROMs of the same type. The EPROM PAC circuit board is designed for these EPROMs so I just plugged them in and PRESTO- instant program. 2708s, 2732s, and other versions of the 2716s (single voltage type) need to have the chip select pins jumpered differently.

The second program I copied was on 4 Intel 2316 type ROMs. I had these copied on Intel 2716 EPROMS (single voltage type). After making the proper cuts and jumpers to the circuit board the PAC was plugged in and PRESTO!- two out of two.

I had a lot of help from the fellows I work with copying the ROMs and EPROMs, and figuring out the jumpering from the EPROM PAC instructions, the Technical Manual schematics, and from an article in the Kilobaud, June '79 by Ken Barbier "What's so Magic about the Sorcerer?" A last word of CAUTION: the chip pin selects that vary from one type of EPROM to another are the voltage and ground signals. So when you make your cuts and jumpers double check and triple check your pinouts. If you put power to the wrong pins you can wipe out all the EPROMs with one shot. At \$ 30 each, \$120 for 4, it's an expensive lesson.

EDITORIAL- by Larry Kobylarz, Editor

It was decided at the last meeting of our Sorcerer Users Club (the club doesn't have an official name as yet) to continue publishing the Sorcerer's Apprentice Newsletter. I was elected Editor and I will be putting together the next few issues of the Newsletter. The philosophy of sharing experiences, information, and talents is still our primary goal. Other policies such as subscriptions, frequency of publication, advertising etc. will be announced in future editions of the Newsletter.

As Editor I will solicit and collect material for the Newsletter, edit it and arrange it for publication, get it printed, and mail it out to you. The material I solicit and collect has to come from you the Sorcerer owners and users. I talked to Steve Guralnick, and he will continue to provide a Word Processing column, Dave Bristor will be a contributor, I hope to continue the reciprocal arrangements with the Sorcerer Users Group in Australia and the Sorcerer Program Exchange Club in England, and I talked to J. Power, Lansing, MI who is putting out a newsletter (see article "NEW NEWSLETTER") and we can reprint news from his publication.

I am not used to being an Editor and I have a lot to learn about putting out this kind of newsletter. Things weren't organized too good for this issue but I wanted to get one out so that you would know we are still in business. Dave Bristor has turned over to me your letters and SASEs. We keep in touch so that anything else sent to him for the Newsletter will get to me.

The next issue will be out about June 1. You know what I need to keep this newsletter going, so send your stuff to:

Larry Kobylarz
3322 Gentry
Howell, MI 48843

NEW TECHNICAL MANUAL REVIEW
from Larry Stempnik

The new Sorcerer II Technical Manual should be labeled "supplement to the first edition". Additions to the first edition are: revised information on memory expansion using the DIP switch and information on the expansion chassis motherboard.

The most important item deleted was the RS232 printer driver program. This is very important material for users like myself with serial printers available. It is not listed anywhere else that I know which leaves the new owner out of luck. Also deleted is the power input, transformer and filter circuits as well as the keyboard and ROM PAC schematics.

My overall impression is the deleted material was far more useful than the few new items added.

NEW NEWSLETTER FROM LANSING, MI

The second issue of a new newsletter put out by Joseph R Power, Lansing, MI is now available. I got a copy of the first issue from Dave Bristor and it contained some interesting items. One of the programs listed in it is reprinted in this newsletter. Another program listed, in his newsletter, is a machine language game of "LIFE". It produces about 5 generations per second and uses the whole screen.

Joe is interested in getting Sorcerer users together in the Lansing area. Anyone interested in his newsletter should send a SASE for a complimentary copy. Send to:

Joseph R Power
800 W. Lenawee, Apt 19
Lansing, MI 48915

CHARACTER GENERATOR PROGRAM

This program written by Joseph R Power is reprinted, with his permission, from his first newsletter (see article "NEW NEWSLETTER"). The newsletter includes an article about user defined graphics.

The program will aid the user in creating graphic characters by providing a large scale grid, editing cursor, the 8 decimal values which define the character and a real size character.

When keying in the program make sure the PRINT statements are keyed in exactly as shown or else the cursor will not track properly.

The @ represents the editing cursor. The arrow keys on the numeric pad will move the cursor around and the 5 key will toggle the dot to "print" or "not print". Pushing the 0 key will clear the screen.

When you are satisfied with the character on the grid pushing the = key will display the 8 decimal values defining the character and the character itself, real size.

NOTE: Lines 110,130,150,170,190,210,230,and 250 use (graphic r,0,0) eight times,then graphic 1.

Lines 120,140,160,180,200,220,240,and 260 use graphic 1 for the vertical lines.

Line 270 uses graphic 0 all the way across.

```

5   REM Copyright (C) 1979 by Joseph R Power
10  FOR Q = 1 TO 7 : READ X : POKE Q,X : NEXT Q
20  DATA 205,9,224,50,0,0,201
30  POKE 260,1 : POKE 261,0
40  PRINT CHR$(12);"Zot's Character Generation Aid" : PRINT
110 PRINT "-----"
120 PRINT "| | | | | | | | |"
130 PRINT "+---+---+---+---+---+---+---+---+"
140 PRINT "| | | | | | | | |"
150 PRINT "+---+---+---+---+---+---+---+---+"
160 PRINT "| | | | | | | | |"
170 PRINT "+---+---+---+---+---+---+---+---+"
180 PRINT "| | | | | | | | |"
190 PRINT "+---+---+---+---+---+---+---+---+"
200 PRINT "| | | | | | | | |"
210 PRINT "+---+---+---+---+---+---+---+---+"
220 PRINT "| | | | | | | | |"
230 PRINT "+---+---+---+---+---+---+---+---+"
240 PRINT "| | | | | | | | |"
250 PRINT "+---+---+---+---+---+---+---+---+"
260 PRINT "| | | | | | | | |"
270 PRINT "-----"
280 PRINT : PRINT : PRINT
290 Q=-3775 : V=1 : H=1 : DV=128 : DH=3 : POKE Q,64
300 X=PEEK(USR(0)) : IF X=0 THEN 300
310 POKE Q,PEEK(Q+1) : Q1=PEEK(Q+1)
320 IF (X=50) AND (V<8) THEN Q=Q+DV : V=V+1 : GOTO 390
330 IF (X=52) AND (H>1) THEN Q=Q-DH : H=H-1 : GOTO 390
340 IF (X=54) AND (H<8) THEN Q=Q+DH : H=H+1 : GOTO 390
350 IF (X=56) AND (V>1) THEN Q=Q-DV : V=V-1 : GOTO 390
360 IF (X=48) THEN GOSUB 1000 : GOTO 290
370 IF (X=61) THEN GOSUB 2000 : GOTO 290
380 IF (X=53) THEN POKE Q+1,32 : IF Q1=32 THEN POKE Q+1,177
390 POKE Q,64 : GOTO 300
1000 FOR X = 0 TO 896 STEP 128 : FOR Y = 0 TO 21 STEP 3
1010 POKE -3775+X+Y,32 : POKE -3775+X+Y+1,32
1020 NEXT Y : NEXT X
2000 PRINT CHR$(17);CHR$(10);CHR$(10);CHR$(10); : GOSUB 3000
2010 FOR X = 0 TO 7 : Z=-3775+X*128 : R=0
2020 FOR Y = 0 TO 21 STEP 3 : R=R*2 : IF PEEK(Z+Y)=177 THEN R=R+1
2030 NEXT Y : R$=STR$(R) : POKE -512+X,R : R$=RIGHT$(R$,LEN(R$)-1)
2040 IF LEN(R$)<3 THEN R$="0"+R$ : GOTO 2040
2050 PRINT" = ";R$;CHR$(10) : GOSUB 3000 : NEXT X : PRINT
2060 PRINT"The character looks like ";CHR$(192) : RETURN
3000 FOR R = 1 TO 30 : PRINT CHR$(19); : NEXT R : RETURN

```

(BLANK FOR USER'S NOTES)
