

LICA

LONG ISLAND COMPUTER ASSOCIATION, INC.

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THE STACK

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PRESIDENT'S MESSAGE

I've bragged to many acquaintances from outside our microcomputer hobby about how remarkably reliable our systems are. For example, the last component failure I experienced on the IMSAI system was an out-of-spec voltage regulator back in the Summer of 1980, and I've yet to meet an 8" diskette I couldn't format. Well, June 1982 will be remembered as the time when I got "a fuller perspective" on the wonderful world of hardware and hardware vendors.

When the horizontal deflection suddenly and catastrophically ceased to function on my ADM-3A, I quickly reasoned that the problem was a failed deflection yoke. My technical manual stated that at the time my kit was sold, the TV portion of Lear Siegler's not-so "dumb terminal" was supplied by Ball Manufacturing Company (famed for their patented canning jars) in Minnesota.

I called Ball, gave them the part number stamped on the dead yoke, was told that (1) my part number was wrong; (2) their part cost less than \$20, but as their minimum order was \$50, and they required a \$10 "restocking charge", would cost me, with shipping over \$60. I agreed to their terms, and they were able to have two (!) yokes to me in only four weeks.

I'm happy to report that due to the technical advice I received from the Ball engineers, and my dogged determination not to retire "old Bessie", my near-antique terminal is back in service.

There's a lesson in here, and that lesson is that for the computer hobbyist getting there is half the fun. When I first was attracted to LICA, I knew very little about electronics. Something in my makeup drove me to seek out kit manufacturers and to build rather than buy assembled and tested devices whenever possible. What I gained in the final analysis is far more than the possession of a rock-solid S-100 computer system. I've mastered a hundred little problems and become aware of ten thousand more questions worth asking, exploring, and ultimately solving. We've each come to LICA for our own reasons. We'll each take different things away from the club. But first, last, and always....we're hobbyists!

MONTHLY MEETINGS

Note: All meetings, except IBM PC/UG and 6800 UG are held at the New York Institute of Technology, Old Westbury Campus. LICA meets each month on the third Friday evening at 8:00 in Room 508, Building 500. The General meeting will take place on the 20th. The speaker will be Bob Garino of Panasonic who will talk on INTERACTIVE VIDEO (the industrial uses microprocessor-controlled video tape and video disk systems). Anyone wishing to appear on the agenda, please contact Al Stone (516) 731-1649.

THE SECRETARY'S REPORT JULY 16 MEETING

Our speaker this evening was Dr. Burt Masnick from Hazeltine, who discussed the history of dumb terminals. The advent of time sharing in the early 1960's provided a need for the dumb terminal. Something better than the noisy mechanical teletype was needed. The integrated circuits of the late 1960's made the CRT possible. At first the dumb terminal was essentially a quiet, glass teletype.

By 1970 there were 200 terminal companies. All CRT's took advantage of integrated circuits but they had different types of memory. The Hazeltine 2000 had 32 boards. Changes came when more complex devices were put on a chip. The big change came in 1971 with the Intel 8008 chip which was used to make the terminal intelligent.

The difference between smart and dumb terminals is programability, with a large gray area in between. The future of dumb terminals will be plug in processor boards (compatible with CP/M, etc.), true intelligence and computing power, they will be "user friendly", have variable fonts and possibly have flat screens.

REPORTS FROM THE SPECIAL INTEREST GROUPS

S-100: For the July, 1982 meeting the S-100 group had an exceptional speaker whose subject created a great deal of excitement among the members. The speaker was Russ Ives, a physicist from Grumman. The subject was pattern recognition.

Pattern recognition, in simple terms, is the act of categorizing and determining categories for a given set of objects. It is a field of study that relies heavily upon regression analysis and correlation and depends almost entirely upon computers.

Pattern recognition historically started in the field of mathematics and has had inputs from electrical engineering and other fields. The present applications are fascinating. It is used to distinguish underground nuclear blasts from earthquakes by studying the patterns of the seismograph. It is used to produce type readers that can read any font. Pattern recognition is even used in oil exploration by mapping the underground strata using sound waves vs. time. It was used in designing "Fearless Fosdick", a robot designed to flush armed criminals out of buildings.

Russ Ives so tantalized his listeners that most of us are rushing out to buy the introductory book he recommended: Principles of Pattern Recognition by Tou and Gonzales, Wiley & Sons.

This was a rare talk that stimulated the imagination as to the myriad of possible applications for computers. It even leads us to speculate that since computers are now being used to make other computers (reproduce themselves) and since computers are being endowed by man, their creator, with the ability to perceive and recognize, then are not some computers close to becoming living beings ?

IBMPCUG 3

Another month has rolled by and we've had our third meeting which focused on our software needs. We saw:

VOLKSWRITER, a wordprocessing program which is self prompting and therefore very easy to learn and use. The manual is almost an unnecessary accessory! It is also a very powerful computer programming tool as it produces text in the same format as Edlin. We now have a word processor which is user friendly and in addition can be used for programming, communication, etc.

WORDSTAR as developed by Xedex for use with their Baby Blue Z80 adapter board is a very nice adaptation of a very complete word processor. It makes use of ALL of the function keys and converts a complicated, powerful word processor to one that is almost as easy to use as VOLKSWRITER. It seems to be much more operable than the edition of Wordstar just issued for the PC.

COLOR GRAPHICS AND GAMES by Erik Klein and Scot Shinderman. These are quite sophisticated and represent the shape of things to come. Well done! Erik mentioned that he has been trying to learn the Macroassembler as well as Pascal. Both of them are eagerly awaiting the arrival of IBM's Basic Compiler. The local Computerland has an advance copy of the compiler and they say that it is at least twenty times as fast as the interpretive Basic. Sounds like it might be fast enough to have the color graphic games really move. COLOR GRAPHICS were shown on a 13 inch color monitor which can deliver a full 80 column letter display. The color monitor was noteworthy as it cost just \$475. It comes in a nicely finished aluminum case, complete with an IBM PC adapter cable for that price.

COMPUTER MUSIC by Cindy Freifeld. She has made some very nice tunes by using the play routines available in Basic. She wants to learn the 8088 IBM Macroassembler to facilitate programming in more than one voice at a time. She achieved an effect very much like two voices by interspersing them serially as 1/64th notes. Well done.

VISICALC is a much used program at the accounting firm of Joseph Geller and Company, P.C. Norman Geller explained why. Our next monthly meeting will have him as one of our featured speakers demonstrating why he uses Visicalc.

Dave Stein and I attended the meeting of the NYACC IBM PCUG on Wed., July 21st. There were approximately 150 people in attendance. It was a good meeting. The ambiance was such as to make us feel right at home. The Big Apple is still THE PLACE. There is a tremendous feeling of vitality surrounding the central City and it seems to be concentrated in a meeting such as this one.

At the last General Membership meeting of LICA there were some questions asked about the IBM PC, indeed there were some aspersions cast at the mention of (horrors) IBM. Some members seem to think that if you have an IBM you pay double and triple for everything. Nothing could be further from the truth! One can buy the IBM PC completely unbundled and add the very competitively priced accessories of your choice. The prices for everything follow the law of supply and demand, the end result is that the exact same bargains exist for all machines. A 320 kbyte disc drive can be bought for just \$199 from a fellow member. It works perfectly, I have one in my system. My Epson MX100 (not 80) was bought for just \$680 from a firm in California. The black and white monitor I'm writing this on cost all of \$50 (no, you don't have to buy it with their Green Screen.) The discounters are doing very nice things for us. The IBM itself is priced to be competitive with other computers. Indeed as the production resources start to equal the demand the price on the system console itself will most likely fall. The software "hole" is filling very rapidly; it is well on it's way to becoming a software "mountain". It is a very popular micro in spite of the fact that it has a name like (ugh) IBM.

We all know that a micro lives if it is well supported, I strongly suspect that the popularity of the IBM PC guarantees it a long life; in fact that is one of the reasons I now have the IBM. The other reason is that I happen to like the mix of capabilities, it is a medium resolution color graphics machine with a full 80 character display for word processing and has a memory size that is large enough to permit growth to encompass most of the serious applications that I can foresee over the next few years. It permits me to do my word processing and scientific programming, my wife to use it for correspondence; its Basic includes easy to use color graphics and music commands which permit my sons to work on computer games, my daughter to work on music and graphics. The best of CP/M 80 (and the worst) can be accommodated via the Baby Blue Z80 card. It can not be all things to all people; but it comes close.

Someone suggested that I reprint a page or two of prices for IBM accessories. I've decided to do just that; I think I'll publish it as a magazine. I think I'll call it,,BYTE or PC or...

The next IBM PCUG meeting will be held on Friday, Aug. 13 at 8:00 PM at 3 Lindron Ave., Smithtown NY. Come on down! You are all welcome to attend.

TRS-80 / 6500 / 680X
No reports submitted.

Computer Learning Center

As was presented at the July L.I.C.A. meeting the Computer Learning Center has established a computer education and support facility. Currently situated at the Brookville Community Center the comprehensive Learning Center program will utilize local professional's talents to provide these services:

- Provide youths with an afterschool computer program.
- Help in the selection of computer equipment with followup support.
- Teach computer programming in various languages.
- Assist in the selection of useful computer software.
- Teach construction and maintenance of computer equipment.
- Assist in the development of computer industry job-skills.
- Job placement, with special emphasis on instructing and aiding the handicapped.

These goals will be reached by using these facilities:

Classrooms of small microcomputer systems; A hardware laboratory; A software library; A reference library; Conference rooms for meetings, speakers and seminars.

The Computer Learning Center will officially open in September, 1982.

Where does L.I.C.A. fit into these arrangements? Computer Learning Center views L.I.C.A. as a partner in this project. L.I.C.A. and its members have much to offer the Learning Center. Specifically some of these areas include the following:

1) Technical Assistance—L.I.C.A. members are some of the top experts in the Long Island computer industry and can provide help in systems configuration, software design and others.

2) Teachers—The same expertise that makes L.I.C.A. members vital for technical assistance makes them excellent for salaried Teaching Staff positions at the Learning Center for classroom training, seminars, tutoring and consultation.

3) Acquisition—L.I.C.A. members have access to first hand information about computer development and availability. As a newly formed tax exempt, non-profit organization the Computer Learning Center is working on a very limited budget and needs help in acquiring computer hardware and software. Any information concerning equipment and materials available from local industry for donations or very reasonable costs would be very useful. The Learning Center is able to utilize used equipment and can service it as necessary.

4) Publicity and Membership—By becoming members of the Computer Learning Center and encouraging others to do so you will help in the formation of a vital new educational facility. As members you will receive membership benefits such as reduced rates on classes, opportunity to utilize the Computer Learning Center's facilities and others.

Involvement in the Computer Learning Center is meant to be mutually beneficial. Besides the membership benefits and employment opportunities mentioned above the Learning Center will be maintaining a referral service for computer consultation and employment. At no fee members can be listed on this service. Additionally the Center is interested in marketing software that you develop both on a local and national level. The software publishing aspect of the project is meant to be a service to members and will profit you, the software author, to the maximum extent possible.

Won't you help on this new and exciting project. For more information call 484-0060 or 293-5810 or send in the response form below.

BECOME A COMPUTER LEARNING CENTER MEMBER

The Computer Learning Center is now conducting its initial membership drive and wants you to become charter members. Joining the Center will help to make computer education available to thousands of Long Islanders. Being a member will also help you. Charter members of the Computer Learning Center will receive these benefits:

- Reduced rates on classes, seminars and workshops;
- Access to the Hardware Lab and Software Library;
- Discounts on computer hardware, software, supplies and services;
- Bimonthly newsletter;
- Listing in the Learning Center's Consultation and computer services databank.

How can you become a member? For \$30 you can become a Charter Member of the Computer Learning Center. Or if you'd rather, for the price of a Sinclair 1000 Microcomputer you can have the computer and become a member too. Instructions for the Sinclairs will be available. We can make peripheral devices and software for Sinclairs available for you at low prices. Membership donations are tax deductible.

COMPUTER LEARNING CENTER MEMBERSHIP APPLICATION

NAME _____ LICA MEMBER ? []

ADDRESS _____

PHONE NUMBER _____

[] I WOULD LIKE TO BECOME A LEARNING CENTER MEMBER. ENCLOSED IS (CIRCLE ONE) \$30 FOR MEMBERSHIP, OR \$100 MEMBERSHIP AND A SINCLAIR COMPUTER.

[] I AM INTERESTED IN TAKING CLASSES. PLEASE RUSH INFORMATION ON COURSE OFFERING AND TIMES.

MAKE CHECKS PAYABLE TO:
COMPUTER LEARNING CENTER/BROOKVILLE COMMUNITY CENTER
78 WOLVER HOLLOW ROAD BROOKVILLE, NEW YORK 11545

The PRINTER OR CONSOLE FROM MBASIC80

Bob Kowitt 1727 N.Jerusalem Rd. E.Meadow, NY 11554 (516) 481-8552
Excerpted from Lifelines/The Software Magazine

I have been using Microsoft BASIC 5.x since it was first released two years ago. I had been using North Star's excellent BASIC for the three years before but I found the need to change. However, the change forced a sacrifice on me, the ability to choose, at run-time whether to output to my CRT or printer.

I found that BASIC80 reads the CP/M vector table at load time to find the location of my CRT output routine and the LIST device output routine. The BIOS itself is never modified. Then when the programmer uses the command LPRINT instead of PRINT, BASIC80 sends the output to the printer and not the CRT terminal.

Finding this pointer has to be done dynamically from the program to be fully usable on different versions.

My original routine to do this was published in S100 Microsystems in the Mar/Apr 1981 issue and that's when I woke up to another problem. Actually, I was awakened by several phone calls and letters informing me that it didn't work. I was poking one byte to change the pointer location within the same memory page since my CP/M BIOS had the console driver and the list driver on the same memory page. When the routine was implemented on a computer where the BIOS crossed a page boundary between the CRT driver and list driver, the computer was down and out for the count.

Of course ! We need to find two bytes in the BIOS to be sure. Then if we cross a page boundary, we must POKE two bytes into BASIC80.

I held off using the BASIC80 compiler BASCOM until chaining was possible with COMMON variables but when that was available, new modifications in my printer/console selecting routines were necessary. Since, with compiled programs, there is no longer an interpreter pulling in pointers from CP/M, direct POKES are possible into the jump vector table.

To explain the routines I use (in the order that they should be used):
Line 30 - determine whether the program is to be used compiled or with the interpreter. (I am working on this to make it dynamic also.)

Line 560 - search BASIC80 for the location of the pointers:

TABLE is the location in the BIOS of the jump vector table for warm boot. This is found by reading location 01H and 02H

PLOC1 & PLOC2 are the location of the pointer to the LST driver in the vector table

CLOC1 & CLOC2 are the location of the pointer to the CRT driver in the vector table

C1, C2, P1 & P2 are the pointers found by CLOC1, CLOC2, PLOC1 & PLOC2, that are to be POKED into BASIC80

F1 & F2 are the locations within BASIC80 that have the pointer to the CRT driver.

Line 380 - I have a form I use to outline any messages. This routine centers the line and outlines it with asterisks (or anything else that I might want).

Line 525 - Determine where you want the output sent. The default output is CRT and after selecting the the printer it will be modified with P1 & P2.

Line 1060 - this line proved necessary because if you do a control C during the printout, the printing stops and you are left with all output going to the printer, including the message that you did a control C in a certain line. This can mess up your printing for one thing and, in addition, any input through the keyboard is echoed only on the printer, compounding the problem. Line 1060 polls the keyboard after every line and if an "E" or "e" is found, will restore the console, end the printout and branch to a correction if you write one. Put it in wherever you might think you would need it.

Line 620-this is the meat and potatoes. If you are working in the interpreter, it pokes the proper values into the BASIC80 pointer location and output goes to the printer or CRT, as selected previously. However, if you are using the program compiled (see compile switch at the top), you will actually poke into the CP/M BIOS and modify the console pointer there to point at the LIST device.

Line 615- is the recovery line whenever you want CRT display. Go back and forth to provide interactivity in the midst of printing. Be sure you use this when you are finished printing to get back control at the CRT.

=====
PROGRAM LISTING ON PAGE 9
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PROGRAMMING ASSISTANCE SOUGHT

Kevin Hurley of L.J. Benjamin Company, 40 Underhill Blvd., Syosset, NY says his company is going to sign up with an on-line brokerage information system, and is seeking a programmer to allow their Atari 800 to track 10 or 15 individual stock issues. If you know both the computer and the application, call Kevin at (516) 921-8900.

George Carlson is starting a WORD PROCESSING service. Any person who is interested should contact George after 7:00 P.M. at (516) 234-0037.

Mr. M Wall is the proud owner of an Osborne computer and would like to locate an Osborne Computer Users Group. Send all info to P.O. Box 190 - Oceanside, N.Y. 11572

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10      '          PRNCON.BAS          7/1/81
20      '          Set Compiler or Interpreter = 1
30 COMPILER=0 : INTERPRETER=1
40      '***** upper case convert function *****
45 DEF FNY$(X$)=CHR$(ASC(X$+" ") AND &H5F)
135 GOTO 1000 '          To Start Of Program
215      '***** Emphasized Centering Routine *****
380 MK$="*" '          Alter Design As You Wish
385 MS$=MK$+" "+MS$+" "+MK$
390 M$=STRING$(LEN(MS$),MK$) :T=(76-LEN(M$))/2 :PRINT TAB(T) M$
395 GOSUB 405 '***** To Normal Centering Routine *****
400 M$=STRING$(LEN(MS$),MK$):T=(76-LEN(M$))/2:PRINT TAB(T) M$ :RETURN
404      '***** Centering Routine *****
405 T=(76-LEN(MS$))/2:PRINT TAB(T) MS$;:RETURN
410      '***** Select Console or Printer *****
525 MS$="(P)rinter or (C)onsole output ?"
526 GOSUB 380
530 INPUT "",OT$
535 OT1=C1 : OT2=C2
540 IF FNY$(OT$)="P" THEN OT1=P1 : OT2=P2
545 RETURN
550 '***** Search For Output Byte *****
560 TABLE=(PEEK(2)*256)+PEEK(1)
565 PLOC1=TABLE+13 : CLOC1=TABLE+10
570 PLOC2=PLOC1+1 : CLOC2=CLOC1+1
575 P1=PEEK(PLOC1) : C1=PEEK(CLOC1)
580 P2=PEEK(PLOC2) : C2=PEEK(CLOC2)
585 FOR I=16600 TO 18000
590 IF PEEK(I)=C1 AND PEEK(I+1)=C2 THEN 600
595 NEXT
600 F1=I : F2=I+1 : RETURN
605 '***** Subroutines For Output Choice *****
614 '***** Enable Console *****
615 WIDTH 79 :IF COMPILER THEN POKE CLOC1,C1 :POKE (CLOC1+1),C2 :RETURN :
ELSE POKE F1,C1:POKE F2,C2 :RETURN
616 '***** Enable Console *****
618 '***** Enable Selected *****
620 WIDTH 132 :IF COMPILER THEN POKE CLOC1,OT1:POKE (CLOC1+1),OT2 :RETURN :
ELSE POKE F1,OT1:POKE F2,OT2:RETURN
999      '          ***** S T A R T *****
1000     '
1008 PRINT "Enter a phrase to be printed 10 times ";:LINE INPUT PHRASE$
1020 GOSUB 525 'Select Output Mode
1030 GOSUB 620 'Poke Selected Value
1040 FOR K=1 TO 10
1050 PRINT PHRASE$
1060 S$=INKEY$ 'Polls For Stop
1069 'Return Control To Console Before Ending
1070 IF FNY$(S$)="E" THEN GOSUB 615 : END
1080 NEXT
1090 GOSUB 615 'Return Control To CRT
1100 END

```

CLUB MEMBERS ONLY		
DBASE II	2.3B	\$460
SUPERVYZ		\$ 75
No hand holding. Bob Kowitt (516) 401-8552		

PET LOVERS-----< COMMODORE PET >

Pet Users Sub-Group forming. (One hour before regular meeting.)

ALL ARE WELCOME, novice, expert, or in-between.

PET "BASIC" PROGRAM DONATED BY (our man), PHIL COCHEMS.

```

100 DIM S(5,3)
110 READ P,D,A
120 IF P=0 THEN 150
130 S(P,D)=S(P,D)+A
140 GOTO 110
150 PRINT TAB(20)"SALES ANALYSIS"
160 PRINT
170 PRINT TAB(10)"DIST 1" TAB(20)"DIST 2" TAB(30)"DIST 3"
180 PRINT
190 FOR N= 1 TO 5
200 PRINT "PRD." N,
210 FOR M=1 TO 3
220 PRINT S(N,M),
230 NEXT
240 PRINT
250 NEXT
260 DATA 4,1,150,2,3,200,3,1,400,5,2,180,1,3,200,2,2,250
270 DATA 1,3,450,5,1,75,3,2,175,4,2,100,3,3,600,4,1,280
280 DATA 1,1,300,2,1,125,5,3,75,1,2,120,3,3,200,1,2,80
290 DATA 2,1,75,4,3,120,5,1,125,0,0,0

```

The STACK would like to receive other programs for distribution. How about short programs being donated by other members? ASCII files can be sent via MODEM to (516) 293-8368. Any language, tutorial type programs would be appreciated. We would like to publish for IBM, APPLE, TRS-80 etc.

While I am learning FORTH I will contribute samples as I learn. No great shakes, but its a start. (Al Levy)

In "FORTH" REMarks are made inside (brackets)
The colon indicates the beginning of a definition.
The semicolon indicates the end of a definition.

```

: PAGE 12 EMIT ;
( Clear Screen Character ... CHR$(12) )
(The word PAGE now means Clear The Screen)
: POEM CR 11 1 DO I . ." Little "
(POEM means print out numbers from 1 to 11)
(plus the string "Little" . At 12 do a CR)
(FOR I=1 TO 11:PRINT I,"Little":NEXT)
I 3 MOD 0= IF ." Indians " CR THEN LOOP
." Indian boys. " ;
(If printing out a number then print the string)
("Indians" and a CR unless its the 11th loop)
(In that case print the string "Indian Boys" and CR)
: P PAGE POEM ;(The command P now includes PAGE and POEM)
(to run the program the user must type "P")

```


CLASSIFIED ADS

ACCOUNTING, record keeping & Tax Services provided weekly, monthly, or quarterly (basis to suit). Sales Tax, Employer Wage Forms, Bank Records, Cash Receipts and Disbursement Journals, General Ledgers etc. Small business and personal accounts invited. AILEEN HARRISON (516) 938-6769

FOR TRADE: Back issues of Creative Computing Magazine for any other magazine or computer book. AL LEVY (516) 997-3653

DISC DRIVES FOR SALE 5" MPI model #52 Double Sided Double Density, 40 track/side Two of these can be connected on TRS-80 and similar DOS to appear like 4, 40 track single sided drives. Price \$196 with 30 day guarantee or \$160 as is. Call Don Hess days 212 947-6027 after 8 pm 516 883-6336

FOR SALE OR TRADE Toolkit for original roms pet. 200 8k programs on tape. Old copies of MICRO MAG., CREATIVE COMPUTING, BYTE, PEOPLES COMPUTING & DR DOBB'S JOURNAL. Call: Phil Cochems (516) 333- 4213

COMMERCIAL ADVERTISING POLICY

In an effort to cover our costs of duplication and mailing, and to provide a more extensive monthly edition of THE STACK, commercial display ads are accepted in 1/4 1/2 and Full Page sizes. Minimum participation is for three months. The three month rates are \$45, \$65, and \$100 repectively. Copy need not be the same each month. Camera ready preferably. Type setting & layout work available at additional charge.

All checks should be made payable to LICA

The Long Island Computer Association, INC. is open to everyone, amateur or professional with an interest in computers, computer applications, programming, or related subjects. Dues are \$12.00 per year which includes monthly issues of this publication. The STACK is mailed to other computer clubs on an exchange basis as well as to various technical publishers. Permission for reprinting or quoting items in The STACK is granted providing that credit is given & a copy of the reprint is sent to The STACK. Members can vote in club elections, & place non-commercial classified ads (at no charge) and commercial ads at nominal cost. Member articles and other data affecting The STACK must be received by the 15th day of any month, to be published in the following issue. All copy should be sent to:

Al Levy P.O.Box 71 Hicksville N.Y.11802 (516)997-3653

SUB-GROUP	CHAIRMEN	PHONE (516)	Meetings Each Month
S-100	Richard Wilson	747-4241	2nd Friday 7:30
TRS-80	Ed Zuilkowski	938-3320	2nd & 3rd Friday 7:00
6502	Steve Perry	744-6462	
680X	Roger Kaucher	796-8746	

ATTENTION ALL MEMBERS OF L.I.C.A. WHO OWN THE RADIO SHACK COLOR COMPUTER Please let S.PERRY JENKINS, P.O. BOX 62, SOUTHAMPTON, NY 11968 have your name & address. He is compiling a list of all RSCC owners so as to share information etc. It is certainly in your best interest to contact him either by mail or at the meeting.

ROGER VAN GHENT
SOFTWARE ENGINEER

PERSONAL/SMALL BUSINESS MICROCOMPUTER EVALUATION CHECKLIST

This evaluation checklist (see over) covers features found on the typical microcomputer. I have weighted them by their usefulness for general computer processing.

1. Evaluate the features.

Fill in the "Value" columns with information from fliers, catalogs and the dealer. Data should be as quantitative as possible and represent the configuration you would actually buy. For example, if the computer has two 5½ inch disks, enter "2" rather than "yes". If information is not available for a model, assume the worst case.

2. Compare and rank each value.

Fill in the "Rank" columns by comparing the values of each feature. Give the highest rank to the best value, the lowest rank to the worst value. Use a range equal to the number of values considered. For example, if three processor speeds are evaluated, rank them 1, 2 or 3. Yes = 1, no = 0. Equal values should have equal rank. Be objective. Remove any bias.

3. Score the model.

Fill in the "Score" columns by multiplying the rank of each feature by the weight of that feature. Add 2 to weights marked "w" if word processing is desired. Then add up the scores for each computer model. The higher the score, the better the system.

4. Evaluate the results.

Make a judgement based on the scores and the price. Lower prices don't necessarily mean better buys. If the best computer is too expensive, perhaps you are expecting too much. Reexamine the features and see if a less expensive item will do the job. Additional factors to be considered are (add percentages to score if desired):

References (5%)	Single Source Vendor (5%)
Availability of software (4%)	Clarity of operating manuals (4%)
Availability of service (3%)	Backup ability (3%)
Availability of a Hot Line (2%)	Dealer's reputation (2%)
Number of units installed (1%)	Warranty period (1%)

5. Software.

Software is much more important and difficult to fix than hardware. Be sure to price out and test all software before buying. Look for limits, i.e.: the maximum number of entries, largest possible values and codes, etc. Then try them out. Programs perform worst at these "boundary" conditions. Make up a checklist!

Definitions:

bit	Binary digit. The smallest unit of computer storage.
byte	A unit of storage for symbols and characters. Usually 8 bits.
cps	Characters per second.
CRT	Cathode Ray Tube, similar to a TV screen.
KB	1028 bytes. Usually used to describe the size of memory.
MHz	"Megahertz", a measure of processor speed in millions of cycles per second.
Modem	Modulator/Demodulator, used for telephone line communications.
Port	Plug to which external device is attached, such as printers, joysticks.
RAM	Read Access Memory. The memory available to your programs.
ROM	Read Only Memory. Memory for resident software such as diagnostics.
RS232	A standard connection for serial communications.
word	A unit of storage for data and instructions.

Inserted in this issue of the STACK is a form supplied by Roger Van Ghent. Roger is a top ranking SYSTEMS consultant for business people. He has been kind enough to supply us with these forms, so please use them.

Please Fill In The Line "COMPUTER MODEL" with the brand, model #, and other appropriate info. If you are using a homebrew or Imsai then fill in with board types etc.

If you are a member of LICA, please fill in the blanks pertaining to the equipment you already own. Mail the filled in form to:

BOB KOWITT 1727 Jerusalem Rd. E Meadow, NY 11554

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If you are PURCHASING a COMPUTER you should find it extremely helpful when traveling from store to store and comparison shopping. This is provided of course, that you (or the salesman) fill in the appropriate blanks. Additional copies of this form are available from Roger Van Ghent if needed.

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