

THE COMPUTER

& VIDEO MARKET MAGAZINE

Education Issue

Technical Corner

Computer Programs

Working with Visicalc

Education

Business

Classifieds

User Groups

Nov.—Dec.

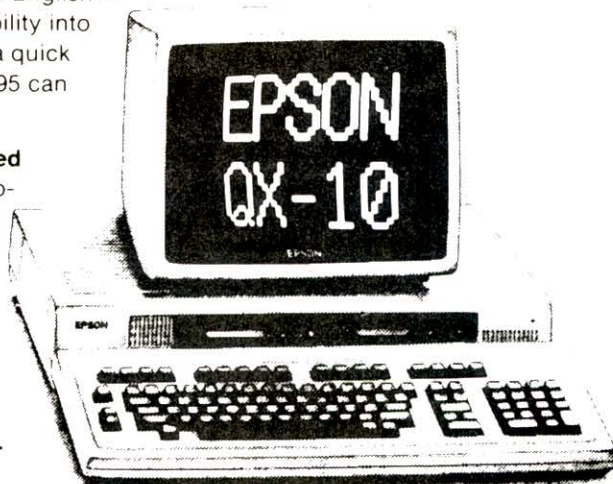
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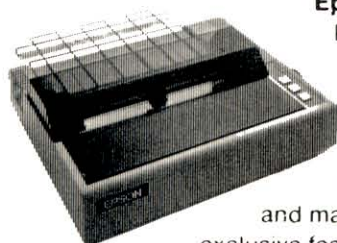
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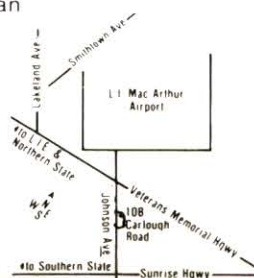
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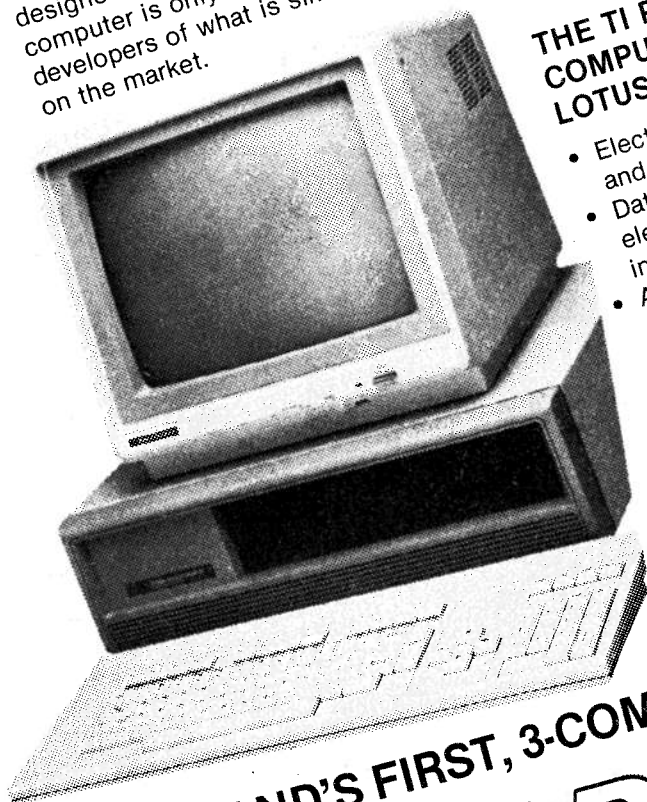
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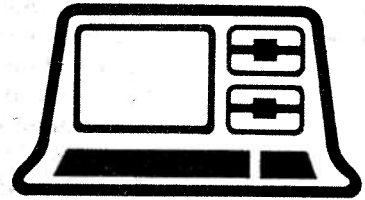
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The magazine is Published by The Computer and Video Market, Inc. P.O. Box 127, Jericho, NY 11753, (516) 681-4796. It is Published six times a year. Subscription rate is \$10 for 12 issues. Publisher: J. Altman, Editor: P. Romero, Advertising: B. Leonard.

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RETURNING IN THE NEXT ISSUE:

*Al DiBlasi will continue
his section on PASCAL
and Business Programs.*

From the Editor's Desk

THE SAD STORY

With the unfortunate demise of a popular computer company that sent shock waves throughout the computer establishment, we now sit and wonder, "what next?" Was it a singular experience due to poor management or an omen of things to come? Having read the various obituaries on the death of a leader, one becomes very concerned as to where one will put his next dollar in computer equipment. The pessimists believe that some of today's big names may be on the way out within a few years. Just as the dozens of automobile companies of yesteryear have been whittled down to a mere three, so it will happen in the computer industry. Thoughts are that such giants as IBM, DEC, WANG and TI are some of the formidable forces that will dominate the industry. If manufacturers are not designing their computers to be compatible with IBM software, they will be in big trouble.

If these observations are accurate, I am sure it would appear that the giants are monopolizing the micro-computer industry and pushing out the little guy again. Computer buffs have strong personal loyalties to their computers. It would certainly leave lots of scars should their favorite computer company go belly up. There were many Osborne worshippers out there. What a shame! Unfortunately, bad news such as the Osborne debacle, with its aftershocks, tend to frighten people into thinking the worst and they wonder which way to turn next.

What is your opinion on this matter?

We welcome readers' response to this editorial.

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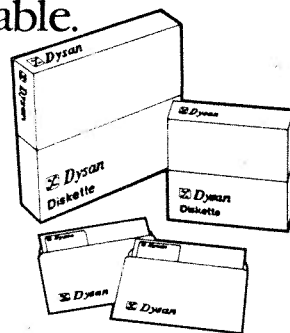
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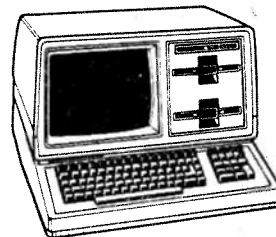
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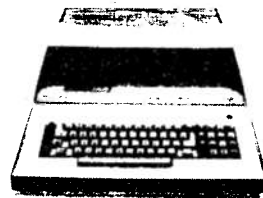
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COMPUTERS IN OUR SCHOOLS

As more and more schools obtain computers for students and administrative purposes, the need for experienced computer teachers will become increasingly urgent. It is essential that the administration encourage teachers to take courses if they show an interest in this area. Though there are many administrators who are skeptical about this new technology, they must face the reality of the present and the future.

Teachers have proven that the computer is a marvelous teaching tool. Students learn by doing. Many students who were bored stiff have found the computer a stimulating way to learn. Math Departments seem to be the first place that computers end up, and that is probably because computers lend themselves so nicely to manipulation of numbers. Of course, they are not limited to this area, and that is what I wish to write about.

Many schools have found that the computer can handle much of their voluminous paperwork. Student records can be stored on disks and retrieved with ease. Classes can be extracted from the master list and sorted as desired. Attendance, conduct, scheduling, bus routing, lunches, discharges, etc. can be kept on several small disks. The list can be expanded to include school bookkeeping, library files, word processing, etc. The potential is obvious. Administrators who were skeptical about computers found them to be invaluable once they proved their worth.

I would like to cite two data management systems that I had seen used in the school system: "dBASE II" by Ashton Tate used with an Apple and "Profile III Plus" by Tandy used with Radio Shack Model III. I am sure there are other fine software packages on the market, but you should make sure that they meet your needs. Criteria that you should consider are the number of disk drives required, record and field size, sort capabilities, merge capabilities, ease of use, to name a few. It would be wise to investigate other schools that have a working system in place and go from there. Many schools are tied to mainframes or network units to their district offices.

I have mentioned many terms that may be meaningless to the newcomer in this field, though basic to the average computer buff. Obviously some experience is required, and if there is no computer specialist or co-ordinator in your school district, then you must find and help educate a potential candidate.

WHO IS BENEFITING? WHO IS NOT?

After reading several articles on the problems our schools are having in regard to computers or the lack of them, there seems to be many questions that must be answered.

THE COMPUTERS PURCHASED FOR THE SCHOOL(S) ARE NOW OBSOLETE. THE PURCHASES MADE AT THE TIME WERE WITHOUT THOUGHT AND WITH THE INTENTION OF SPENDING THE ALLOTTED MONEY QUICKLY LESS IT BE WITHDRAWN.

I am sure this has been and is still happening across the nation. If a certain amount of money is allotted to a school for the purpose of purchasing computers and related equipment, that school will move fast to obtain that equipment. Money is extremely tight in the area of education, needless to say. With this in mind, many Administrators have plunged headlong into buying computers with little or no knowledge of the subject. We cannot fully fault them for this. There has been very little thought given as to how microcomputers can fit into the educational environment. Now that many schools have a variety of microcomputers, school districts are hiring computer coordinators to help get their acts together.

Teachers who have become more knowledgeable about the hardware and software they use may see the weak spots and shortcoming of their systems. They may now wish that they had a system that produces color graphics, one that can be hooked up to a network system, or one that can take LOGO software, etc. Unfortunately, while these wishes do have merit, they may never be fulfilled. The schools that are latecomers may choose these options. But as sure as night follows day, something new will appear on the scene and render today's computer somewhat obsolete.

What can be done? Make due with what you have. The microcomputers developed in the late 70's and utilize the BASIC language are still in use today. There is no limit to their potential and there is plenty of software around. The BASIC language has not changed greatly and lends itself well to all educational subjects. The creative teacher can find an endless potpourri of challenging programs for his/her students to develop.

SOME SCHOOLS HAVE NO COMPUTERS AT ALL, SOME VERY FEW WHILE OTHERS HAVE PLENTY. WILL THIS CREATE AN EDUCATIONAL GAP?

Let us face facts, even if a school contains a classroom full of computers, not all students in the school will be operating these computers. Secondly, if several classes per term were cycled into the computer room, there would only be a smattering of programming taught. We, therefore, do have a problem if we wish to exploit the educational potential of the computer.

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HARVEY ELECTRONICS

Harvey Electronics has a full fledged computer center in Syosset. There is one in Westchester, as well. I visited the one in Syosset and saw a nicely arranged display of computers and peripherals.

My guide, Elizabeth Storz, had informed me

that all sales personnel are well educated and versed in the business needs of their customers. The representative would discuss applications for the customer's present and future needs before demonstrating the computer's capability. The object is to fit the computer to the business rather than just make a sale.

Harvey offers an on site warranty without charge, three hours of free training on the computer and thirty day system warranty. Harvey has fifty six years of consumer electronic experience behind it and is confident and proud of its business knowhow.

VISITING THE COMPUTER SHOWS

I spent a good deal of time visiting the various computer and business shows at the New York and Nassau Coliseums during the past two months. The shows were basically the same as prior years. Some new equipment was on display, but nothing extraordinary.

I did visit one show that I enjoyed very much, and that was held at a unique school called "UNIS". The show was called "APPLE/IBM-PC/UNIS FAIR." The Fair was a combined effort of the "New York IBM-PC Users Group", "Big Apple Users Group", and "UNIS". What's UNIS? UNIS stands for "United Nation International School". The school provides education for children of United Nations members'. Its faculty comes from 36 different countries and its children from 100 countries. It is located near East 23rd Street, overlooking the East River; a splendid looking school, indeed.

The Fair was held September 17th and 18th and consisted of more than 65 seminars. I spent both days there catching as many seminars as I could. They ranged from fair to excellent presentations. The speakers volunteered their services freely and were made up of the school's faculty or user group members'. There were seminars on data base and business applications, microcomputer graphics, computer as an aid in concept development in math, computer languages, just to name a few. The last speaker of the day was Steve Wozniak, who presented his classic "garage to riches" success story peppered with his usual humorous interludes. He fielded questions from the audience at the end and made mention of wonderful things to come from Apple next year.

The show printed an interesting souvenir magazine that included the Fair's schedule, the history of UNIS, IBM-PC and the Apple User Groups'. Many of the articles pertained to classroom use of the computer in Science, English and Computer Literacy.

I am looking forward to the next Fair to be presented by this group. I suggest you do not miss it. It was fun and interesting.

COMPUTERS

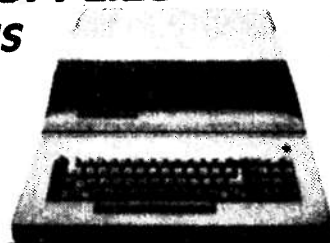
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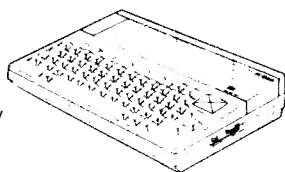
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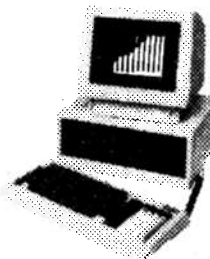


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SHUGART DRIVE: PART 2

TECHNICAL TOPICS by Frank Davidoff

This month's column concludes the two part tutorial article by Frank Stearns on disk drives and discusses the subject of maintenance. Frank emphasizes that the user with little knowledge or experience of mechanical and electrical techniques should not try to perform maintenance him or herself but is much better advised to use a professional maintenance service which has the specialized equipment necessary for some of the tests and adjustments. The article should be considered as useful background information.

A "Cook's Tour" of the Shugart SA-400 Mini-disk Drive Part 2

Frank Stearns-Frank Stearns Associates

14305 NE 13th St Vancouver, WA 98664

(Reprinted from PolyLetter with permission of the author)

LAST ISSUE -- Major points of operating theory and hardware were covered including the data-recording method, sectoring, load button, and motor speed.

INFORMAL MAINTENANCE

This section is for the person that knows something about general hardware design, and has the tools and patience to service his or her own hardware. If you're uncomfortable with the thought of "hardware maintenance in the garage or basement", don't read on. Have a qualified service organization handle your service needs. If you don't know of one nearby, contact PolyMorphic or Shugart for recommendations.

BE SURE SYSTEM POWER IS OFF BEFORE REMOVING OR INSTALLING DRIVES, OR BEFORE MAKING OR BREAKING ANY CONNECTIONS.

HELPFUL BOOKS -- If you are anxious to know more about the SA-400, there are a series of manuals from Shugart that will tell you everything you ever wanted to know about the drive.

They are: The SA-400 OEM Manual and The SA-400 Service Manual, which includes a complete maintenance section. If you plead your case and catch Shugart Technical Support on a good day, you may be able to get these manuals from Shugart no charge.

REPLACING THE HEAD LOAD BUTTON -- This may be the most "major" repair ever done to your drive. Ask your dealer or write to Shugart's Technical Support Department for replacements (address below). If you ask nicely, they'll send you some free. (Make sure you talk to Technical Support, not Parts. The tech people are much more sympathetic.) If you've caught them on a bad day and they talk about a \$100 minimum order, then ask for the nearest dealer or regional Shugart sales office. You may then have to pay the outrageous sum of \$2 to \$3 each.

Once the drive has been completely removed from computer, you'll need to remove the logic board to get to the button. That's easy; just don't forget to remove the head cable connector from the PC board! And be careful -- those head wires are delicate. Removing the old button takes a slight squeeze and downward pressure from a needle nose pliers. The new button will snap right in.

There may be a slight variation with the new button. Run the Confidence disks. If you are getting a high incidence of soft errors, rotate the button (clock- or counterclockwise) 30 to 40 degrees and try again. Keep rotating until you have come full circle or are no longer registering soft errors. If you're very careful, the drive can remain physically outside of the computer and the drive's circuit board allowed to hang free during this adjustment. (If you do, be sure to run a ground wire from the frame of the drive to the computer chassis. If you don't you will get some very odd behavior from the system. Note that it is not necessary to have all the drives connected to the ribbon cable or power supply.) If you're still getting quite a few soft errors and have checked to be sure there is no gross button seating error, suspect drive alignment. Time to find the local drive alignment shop. You can also try cleaning the head (see CLEANING).

SPEED ADJUSTMENT -- In order to keep your drives "dead center" in the speed window, an adjustment may become necessary as the drive ages. The servo circuit in the SA-400 is not the most age-stable.

At the rear of the drive is a small, oblong PC board that piggy-backs on the outside of the drive frame. This is the motor drive circuit, and at its top is a multi-turn pot. This is the speed adjustment. Each drive should have a strobe disk pasted on the disk rotation pulley. With the drive turning a disk and the head loaded (front-panel LED lit, and a florescent lamp shining on the strobe disk, adjust the pot s. that the 60 Hz strobe marks "stand still". Optionally, a frequency counter may be used (refer to the SA-400 maintenance manual). If you need a program to load the head and continually spin the disk, see the disk offer in the "HEAD ALIGNMENT" section below.

CLEANING, HEAD -- Clean the head only if there is visible oxide buildup. Use denatured alcohol (not rubbing), and a delicate touch with a cotton swab. Never let the arm with the button snap back against the head. Don't worry about demagnetizing, the drive does that automatically at the end of each sector-write.

CLEANING, GENERAL -- As time goes by, a lot of dust can build up in and around the drive. Remember, the 8813 fans are pulling a lot of air through those drives. Periodically, say once every three to six months, this dust build-up should be removed. You can use a combination of soft-haired artist brushes and a dark-room negative brush (a brush with squeeze-bulb that can generate short blasts of air). Avoid using your own lung power, there is a lot of moisture in that air.

Recently, one of my drives had a buildup of an unknown gummy substance on the head-carriage guide rods. None of the other drives have ever shown this problem, so to this day it remains a mystery. What was not a mystery was that the head carriage could not move properly. With great care, I disassembled the rod and carriage assembly and cleaned the guide rods with denatured alcohol, which immediately dissolved the gum (and the problem).

If you have a similar problem, removing and reinstalling the rods should change no alignments if you have been careful. You can do so even if the Shugart manuals are not available. But only attempt repairs like this if you've had some experience in performing "blind maintenance".

ALIGNMENT -- This one requires an alignment diskette, oscilloscope, and drive exerciser -- about \$3000 worth of hardware. If you're adventurous, you don't need any of it. What you do need is the SA-400 maintenance manual so that you can understand SA-400 alignment concepts; an alignment-reference disk such as the Poly-recorded confidence disk; and a program I have written called ALIGN.GO. (Send me a blank disk and eighty cents in return postage, and ALIGN is yours no charge.) Alignments should only be necessary if you're consistently having trouble reading all the confidence disks, or if a drive is having trouble reading disks made by two or more outside Polys or another drive on your system.

A radial alignment (see the manual) is very rare, and may never have to be done in the entire five-year life of the drive. Most alignments concern correct placement of the track-zero micro-switch and index timing.

LUBRICATION -- None! Don't! Even the most innocent amounts of lubricants can cause problems later. You may, however, have a problem that I found most annoying -- a squealing cam. This can be solved two ways: First (and this is the preferred method), take a medium hardness graphite pencil and gently run the point through the cam groove (method courtesy Mark Maclin at Poly). Second (and do this only if method #1 has failed repeatedly): If you are EXTREMELY careful, you can direct a split-second burst of spray lubricant into the groove near the cam-follower pin. WD-40 is acceptable, but be sure that it does NOT get on any other surface than the cam disk. The best application technique is to dampen a cotton swab with a lubricant such as WD-40 and pat the cam groove with it. The lubricant will be absorbed immediately, do NOT keep "pouring it on".

WARNING: Do NOT use oil -- period.

WARNING: too much lubricant of any kind may cause the cam follower to slide out of the groove during operation, or get on other surfaces that could contaminate the disk.

PREVENTIVE MAINTENANCE -- here's a quote from the SA-400 maintenance manual: "Preventive maintenance is not required on the SA-400 minifloppy under normal usage." They mean that and it's true. Don't invite trouble.

GENERAL LOOSE TOLERANCE COMMENTS: The SA-400 is one of the most forgiving pieces of consumer computer equipment ever built. It requires almost no attention and will last a lot longer than its "five years". While the data transfer rate is horribly slow by today's standards, the SA-400 is still one of the most reliable data recorders ever built. One can get away with "bit murder" when it comes to alignment, recording level, and speed.

There are a few things to keep in mind. First, the drive does not like diskettes that do not match the current operating environment. If you get a cold disk out of the mailbox this winter, let it "thaw out" and stabilize to your room temperature before using it. The drive does not appreciate sharp blows. Treat the your computer with care. Don't let a drive run without a frame ground. This will be taken of when the drive is mounted in the chassis and secured with screws, but be sure to add a ground if the drive is removed from your computer for service.

When all else fails: Shugart Associates, Technical Support Department, 435 Oakmead Parkway, Sunnyvale, CA 94086 - (408) 733-0100

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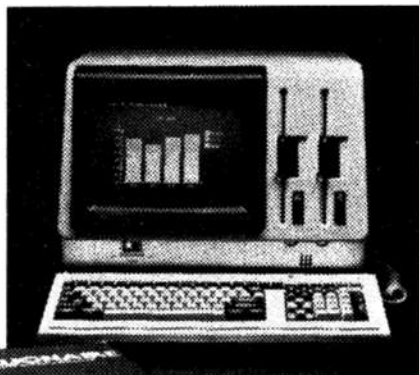
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PICKING LOTTO NUMBERS

LIST

```
10 REM *****
20 REM *
30 REM *      LOTTO NUMBERS      *
40 REM *
50 REM *      By:Lawrence Cashdollar  *
60 REM *
70 REM *****
80 REM *** INTRODUCTION DISPLAY ***
90 HOME : FOR R = 1 TO 320: PRINT "$";: NEXT R
100 PRINT "*****";
110 PRINT "***** LOTTO NUMBERS *****";
120 PRINT "*****";
130 FOR R = 1 TO 40: PRINT "$";: NEXT R
140 PRINT "*****";
150 PRINT "***** By:Lawrence T.Cashdollar *****";
160 PRINT "*****";
170 FOR R = 1 TO 400: PRINT "$";: NEXT R
180 REM *** KEEP INTRODUCTION ON SCREEN FOR A MOMENT ***
190 FOR T = 1 TO 3000: NEXT T
200 REM *** PROGRAM STARTS HERE ***
210 HOME
220 PRINT CHR$ (7)
230 VTAB (6): PRINT "THIS PROGRAM WILL GENERATE SIX"
240 PRINT : PRINT "LOTTO NUMBERS."
250 PRINT : PRINT : PRINT "WHEN YOUR READY, PRESS ANY KEY."
260 GET A$
270 PRINT CHR$ (7)
280 HOME : VTAB (6): PRINT "HERE ARE YOUR 6 LOTTO NUMBERS."
290 VTAB (8): PRINT "GOOD LUCK"
300 PRINT CHR$ (7)
310 REM *** CLEAR OUT ALL VARIABLES ***
320 CLEAR
330 REM *** DIMENSION ARRAY ***
340 DIM A(6)
350 REM *** GENERATE RANDOM NOS.& LOAD INTO ARRAY ***
360 FOR I = 1 TO 6
370 A(I) = INT (40 * RND (1)) + 1
380 NEXT I
390 REM *** TEST FOR IDENTICAL NOS. IN ARRAY ***
400 IF A(2) = A(1) THEN 320
410 IF A(3) = A(1) OR A(3) = A(2) THEN 320
420 IF A(4) = A(1) OR A(4) = A(2) OR A(4) = A(3) THEN 320
430 IF A(5) = A(1) OR A(5) = A(2) OR A(5) = A(3) OR A(5) = A(4) THEN 320
440 IF A(6) = A(1) OR A(6) = A(2) OR A(6) = A(3) OR A(6) = A(4) OR A(6) =
A(5) THEN 320
450 REM *** PRINT CONTENTS OF ARRAY ***
460 FOR N = 1 TO 6
470 HTAB (16): PRINT A(N)
480 NEXT N
490 PRINT : PRINT "IF YOU WANT 6 MORE NUMBERS,"
500 PRINT : PRINT "THEN PRESS ANY KEY"
510 PRINT : PRINT "IF YOU WANT TO END THE PROGRAM PRESS (N)"
520 GET A$
530 PRINT CHR$ (7)
540 IF A$ = "N" THEN HOME : SPEED= 100: VTAB (12): PRINT "I HOPE YOU WIN
A MILLION BUCKS!!!": SPEED= 255: END
550 GOTO 280
```

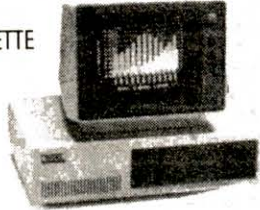

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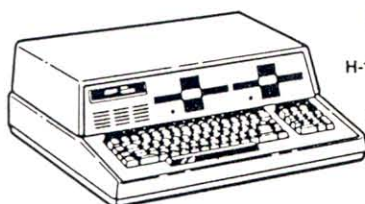
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The Odd or Even Game

```

100 PRINT"ODDS OR EVEN GAME!"
110 PRINT:PRINT"OBJECT OF GAME:"
120 PRINT"TO GET EITHER AN ODD OR EVEN NUMBER AFTER USING ALL SINGLE DIGITS
130 PRINT:PRINT"HOW TO PLAY:
140 PRINT"THE COMPUTER WILL RANDOMLY PICK EITHER ODD OR EVEN TO GO FIRST, BUT
YOU
150 PRINT"MUST CALL OUT ODD OR EVEN.
160 PRINT:PRINT"THE FIRST PLAYER ENTERS ONLY 1 DIGIT THAT CANNOT BE USED AGAIN.
170 PRINT:PRINT"SECOND PLAYER ENTERS BOTH A FUNCTION AND A SINGLE DIGIT.
180 PRINT"FUNCTIONS CAN BE USED MORE THAN ONCE BUT NOT DIGITS.
190 PRINT:PRINT"ALL NUMBER WILL SHOW UP AS INTEGERS.
200 PRINT:PRINT"CALL ODD OR EVEN TO SEE WHO GOES FIRST!"
210 PRINT:PRINT"PRESS ANY KEY TO CONTINUE"
220 GET$:IFA$="":THEN220
230 S=2:Y=INT(9*RND(1)+1):IFLEN(STR$(X/2))>3THENPRINT"ODD":GOTO250
240 PRINT"EVEN":S=1
250 INPUT"NAME OF PLAYER #1":N$(1)
260 INPUT"NAME OF PLAYER #2":N$(2)
270 A$="*+/-":E$="+":GOTO290
280 PRINTN$(S):INPUT"ENTER FUNCTION":E$
290 INPUT"ENTER NUMBER":E:IFE$>9THEN290
300 Z=2+I:IFZ=10THEN430
310 FORI=0TOZ
320 IF E(1)=E THENPRINTN$(S)"*** T H A T N U M B E R U S E D ***":GOTO290
330 NEXT
340 IFE$=LEFT$(A$,1)THENA=A+E:GOTO390
350 IFMID$(A$,2,1)=E$THENA=A+E:GOTO 390
360 IFMID$(A$,3,1)=E$THENA=A+E:GOTO 390
370 IFE$=RIGHT$(A$,1)THENA=A/E:GOTO390
380 GOTO380
390 PRINTE$,INT(E)/A
400 IFS=1THENS=2:GOTO420
410 IFS=2THENS=1
420 E(2)=E:GOTO280
430 PRINT"FINAL NUMBER IS"A
440 IF LEN(STR$(A/2))<4THENPRINT"EVEN WINS":END
450 PRINT"ODD WINS"

```

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ROLL THE DICE

```

100 PRINT"ROLL THE DICE"
101 INPUT"ENTER NUMBER OF ROLLS":R
102 PRINT"ENTER NUMBER YOU WANT TO COMPARE"
103 INPUT"<FROM 1 TO 12>":C
110 N=12:A=8
120 DATA "A","J"
130 DATA ".X.X.X.X"
140 DATA ".X.X.X.X"
150 DATA ".X.X.X.X.X.X.X.X"
160 DATA ".X.X.X.X.X.X.X.X"
170 DATA ".X.X.X.X.X.X.X.X.X.X"
180 FOR I=1TO6:READ A$:A$(I)=A$:NEXT I
190 FORJ=1TOR
190 X=INT(6*RND(1)+1)
200 Y=INT(6*RND(1)+1)
210 IFX+Y=CTHENP=P+1
210 PRINT"55555555555555555555"
220 PRINTAB(A$,"",SPC(N))
230 PRINTAB(A$,"",SPC(N))
240 PRINTAB(A$,"",SPC(N))
250 PRINTAB(A$,"",SPC(N))
260 PRINTAB(A$,"",SPC(N))
270 PRINTAB(9,"YYY"AB$(X),TAB(26)AB$(Y))
272 IFX+Y=CTHENPRINT"XXXXXXXX"
280 FORI=1TO25:NEXT
290 NEXT
290 PRINT"XXXXXXXXXXXX"
300 PRINT"READY."

```

Making Change

READY.
0:10:1

100 INPUT "HOW MANY PROBLEMS WANTED";P1
110 PRINT "HI, MY NAME IS PET.
120 INPUT "WHAT IS YOUR NAME";N\$
130 PRINT "HOW MANY";N\$

1	100.00
1	17 8 9 0
1	14 5 6 0
1	11 2 3 0
1	CHANGE!

280 DIM I(10)
290 DATA "TEN", " FIVE", " ONE"
291 DATA "QUARTER", " DIME", " NICKEL", " PENNY"
292 DATA "DOLLAR BILL(S)", "(S)"
300 FOR I=1 TO 10: READ M\$(I): NEXT
310 INPUT "S (PRICE OF GOODS) AMOUNT DUE \$";CI:P
320 INPUT "AMOUNT OF PAYMENT \$";P
330 C=P-CI:N=C
340 IF C<0 THEN 370
350 PRINT "EXACT AMOUNT NO CHANGE DUE. "360 GOT0310
370 IF C<0 THEN 400
380 PRINT "YOU HAVE SHORT CHANGED ME \$";CI-P
390 GOT0320
400 PRINT "YOUR CHANGE, \$";C:GOSUB 840

410 T=INT(C/20)
420 IF T=0 THEN 450
430 GOSUB 860
440 PRINT T;"\$";M\$(1);M\$(9)
450 C=M-(T*20)
460 I=INT(C/10)
470 IF I=0 THEN 500
480 GOSUB 860
490 PRINT I;"\$";M\$(2);M\$(9)
500 C=M-(I*20+I*10)
510 E=INT(C/5)
520 IF E=0 THEN 550
530 GOSUB 860
540 PRINT E;"\$";M\$(3);M\$(9)
550 C=M-(T*20+I*10+E*5)
560 F=INT(C)
570 IF F=0 THEN 600
580 GOSUB 860
590 PRINT F;"\$";M\$(4);M\$(9)

600 C=M-(T*20+I*10+E*5+F)
610 C=C*100
620 N=C
630 H=INT(C/25)
640 IF H=0 THEN 670
650 GOSUB 1020
660 PRINT H;"\$";M\$(5);M\$(10)
670 C=N-(H*25)
680 I=INT(C/10)
690 IF I=0 THEN 720
700 GOSUB 1060
710 PRINT I;"\$";M\$(6);M\$(10)
720 C=N-(H*25+I*10)
730 J=INT(C/5)
740 IF J=0 THEN 770
750 GOSUB 1100
760 PRINT J;"\$";M\$(7);M\$(10)
770 C=N-(H*25+I*10+J*5)
780 K=INT(C+.5):IF K<1 THEN 810
790 GOSUB 1140
800 PRINT K;"\$";M\$(8);M\$(10)
810 PRINT "PRINT" "3 TO CONTINUE PRESS ANY KEY " :TU=TU+1:IFTU=P1 THEN 1180
820 GET A\$:IFA\$="" THEN 820
830 PRINT "2":GOT0310
840 PRINT "3 WHAT DO YOU THINK THE PROPER CHANGE " :
850 RETURN
860 INPUT "SHOW MANY TWENTY(S) " :
870 IF C<1 THEN T=T+1:GOT0860
880 PRINT "3 YES
890 RETURN
900 INPUT "SHOW MANY TEN(S) " :
910 IF C<1 THEN D=D+1:GOT0900
920 PRINT "3 SUPER
930 RETURN
940 INPUT "SHOW MANY FIVE(S) " :
950 IF C<1 THEN E=E+1:GOT0940
960 PRINT "3 RIGHT!
970 RETURN
980 INPUT "SHOW MANY ONE(S) " :
990 IF C<1 THEN F=F+1:GOT0980
1000 PRINT "3 A-OK!!!
1010 RETURN
1020 INPUT "SHOW MANY QUARTER(S) " :
1030 IF C<1 THEN H=H+1:GOT01020
1040 PRINT "3 YOUR SHARP!
1050 RETURN
1060 INPUT "SHOW MANY DIME(S) " :
1070 IF C<1 THEN I=I+1:GOT01060
1080 PRINT "3 EXCELLANT!
1090 RETURN
1100 INPUT "SHOW MANY NICKEL(S) " :
1110 IF C<1 THEN J=J+1:GOT01100

```

1120 PRINT"3" YES=YES "
1130 RETURN
1140 INPUT"SHOW MANY PENNY(S) 100Penny"2
1150 IFZ<0KTHENKK=KK+1:GOTO1140
1160 PRINT"3 100% RIGHT "
1170 RETURN
1180 PRINT"5000 3 PLEASE CALL YOUR TEACHER "
1190 T$="0":GETT$:IFT$<"0"THEN1190
1200 PRINT"0"
1210 PRINT
1220 PRINT
1230 PRINT"STUDENT NAME: "N$
1240 PRINT"EXTRA HELP NEEDED IN THE
1250 FORI=1TO8
1260 PRINTM$(1),TT
1270 PRINTM$(2),DD
1280 PRINTM$(3),EE
1290 PRINTM$(4),FF
1300 PRINTM$(5),HH
1310 PRINTM$(6),II
1320 PRINTM$(7),JJ
1330 PRINTM$(8),KK

```

FOLLOWING AREAS:0"

continued from page 5

Most students want to operate computers but will not have access to them. The following questions have yet to be answered: Where will the money come from to purchase computers? Are there enough experienced teachers available? Is Computer Science or Computer Math going to become a recognized subject in the Junior High and High Schools? Should it be a Major or Minor Subject? Should the computer curriculum be limited to certain students?

Compared to all other subjects which have undergone very few changes in the last fifty years, the computer is a totally new experience. It has been thrust into the school environment helter-skelter with the knowledge that this machine can do wonderful things. The schools that have trained computer teachers know full well how valuable these computers are in the classroom as well as for administrative purposes.

What does keeping up with the latest technology mean? Well, if what I hear is of any significance, our future stake in technology is on the line. With Japan putting their all into high technology and other countries fighting for a piece of the action, we can lose our number one spot. We could end up in a long drawn out recession. Our weakest link may very well be in the area of education. We had best find a way to upgrade our educational system less we are relegated to a second rate nation.



JOHN, I'M WORRIED ABOUT THE SOCIAL CONSEQUENCES OF THIS COMPUTER SOCIETY. YOU HAVEN'T ASKED ME OUT SINCE THE SCHOOL GOT THESE THINGS.

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Printer interface & cable.....**\$120.**

Second disc drive.....**\$335.**

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for only **\$2379.**

For your personal demonstration make plans now to stop by and see both systems.

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#

CONVERT DECIMALS TO FRACTIONS

CONVERT DECIMALS TO LOWEST COMMON DENOMINATOR FRACTION!

ENTER DECIMAL: IE .21875 AS 21875

ENTER DECIMAL AS NUMERATOR FIRST.

THEN ENTER DENOMINATOR BY COUNTING NUMBER OF DIGITS IN NUMERATOR
FOR NUMBER OF ZEROS NEEDED AFTER ENTERING 1.

EXAMPLE 21875= 5 ZEROS YOU ENTER: 100000 AS DENOMINATOR.

21875
100000

TO QUIT TYPE 0

NUMERATOR 21875
DENOMINATOR 100000

7 / 32
35 / 150
175 / 300
350 / 600

10 OPEN:4:CMD1
100 PRINT"CONVERT DECIMALS TO LOWEST COMMON DENOMINATOR FRACTION!"

110 PRINT
120 PRINT"ENTER DECIMAL: IE .21875 AS 21875"

130 PRINT
140 PRINT"ENTER DECIMAL AS NUMERATOR FIRST."

150 PRINT

160 PRINT"THEN ENTER DENOMINATOR BY COUNTING NUMBER OF DIGITS IN NUMERATOR
FOR NUMBER OF ZEROS NEEDED AFTER ENTERING 1."

170 PRINT"EXAMPLE 21875= 5 ZEROS YOU ENTER: 100000 AS DENOMINATOR."

180 PRINT

190 PRINT

200 PRINT

210 PRINT

220 PRINT"PRINT" TO QUIT TYPE 0

230 PRINT:PRINT

240 INPUT"NUMERATOR":N:PRINTN

250 INPUT"DENOMINATOR":D:PRINTD

260 FOR I=1 TO N

270 X=N*I/Y=D/X

280 IF N=X*INT(D) AND D=INT(Y)*INT(X) THEN PRINT I "/"Y

290 NEXT

310 GOTO220

READY.

SIMPLE BUDGET PROGRAM

GENERAL BUDGET
ENTER: WEEKLY, BI-WEEKLY, MONTHLY
OR YEARLY WAGES 450

FOOD	81
CLOTHING	45
HOUSING	57.5
HOUSE OPERATING COST	54
HEALTH	13.5
EDUCATION & RECREATION	45
GIFTS & CONTRIBUTIONS	27
TAXES	36
SAVINGS & INSURANCE	54
TRANSPORTATION	27
TOTAL BUDGET \$	450

```

100 PRINT"GENERAL BUDGET"
110 PRINT"ENTER: WEEKLY, BI-WEEKLY, MONTHLY"
120 INPUT"OR YEARLY WAGES":WV:PRINTWV
130 PRINT:PRINT
140 REM*** CHANGE DECIMAL PERCENT TO YOUR OWN NEEDS
150 REM*** MAKE SURE THE TOTAL = 100
160 DATA FOOD,.18,CLOTHING,.10,HOUSING,.15
170 DATA HOUSE OPERATING COST,.12,HEALTH,.03
180 DATA EDUCATION & RECREATION,.10
190 DATA GIFTS & CONTRIBUTIONS,.06,TAXES,.08
200 DATA SAVINGS & INSURANCE,.12
210 DATA TRANSPORTATION,.06
220 FOR I=1 TO 10: READ A$:A$(I)=A$:A$(I)=A$:NEXT
230 FOR I=1 TO 10:X=(WV*A$(I))
240 PRINTA$(I);SPC(25-LEN(A$(I))) ;X;Z=Z+X
250 PRINT
260 NEXT
270 PRINT"      TOTAL BUDGET $"Z
READY.
  
```

BY HAROLD KRISS

>O15: @SUM(C15.N15):/R: 06.013: RR

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A FEW EXPLANATIONS ARE IN ORDER NOW FOR THE CHECK REGISTER.

THERE IS AN EXTRA CALCULATION IN THE COMMANDS FOR CELLS G13 AND G14. THIS 'GIF' FUNCTION KEEPS COLUMN G (BAL IN ACCOUNT) CLEAN. WITH THIS COMMAND, IF THERE IS NO CHECK OR DEPOSIT, THE BALANCE SHOWS AS 0.00.

THE /GRM COMMAND MAKES THE COMPUTER CALCULATE MANUALLY. WITHOUT THIS COMMAND, YOU HAVE A WAITING PERIOD AFTER EACH DATA ENTRY. WITH THIS COMMAND, YOU ENTER AS MUCH DATA AS YOU WISH WITH NO WAITING TIME. AFTER DATA IS ALL ENTERED, PRESS THE EXCLAMATION POINT !. WATCH ALL THE ENTRIES IN A SPLIT SECOND.

YOU HAVE NOTICED THE JANUARY TOTALS FOR EACH CATEGORY ENTERED ON THE EXPENSE REGISTER. THIS WAS ACCOMPLISHED WITH THE USE OF THE DIF FUNCTION.

THIS FUNCTION ALLOWS YOU TO TRANSFER DATA OR INFORMATION FROM ONE PROGRAM TO ANOTHER. THE METHOD IS SIMPLE.

LOAD THE CHECK REGISTER TO THE SCREEN.

PLACE THE CURSOR IN H27.

TYPE /S#S DIF.EXP REG (RETURN)

YOU WILL BE ASKED FOR LOWER RIGHT - TYPE 027 (RETURN)

YOU ARE NOW ASKED R(OW) OR C(OLUMN) TYPE R

THAT ROW OF INFORMATION IS NOW READY TO BE PLACED IN THE EXPENSE REGISTER.

CLEAR THE CHECK REGISTER FROM THE SCREEN AND LOAD THE EXPENSE REGISTER.

PLACE THE CURSOR ON C6.

TYPE /S#L DIF.EXP REG (RETURN)

YOU WILL BE ASKED R OR C.

IT WAS SAVED AS A ROW BUT IT IS NOW WANTED AS A COLUMN. TYPE C.

IN A SECOND OR TWO, ALL THE NUMBERS ARE IN PLACE AND ALL TOTALS ARE CALCULATED.

WE NOW WISH TO PLACE THE JANUARY YTD TOTALS INTO THE FEBRUARY PREVIOUS MONTHS TOTALS.

WE WILL USE THE DIF AS BEFORE.

LOAD THE CHECK REGISTER ONTO THE SCREEN.

PLACE THE CURSOR ON H31.

TYPE /S#S DIF.YTD (RETURN)

LOWER RIGHT IS 031

SAVE AS A ROW TYPE R

WHILE WE ARE STILL ON THE CHECK REGISTER, LET'S SAVE THE JANUARY BALANCE. TO PUT INTO FEBRUARY.

PLACE THE CURSOR IN G24. THAT IS THE LAST ENTRY IN BAL. TYPE /S#S DIF.BAL (RETURN) LOWER RIGHT IS G24. SAVE AS R.

WE ARE NOW READY TO START FEBRUARY'S CHECK REGISTER. PLACE THE BLANK TEMPLATE ON THE SCREEN. CHANGE JAN TO FEB.

PLACE THE CURSOR ON G7.

TYPE /S#L DIF.BAL (RETURN) R TYPE

NOW PLACE THE CURSOR ON H29

TYPE /S#L DIF.YTD (RETURN) R TYPE

YOU ARE NOW READY TO ENTER YOUR FEBRUARY TRANSACTIONS. WHEN FEBRUARY IS FINISHED SAVE ALL THE DATA FOR EXPENSE

REGISTER AND MARCH AS WE DID BEFORE WITH THE DIF FUNCTION.

ON THE EXPENSE REGISTER, YOU PLACE THE CURSOR ON D6 FOR FEBRUARY'S TOTALS.

THESE REGISTERS ARE FOR YOUR CONVENIENCE. PLEASE FEEL FREE, AT ALL TIMES, TO CHANGE OR AMEND.

HAPPY VISICALCING!

HAROLD KRISS IS FOUNDER OF KRISS COMPUTER CONSULTANT CO (SPECIALIZING IN VISICALC).

HE IS CONSULTANT FOR PRIVATE BUSINESS AND CONSULTS WITH MANY NASSAU COUNTY PUBLIC LIBRARIES.

HE TEACHES AT SEVERAL PRIVATE SCHOOLS.

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FOR FURTHER INFORMATION CALL: 516 364 0375

1
 2 1 MEDIC 5 HOME MAINT KRIS COMPUTER CONSULTANT
 3 2 AUTO 6 HOME REPAIR SYOSSET, NY 11791
 4 3 CR CRD 7 BUSNS EXP 516 364 0375
 5 4 PHONE 8 CONTRIB
 6
 7 FEB 1984 CHECK REGISTER -> 1200.39 (- PREVIOUS MONTHS BALANCE BROUGHT FORWARD
 8
 9 CHECK DATE CODE PAID AMT OF DEPOSIT IN EXP ACCOUNT 1 2 3 4 5 6 7 8
 10 NUMBER
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 13 FEB 4 DEPOSIT 412.35 1612.74 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 14 14 FEB 10 1 DR TOM 25.00 1587.74 25.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 15 15 FEB 10 1 DR EDON 45.00 1542.74 45.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 16 16 FEB 16 2 TETACO 59.12 1483.62 0.00 59.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 17 17 FEB 18 2 SHELL 45.90 1437.72 0.00 45.90 0.00 89.55 0.00 0.00 0.00 0.00 0.00
 18 18 FEB 20 3 AMER XP 89.55 1348.17 0.00 0.00 0.00 55.12 0.00 0.00 0.00 0.00 0.00
 19 19 FEB 22 3 MAS CRD 55.12 1293.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 20 20 FEB 22 4 NY TEL 42.79 1250.26 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 21 21 FEB 25 5 LILCO 139.95 1110.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 22 22 FEB 25 6 ROOPER 95.00 1015.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 23 23 FEB 29 DEPOSIT 100.00 1115.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 24 24 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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Computer User Groups

LONG ISLAND

THE APPLE POWER USERS GROUP...

President, Jim Lyons

The club meets every third Wednesday of every month from 7 PM to 11 PM at the Syosset High School, Southwoods Road, Syosset. For further information, call Jim Lyons at (516) 758-7912 or 698-9373.

LICA...President, Al Stone

The Long Island Computer Association. Meetings are held at the New York Institute of Technology, Old Westbury Campus every third Friday evening at 8 PM in room 508, building 500. For further information, call Al Stone at (516) 731-1649 or write to P.O. Box 71, Hicksville, N.Y. 11801.

THE FOLLOWING ARE SUB-GROUPS OF LICA AND THE CHAIRMEN TO CONTACT ARE LISTED WITH TELEPHONE NUMBER:

S-100 RICHARD WILSON.... (516) 747-4241
TRS-80 ED ZULKOWSKI.... (516) 938-3320
6502 STEVE PERRY..... (516) 744-6462
680X ROGER KAUCHER.... (516) 796-8746
IBM-PC MARVIN FREIFELD.. (516) 724-0574
Meets at NYIT Commack Branch — Commack Rd. and Jericho Tpke. 2nd Friday

COMMODORE

PHIL COCHEMS..... (516) 333-4213

MACRO...President, Elias Ghuneim

The Metropolitan Apple Computer Resource Organization (MACRO) meets every second Tuesday at the Hawthorne Community Center School, Oceania Street (210th St.) and the L.I.E. in Queens.

For further information, write to MACRO, Attn.: Elias Ghuneim, 37 Alhambra Rd., Baldwin, N.Y.

VIC USERS CLUB...President, Bernie Slesinger

This club meets the first and third Monday of every month at the "Computer Headquarters", 1245 Jericho Turnpike, in Selden. For further information, call (516) 698-9373.

NASSAU/SUFFOLK ATARI USERS GROUP

For information, call Bob Hecht (516) 781-1629.

New York Amateur Computer Club, Inc.

Meets 2nd thursday of every month.

IBM group meets 3rd Wednesday.

S100/CPM group meets 2nd Thur.

NORTH STAR group meets 1st thursday.

(Call Hot Line (212) 864-4595 for location and time for above)

NEW YORK OSBORNE users group meets 1st Tuesday of month. (212) 732-4946

Manhattan Micro (IBM PC)

1st Mon. (212) 724-4756

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Memo #2

To: All Micro Computer Users

From: Al DiBlasi, President

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