PORT FE

SORCERERS USERS' GROUP

(Toronto)

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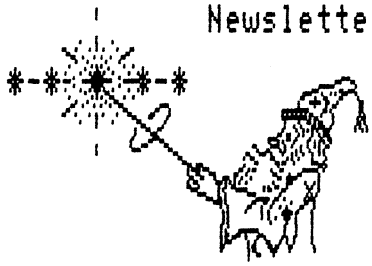
SORCERER

Newsletter



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

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

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

Articles submitted for this newsletter must be in no later than the beginning of the 1st of every month.

October 1981 ISSUE

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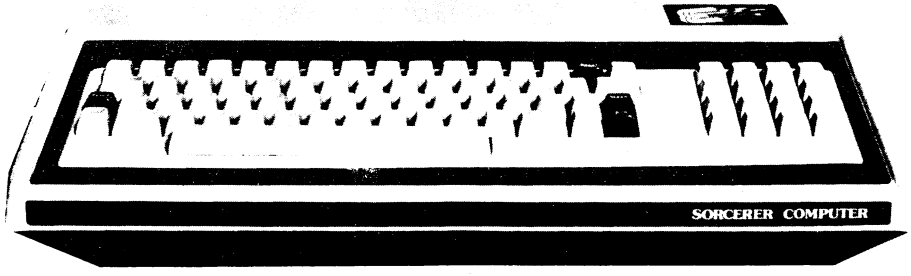
MEETING PLACE

Location : Bathurst Heights Library - Date: October 14 - 7.00 PM
3170 Bathurst St.

One block north of Lawrence on the west side of Bathurst.



EVENTS During the last meeting.

At the last meeting a rather unexpected motion was put to the floor. A Constitution had been drawn up for the club. It was put to a vote, that we adopt this constitution. The person that made that motion was me! Unfortunately this had to be done quickly, due to the lack of time. Our year is nearly up and the new excecutive will be voted 'in' at the November meeting.

We all have had a very good year, but there have been times when there was just too much to do. This is the reason for the new Constitution, we will have to endeavour to recruit more members into an active role. Hopefully the new year will allow a more even distribution of duties regarding club activities. The new Constitution was formally passed in Principle and carried by a majority vote of members present on Thursday September 17, 1981.

The new Constitution will allow for an expanded executive and also for additional committee chairmen to be set up. Once the new Constitution is in its final form copies shall be made available when ready. The new executive of the club shall comprise of the following.:

OFFICERS		COMMITTEES
(a)	President	PORT FE Editors
(b)	Vice-President	PORT FE Publisher
(c)	Treasurer	Software Chairman
(d)	Corresponding Director	Awards Chairman
(e)	PORT FE Director	Membership Chairman

The SORCERERS USERS' GROUP TORONTO shall also be presenting -- (on an International level) -- two AWARDS every year.

1. PORT FE Scholar of the year award.

This award shall be presented to the person whom contributed the most/best articles to PORT FE during the course of the year.

2. Sorcerer program of the year award.

This award shall be presented to the person who has written the most noted program of the year.

There shall also be presented a (members only) award.

3. Outstanding achievment award.

This award shall be presented to the one outstanding member of the club that has contributed more toward any/all of the following:

(a) Time and effort.
(b) Software development.
(c) Hardware development.

The awards chairman shall form a group of judges that shall determine the merits and persons eligible for the different awards. The Outstanding achievement award shall be made by nominations brought before the floor and shall be voted on by secret ballot.

The awards shall be made at the meeting in December.

Nominations for various positions shall be accepted during the meetings in October and November. Trusting as many members as possible shall attempt to join us at these very important meetings.

H.A. Lautenbach

Review --- ENCODE/DECODE for CP/M Files.

I've just had the opporunity to wittness a SAFE being installed on a disk. Yes a safe!!! For those of you who have 'love letters','second set of books','secret programs', 'payroll', or anything at all, this is the best security system I've ever witnessed.

The file literally requires a combination to unlock the file. Access can be restricted to files at will. Any attempt to decode a file without the code fails. There are two codes required for decoding a file.

1. The main encode/decode access code which only allows you access to try to attempt a file recovery.

This code could (say) gain access to certain disks. Different codes for different subjects or program files. Again let me state that this code only allows you a chance to try a decode/encode.

2. Now for a ten digit file access code. Without this the file is not for human understanding. Nor for any other medium.

Should someone attempt a decode of a file knowing only say the first access code to encode/decode, this would be of no use unless he knew the file access code. If he should be so bold as to try even one decode on the file it could be lost forever. Yes even to the person who knows the proper code.

So I surmise that back-ups are in order of the day here. At least you would know if someone within your trusted ranks tried a funny.

If you want security not even a computer set to the only task of decoding one file could accomplish this task within 10,000 years.

The files created undergo the following:

- Transposition
- Inversion
- Traveling XOR's (element relative)
- XOR's with hash generated by user combination

The file is coded block by block. Hence, should equipment error cause a bad data write, decoding error will be local only to that block.

With over 10,000,000,000 possible combinations, it is virtually impossible for an individual to attempt a decode.

Because each file can have its own combination, multiple security levels are possible. That is, simply assign sets of files the same combination. In this way, each person can be given clearance to only those files that are permitted.

Should anyone wish to try a decode of a 'coded' file let me know. I would be happy to let you try. In fact I'll even let you have all the time you need and offer my condolences to your next of kin. Be sure to have lots of paper handy too. Oh by the way I'll make it simple, a one line plain ASCII text, no machine language etc...

Now that you see what can be done, think about what useful purpose you could make out of it.

The above is from SUPERSOFT and is available for any CP/M system and TRS-80 DOS.

by: H A Lautenbach

Sorcerer I/O Vector Use

As some of you may know, the Sorcerer has a very flexible I/O system. You can decide where input and output are going to be routed and you can even write your own routine to sit on these vectors and intercept characters so you can add commands to just about anything. A few programs that I know about that do this are Starbase Hyperion (Quality Software), DPX (Quality Software), and Toolkit (NAS).

I have access to an MPI 88G dot matrix printer that is capable of doing graphics much like the Paper Tiger and I wanted to be able to do dumps of the screens. I made some very minor mods to a Tiger Graphics program and it worked fine but I could not use it very easily. I would have to load in a program then link the routines and then call them with a USR command. At the same time as I was working on this I was also working on some other software for demonstrations that allowed program to execute without user intervention. I figured the best way to do the dumps would be to sit on the keyboard input vector and whenever a ^F came through, dump the contents of the screen to the printer. It worked very well, and I made dumps of a lot of machine code programs as well, without having to do any hard work.

Basically the monitor work area contains pointers for the input and output routines that do character I/O. By modifying these routines using the SET command or changing them under program control, you can place your routines that do the character I/O as well transparent to the user.

The keyboard input vector (invect or receive) is at MWA+41h and the character output vector (outvect or send) is at MWA+3fh. To figure out where the MWA (monitor work area) is on your Sorcerer there is a routine called GETIY at (0E1A2H) which will place the MWA in the IY register once it is called.

All my program does, is call the keyboard input routine, check for ^F. If it does see one the program will dump the contents of the screen onto the printer and continue working.

The program works under CP/M for sure, I have not tested it out without CP/M but I imagine that it will work with no or minor mods to it.

The source code for MDUMP is presented below, but it requires Macro-80 to assemble it. To make it work with other assemblers you must make sure the code that is after the .phase pstart instruction, is located at 7f00h. The .phase instruction tells the M80 to assemble the program to operate at 7f00h but to actually sit at 100h+. Then the program can be loaded in using CP/M and executed and not waste a lot of disk space being loaded.

To initiate the program simply type MDUMP and the program will be loaded into ram. The program will be operational at this point, type ^F just to try it out. Then you can load in almost any program and execute it then type ^F, and the screen will go out to the printer. I should note here that the prgram was tested on a 47K CP/M. The program also gives two other addresses as well when it is loaded. If you type GO 7F00 in the monitor, after you have reset the Sorcerer, it will place the drivers back in, and a call to location 7f18h will dump the screen as well.

by: Jaques Giraud

The following program was modified by Jaques Giraud for the MPI printer.

```
            title     MPI Screen Dump
            name      ('MPIDMP')
            .z80
;
;GRPINT - Print Sorcerer screen graphics on paper tiger
;           Copyright (C) 1980 by K. Aird
;           Assumes printer in connected to the centronics port
;           Entry at GPRINT, all registers preserved

pstart      equ       7f00h
getiy       equ       0e1a2h          ;get mwa in iy
msgout      equ       0e1bah          ;output message
invect      equ       41h             ;keyboard input vector
keybrd      equ       0e018h          ;keyboard input routine
;
            call      initmsg         ;initialization message
            call      movprg          ;move the program
            call      setvct
            jp        0
;
movprg:     ld        hl,astart
            ld        de,pstart
            ld        bc,pend-pstart+1
            ldir
            ret
;
initmsg:    ld        hl,msg
            call      msgout
            ret
;
msg:        defb      cr,'MDUMP - Exidy Screen to MPI Dump'
            defb      cr,'Copyright (C) 1981 - '
            defb      'J. Giraud & Spectra Electronics',cr
            defb      cr,'Hit ^F to print the screen.'
            defb      cr,'Type GO 7F00 to set ^F vector.'
            defb      cr,'Type GO 7F18 to print screen.',cr,cr,0
;
astart:
;
            .phase    pstart          ;make program at bottom
                                      ;of ram
;
;
setvct::    call      getiy           ;get monitor work area
            ld        de,nstart       ;jump into nstart
            ld        (iy+invect),e
            ld        (iy+invect+1),d
            ret
;
nstart::    call      keybrd          ;get character
            ret       z
            cp        'F'-40h         ;check for ctrlf
            ret       nz
            call      gprint
            ret
;
gprint::    push      af              ;save all registers
            push      bc
            push      de
            push      hl
            push      ix
            push      iy
```

```
            ld      iy,ptrblk       ;iy -> parameter block
            ld      (iy+srow),0     ;first bit row
            ld      (iy+rowcnt),4   ;4 rows of 6 bits/block
            ld      (iy+blkcnt),10  ;10 blocks
            ld      hl,screen       ;start of screen
            ld      (blkadr),hl     ;start of current block
            call    cret            ;point to start of row
            ld      a,esc           ;set density
            call    print
            ld      a,(density)
            call    print
            call    setgrp          ;set graphics mode
;
; print one row of 6 scan lines
;
prtrow:     ld      (iy+lastcol),65 ;assume blank line
;
findend:    call    getbyte         ;get next scan col
            or      a               ;set flags
            jr      z,nobits        ;ignore if blank
            ld      a,(iy+colcnt)   ;save column count
            ld      (iy+lastcol),a
;
nobits:     call    nextbyte        ;move right on bit
            jr      nz,findend      ;if not end of row
            call    cret            ;back to start for print
;
prtbyte:    ld      a,(iy+colcnt)   ;see if rest of row blank
            cp      (iy+lastcol)
            jr      c,eol
            call    getbyte         ;get 6 bits
            set     6,a             ;set bit for graphics
            call    print
            call    nextbyte        ;move right one bit
            jr      nz,prtbyte
;
; point to next line and advance printer 1/2 line
;
eol:        call    nextrow
            jr      z,done          ;if last row printed
            ld      a,'6'           ;escape
            call    print
            call    setgrp          ;set graphics mode again
            jr      prtrow
;
; exit graphics mode, return carriage, and return to caller
;
done:       ld      a,cr
            call    print
            ld      a,lf
            call    print
            pop     iy              ;restore registers
            pop     ix
            pop     hl
            pop     de
            pop     bc
            pop     af
            ret
setgrp:     ld      a,esc           ;graphics mode
            call    print
            ld      a,grp           ;set # char/inch
            call    print
```

```
;
; GETBYTE - construct one 6 bit column of dots
;
; entry - IX = screen address
;         IY = parameter block
;
; exit    A  = 6 bit col of dots (top dot is bit 0)
;         BC,DE,HL used
;
getbyte:  ld        bc,6            ;b=0  c=bit count
          ld        d,(iy+srow)     ;first scan row
;
nextbit:  ld        a,d             ;which of 3 screen rows
          sub       8               ;8 bits/screen row
          jr        c,gc1           ;if first row
          sub       8
          jr        c,gc2           ;if second row
          inc       ix              ;because 128 is out of range
          ld        l,(ix+127)
          dec       ix
          jr        getbit
;
gc2:      ld        l,(ix+64)       ;second row
          jr        getbit
;
gc1:      ld        l,(ix+0)        ;first row
;
getbit:   ld        h,0             ;hl = ascii code from screen
          add       hl,hl           ;* 8 bytes/entry
          add       hl,hl
          add       hl,hl
          ld        a,cstable       ;+ base of character set
          add       a,h
          ld        h,a
          ld        a,d             ;+ bit row in character
          and       7
          add       a,l
          ld        l,a
          ld        a,(hl)          ;a=bit row in charset map
          ld        e,(iy+scol)     ;e=scan column
;
shftbit:  rla                       ;get bit in carry
          dec       e
          jr        nz,shftbit
          ld        a,b             ;shift into result
          rla
          ld        b,a
          inc       d               ;next scan bit
          dec       c               ;got 6 bits
          jr        nz,nextbit      ;if not get next bit
          ret
;
; nextbyte - point to the next bit column
;
; entry ix = screen adr
;       iy = parameter block
;
; exit  pointer updated
;       zero flag set if end of row
;       hl clobbered
;
nextbyte: inc       (iy+scol)       ;next scan col
```

```
          dec       (iy+scolcnt)    ;count
          ret       nz              ;if same character
          ld        (iy+scol),1     ;reset scan col
          ld        (iy+scolcnt),8
          inc       ix              ;next character
          dec       (iy+colcnt)     ;count
          ret
;
; cret - carriage return
;
; entry iy -> paramter block
;
; exit  pointers reset to start of line
;
cret:     ld        (iy+scol),1
          ld        (iy+scolcnt),8
          ld        (iy+colcnt),64
          ld        ix,(blkadr)
          ret
;
; next row - advance to next row of 6 bits
;
; entry iy - parameter block
;
; exit  pointers updated
;       zero flag set if end of screen
;
nextrow:  call      cret
          ld        a,(iy+srow)
          add       a,6
          ld        (iy+srow),a
          dec       (iy+rowcnt)
          ret       nz              ;if not end of block
          ld        (iy+rowcnt),4   ;next block of 4 rows
          ld        (iy+srow),0
          ld        hl,(blkadr)
          ld        bc,192          ;advance 3 screen lines
          add       hl,bc
          ld        (blkadr),hl
          ld        ix,(blkadr)
          dec       (iy+blkcnt)     ;decrement block count
          ret
;
; print - output a to centronics port
;
print:    push      af
          jp        0e99bh     ;centronics driver
;
; parameter block defines current print position
;
ptrblk:   defs      7
scol      equ       0               ;scan col (1..8)
scolcnt   equ       1               ;" " count (8..1)
colcnt    equ       2               ;column count (64..1)
lastcol   equ       3               ;" " of last non-blank col
srow      equ       4               ;scan row (0,6,12,18)
rowcnt    equ       5               ;row count (4..1)
blkcnt    equ       6               ;4 row block count (10..1)
;
blkadr:   defw      0               ;address of current block
density:  defb      30              ;16.5 char/inch code
;
cstable   equ       0f8h            ;page of character set tble
```

```
screen    equ       0f080h
esc       equ       27
grp       equ       23
cr        equ       0dh
lf        equ       0ah
;
pend:
          .dephase
          end
```

XMODEM Re-written - Sorcerer & Disk Jockey 2D

Within the last two months, a lot of members have gotten modems. This has led to a quest for software that will be compatible with the BBS systems in and around here.(Toronto)(BBS - Bulletin Board Systems)

Since most of the members now have modems (of all types), it remains a little problem. The problem is simple, the Sorcerer must tie in via the serial port. A number of modem programs already do this, and very well.

As I have mentioned a problem exists. The Sorcerer Serial port is you might say also is being used by the monitor keyboard scan routine and therefore must share the port call time for various duties. Since the more sophisticated modems are more complex the problem is intensified. If for example, the UART is told to disconnect the port for serial data transfer the modem will also disconnect. This becomes very apparent only with disk operations.

When attempting to transfer more data than there is memory, writing to disk or during disk buffering of the data, the port is disconnected.

I found it most frustrating that when retrieving data from a BBS system, the modem program disconnected me the first time, especially since the file I was trying to get was 66K long (ASCII Dump) and I had waited already for an hour to get this much information. Anyway, this is why the Ward Christensen program was re-written (not that it was the cause I mentioned above).

The program was re-written by Walter Blady and moral support from me. This ended up to be quite a big job. We had no idea whether the program was even tested in the state that it was in. (ie.. the program was the one I mentioned earlier about getting disconnected from the BBS system) It took three transfers before I had the whole program (in sections). After piecing it together with Wordstar Walter started to change/delete etc. etc.. After about a month Walter said he was ready to give it a try. Well nothing seemed to go right during the earlier trials. A bug here and a bug there, as it were. There were errors in the program - original or ours we couldn't tell. Finally it was working, partially any way. The biggest problem was it was written in 8080 code and was to be assembled using MAC, 8080 we weren't versed with and MAC we didn't have. So Walter at least got versed with 8080 by the time we were through.

After much on line testing and my relatives and friends telling me to get another telephone line put in (which I didn't), also my wife's comments, such as "wonder if my mother is still alive". I survived all that, fortunately. The program took shape and additional features were added, to make it probably the most flexible data transfer system around (ULTRA reliable). Why I say ultra reliable is simple, we made a program transfer under the most miserable conditions possible "hisss,crackle,pop", was how the line sounded. I couldn't understand the other end during initial link up. This always happens on my telephone line after a rain storm. Well the identical modem programs were used. A number of times during the course of the transfer the other program did not acknowledge a correct transfer and my end simply just sent it again until it did. This by the way was a machine language program that was sent and it ran beautifully right away. Now I know that if I want to transfer something even under the worst conditions, it will work and none of this "I'll send it again shall I".

On the next page you can see the menu and some of the options that were instigated.

```
COMMANDS - IN MENU MODE                    *** SMODEM ***
=======================
WRT  - Write terminal file to disk
DEL  - Erase terminal file from disk
DSC  - Disconnect phone (SMARTMODEM)
RET  - Return to terminal mode-no data loss
CAL  - Auto dial from list (SMARTMODEM)
XPR  - Expert mode (Toggle menu on/off)
DIR  - Directory (drive)
CPM  - Exit to CP/M
K    - Kill disk file [fn.ext]
S... - Send CP/M file [fn.ext]       SECONDARY OPTIONS
R... - Receive CP/M file [fn.ext]    =================
T    - Terminal mode (fn.ext)     ...B  - Batch file mode
E    - terminal mode with Echo    ...S  - show as Sent
                                  ...R  - show as Received
COMMANDS - IN TERMINAL MODE       ...V  - View as sent/received
==========================        ...Q  - Quiet, no messages
^E   - Exit to menu mode          ...T  - return to Terminal mode
^T   - Transmit informal file *** ...E  - return to Echo mode
^Y   - Save data (toggle on/off)  ...D  - Disconnect phone
^O   - Terminal/Echo (toggle on/off)
^P   - List device (toggle on/off) **
^C   - Object code (toggle on/off) ***
^X   - Cancel send/receive
^Z   - End of file
^S   - XOFF character (tell BBS to wait)
^Q   - XON character (tell BBS to continue)

 ** ^P- ie. Printer on/off (during send/receive).
*** ^C- Will allow machine language program transfer
        in the ^T (Transmit informal file) mode.
```

This gives you some idea as to the power and flexibility that this program has. The CAL directory was expanded for 52 phone numbers (which should be enough ???) for anyone. This program will be made available to members only, free of charge and will be included in our next library tape. For non Discus users, you will have to re-write some of it to make it compatible with your system. I would make only one comment, that is, use a serial card in the S100 for this function. An ASM/MAC file can be made available.

Program Review -- **Grotnik Wars** by Ross Williams

Great, Great, Great, now we see some of the things that are possible with the Sorcerer. For those of you not familiar with this program, here are my views.

It seems to be almost like 'Star Raiders' on the Atari but with much more action. The 3-D effect is quite astounding. The game was written by Ross Williams with all controls on the numeric keypad and some on the keyboard. I found this was not too bad, but if it were controlled from a joystick, that would be the final touch. Since there is so much happening so fast, your fingers get sore after a couple of hours of playing. This game has to be seen to be described, mere words can't do it justice.

Well with all my talk about joysticks, I did just that. After a few hours of deliberation and a modified joystick I had the ulimate control for this game. Works like a dream, have to fight off my son for a turn!!!

The joystick version is available from Northamerican Software with interface and possibly even joysticks later.

by: H.A. Lautenbach

Northamerican Software

NOW ORDER BY TELEPHONE

416-881-1532

GROTNIK WARS by Ross Williams

This is it! A breathtaking 3 dimensional simulation arcade game. We wanted to call it Dynasty, but Ross is determined that a game with a difference should have a name with a difference!

It's a video arcade game that isn't coin hungry. You, as commander of a star ship, must search out and destroy enemy spaceships in 8 galaxies. Of course, you have only a certain amount of energy, and when you fight an enemy ship that is in your galaxy, it may fight back and damage your ship.

The many inovations in GROTNIK WARS make you feel that you are actually piloting the spaceship instead of just hitting keys, but the feature that gives it life is its real-time animation. As you patrol a galaxy, you see a field of meteors passing you, just as if you were moving through 3 dimensional space. Asteroids appear out of the distance and grow larger as they near you, before drifting past. When you steer the ship, the stars outside veer realistically in the opposite direction. Enemy ships appear from above, below or from the side, receding in size as they speed past. But the hyperspace effect (used to move you to a different part of your galaxy) and explosions must be seen to be believed! Never before has there been anything like it for the Sorcerer!

24.95 US

GALAXIANS by Martin Sevior

Parents are complaining that they can't use their Sorcerer since the children found the thrills and excitement of the Galaxians.

You can force the children into bed, but will you be able to force the Galaxians into defeat as they dive at you with ever increasing fury. Your Sorcerer's unique high resolution graphics add to the excitement that this game generates. This has proved to be our most popular game.

Galaxians now comes with Sound Effects and Joy Stick control. If you have previously purchased our Galaxians and wish to update to Sound and Joystick, simply send us the Galaxians cassette label and $6.00 (Plus postage) for a replacement.

US $ 22.95

How to order:

PROGRAM	PRICE
Postage and Handling	
TOTAL	

I enclose,

A. Cheque or money order for the above amount.

OR B. My credit card expiry date .....

No. .....

My name and address:

NAME: .....

STREET: .....

TOWN/CITY: .....

POST CODE: .....

COUNTRY: .....

TOUCH-TYPE TUTOR by Roy Mercer

Think of the time you could save if you could Touch Type efficiently and accurately. TOUCH-TYPE-TUTOR will have you typing with speed and skill and with as much fun as playing Space Invaders. Your SORCERER has an excellent standard shifted full keyboard virtually identical with any high quality electric typewriter and has a memory mapped video display with superb graphics that allows fast screen animation. AND NOW SORCERER has TOUCH-TYPE-TUTOR, an interactive animated audio-visual teaching programme/game.

How does it work? They say "Watched pot never boils" and watched fingers will never type properly. It is essential to keep your eyes off the keyboard – an impossibility for the beginner or for the self-taught two finger typist. TOUCH-TYPE-TUTOR overcomes the problem by putting the keyboard on your monitor screen. A split screen display shows your typing Exercise on the lower half, while the upper screen displays an image of the Standard Keyboard. As you progress through the Exercise, the appropriate keys are lit up on the screen image, instantaneously prompting the next correct finger movement. Hit the wrong key and it flashes on the screen. A speaker connected to the parallel output port will beep on errors to further reinforce the negative feedback.

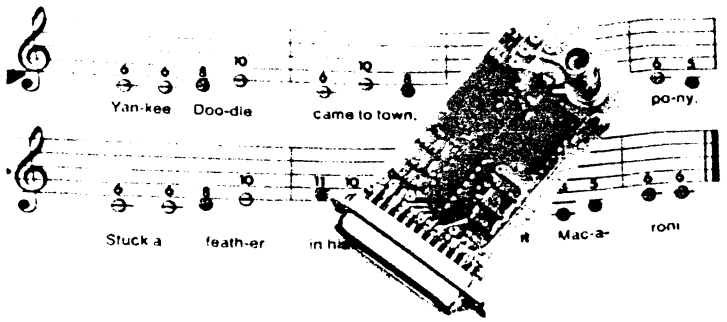
TOUCH-TYPE-TUTOR teaches step by step, introducing the keys in a logical manner and indicating the correct fingering – even which of the two shift keys to use for the upper case characters. Extra features include a facility to set up your own exercises for problem keys and the ability to turn off the screen prompt for advanced practice. You will find yourself rapidly improving your speeds as your accuracy increases.

US $19.95

MACHINE CODE TUTORIAL PACKAGE by Richard Swannell

Can you really operate your Sorcerer after typing BYE? Where do you look for information on Z-80 machine code programming? If you can programme in BASIC this package will give you everything you want to know about your Sorcerer, with easy-to-understand, lightly written tutorials. Covers such topics as: Monitor Commands, most Z-80 instructions, Hex-Binary-Decimal conversions, RAM and ROM, Source and Object Codes. Assembly Language, Hand Coding, Video and Keyboard Routines, Input and Output Vector Manipulation, Memory Maps, Video and Screen RAM, Graphics and DMA, Cursor Control, Monitor and BASIC work areas, Special purpose 'GO' addresses of the monitor and BASIC ROM PAC, Storage and Linking of BASIC programmes, parallel and Serial Interfacing, Cassette Routines, Sound Generation, No-Stop Keyboard Input, disenabling CTRL C and ESC...which is so much more than you will be able to find in any manual. A set of 8 tutorial programmes designed to show the BASIC programmer what to do with his Sorcerer. This Tutorial Package is more than a purchase, it is an investment.

US $ 28.95



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