Newton Software Exchange

INDEPENDENT
OSI USERS
NEWSLETTER

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EDITOR'S NOTE: We would like to thank those of you who wrote in with helpful comments and suggestions. We are still trying to put together a POKE directory which will be published in the newsletter and hope you will all contribute.

SUPERBOAD SUGGESTIONS

The following come from Barry W. Bird of 6003 Wonderland Lane, Mechanicsville, VA 23111.

Barry has a 1P-Superboard II-8K system.

1) The error code BS B[graphic] (graphic symbol) stands for a Bad Subscript following a DIM statement.

2) When asked for LINE LENGTH, do not type anything, or errors will occur when recording a program you type into memory. The recorded programs appear to be cut off at the line length you entered.

3) Typing PRINT FRE(0) will give you the number of bytes in workspace.

4) Line 0 may be used in a program. Handy when you need "that extra line" in a program.

5) If you need to save bytes, remember that you do not have to call the Index variable after NEXT (unless you have nested loops). Clear screen can be implemented by the statement:

```
FOR X=1 TO 26:PRINT:NEXT
```

<NOTE: In larger systems you need only say: PRINT CHR$(26)>

C2-4P COMMENTS

These from James L. Cass, AA6K, (Jim urges us to identify all hams by their IDs -- so we will) 19559 Tulsa Street, Northridge, CA 91326.

Some bugs in Basic he finds: USR() does not work but gives a FC error; RND has a period of 1861. POKE T+J, PEEK (S+J) on a J loop failed to POKE. X=PEEK(S+J): POKE T+J,X however works okay.

<Have others of you these problems. If so, any suggestions?>

MORE C2-4P

Bruce B. Thomson, WB362TS, 216 Northwest Ter., Silver Springs, MD 20901 sent us a lot of information on his implementation of an RS-232 port.

We will be printing a schematic in which he used the existing cassette interface ACIA in a forthcoming issue. A software listing that allows the use of Basic monitor routines is included on Page 4 of this newsletter.

A couple of useful POKES. These can be used during execution of BASIC programs:

```
POKE 515,0      "UNLOAD"
POKE 517,1      "UNSAVE"
```

Bruce also advises us that he may be able to obtain some Vadic-103 compatible originate boards for members of the Users Group for $14 plus postage. These require a + and - 12V power supply.

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430 I/O BOARD

We received this excellent communication from Ian Robinson,
2831 Fourth Street, Eau Claire, WI 54701

In the Jan/Feb 1978 issue of the Small Systems Journal, the Bugs and Fixes column carried an item about the 430 I/O board. They suggested that providing a more symmetrical UART clock would alleviate some of the reliability problems users might be having. This contribution to the newsletter will describe how that modification can be effected.

Figure 1 shows how a 7474 is connected to provide a divide-by-two frequency divider. The device changes its output state when the clock pulse rises. A high level signal at pin 2, the D input, will result in a high at the Q output when the clock signal rises. Naturally, the not-Q output will have the opposite; a low level signal.

Since the device won't change state at the output unless the clock signal is rising, it can be seen that by connecting the not-Q back to the D input, the D input will be opposite the polarity of the Q output at the time the clock signal changes; resulting in a change of state at the output.

If every upward sweep of the clock signal results in a change of state (from high-to-low, or vice versa) in the output signal we have cut the frequency of the clock signal in half. If this clock signal comes from the 555 timer on the 430 I/O board, we now have a signal that is half of what we need to clock the UART at our familiar 300 baud. If you wish more information on the timing of the 7474, I refer you to the chapter on clocked logic in the TTL Cookbook.

I must confess, here, that I do not own a frequecy counter. For those who do, set the 555 to oscillate at 9600 Hz. Otherwise, use this method: Connect an amplifier to pin 5, the Q output, of the 7474. This will enable you to hear the tone that is going to the UART. The object is to make it come out to the same frequency as the 555 produced before the modification was made.

We all have a good source of that tone on the beginning of our cassette tapes. Simply play the tape and match the tone of the 7474 to it by adjusting the pot just above and to the left of the 555. The 555 circuit will need to be adjusted in one minor way; replace the resistor immediately beside the 555 with a 2700-ohm resistor. This will put the frequency of the 555 within close enough range so that you can make the final adjustment with the pot as described above.

The other resistor in the 555 circuit can remain the same since the duty cycle of the timer is no longer important in this circuit; the output frequency of the 7474 relates only to the rising edge of the 555's output signal.

The frequency adjustment is not as critical as you may think. I have also adjusted it by attempting to load a tape and tweaking the adjustment pot until I got a good load. Remember to tie all of the unused inputs high as shown in Figure 1.

I used the prototyping area marked "O" near the application connector side

of the board. It was necessary to cut one foil on the backside of the board. This is the lead that runs from pin 3 of the 555 (the output) to pin 17 of the UART (the receiver clock pulse input). Figure 2 shows the actual layout of the 7474 as it is mounted on the 430.

This mod seems to work quite well. It has resolved a long standing problem I had with some of my older software. I was getting frequent error messages when I tried to load the tape. At first I thought that my tapes were wearing out; a frustrating situation since I had but one copy of some of them. Between this and the software mods I have made to triple the speed of my cassette loads, I think I will pass up disk-drive technology and hold out for bubble memory.

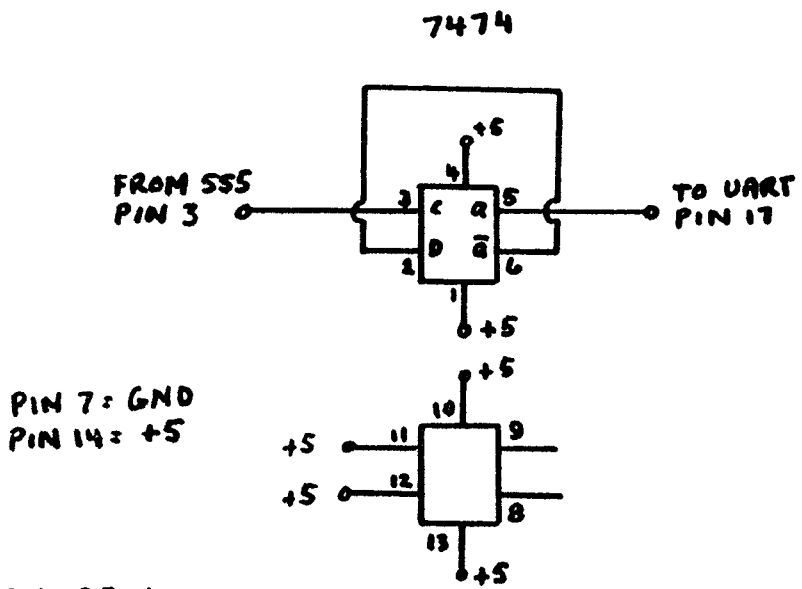

FIGURE 1

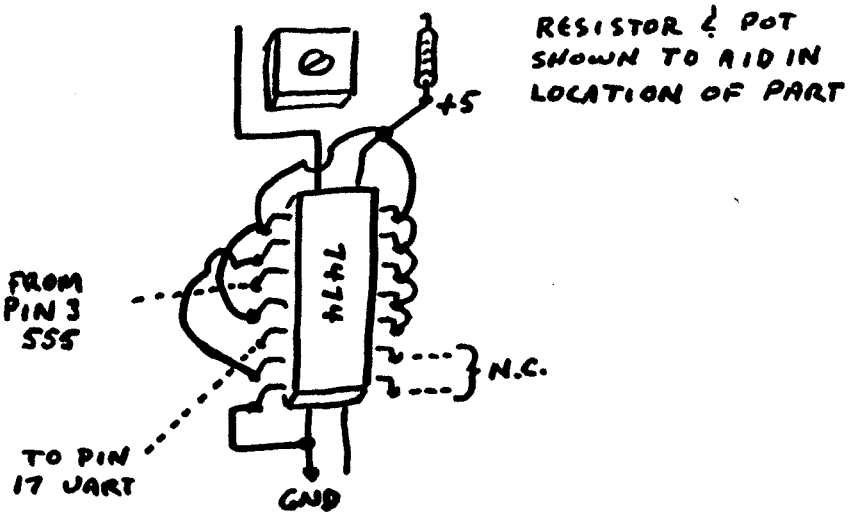

FIGURE 2.

```
5     REM Implementing RS-232 through software
6     REM by Bruce Thomson
10    REM Memory Size = 3000
20    REM Type LF to input message
30    REM Type LF QUIT to END
40    REM RS-232/Cassette switch must be in RS-232 position
60    GOTO 8000
100   POKE 530,1 : REM DISABLES CONTROL C
110   INPUT "***";X$
120   IF X$="QUIT" THEN 2000
130   SAVE : PRINT X$;CHR$(10);CHR$(13)
140   POKE 517,0 : REM UNSAVE
150   POKE 57088,32 : REM ROW ADDRESS
160   X=USR(X) : REM BRANCH TO MACHINE SUBROUTINE
170   IF PEEK (57088)=16 THEN 110: REM CHECKS LF KEY
180   PRINT CHR$(X); : REM PRINTS NEXT CHARACTER
190   GOTO 140
2000  POKE 530,0 : END
8000  POKE 11,208
8010  POKE 12,15
8020  FOR X = 4048 TO 4073
8030  READ N
8040  POKE X,N
8050  NEXT X
8060  GOTO 60
8070  DATA 32, 288, 15, 165, 175, 32
8075  DATA 128, 254, 234, 234, 234
8080  DATA 234, 234, 168, 234, 169
8085  DATA 0, 108, 8, 0, 108, 6, 0, 0, 0, 0
```

SOFTWARE TO SHARE

Rodger Olsen
Aardvark Technical Services
1690 Bolton
Walled Lake, MI 48088

Is a psychologist who also develops and sells game programs for OSI systems. He is willing to swap software with members of the Users Group. Write him for his latest catalog. He also has a way to interface an ATARI joystick to an OSI system. He can also suggest where to obtain schematics for the 540 board.

>>EDITOR'S NOTE: In all fairness to those individuals who are willing to share software, please include a stamped self-addressed envelope when you request info.<<

NEW PRODUCTS

Wayne R. Cole, CLU
409 Washington Ave., Suite 715
Towson, MD 21204

Has developed 6502 Assembler patch for the WP-1A or 65-U complete with required hardware and schematic to drive the Daiblo printing terminal at 45 CPS, bidirectional. He says the configuration saves about one-third typing time. Cost ranges from $250-375. More later.

HELP---!

Charles Rhea
P.O. Box 951
Cookeville, TN 38501

Is a hardware buff who is interested in the innards of the 1P and wants to know if the video section of the C2 is substantially better than the 1P. He is also interested in building an OSI computer from an OSI Bus and boards and wonders if anyone has done that.

INTERESTING PROJECTS

>>EDITOR'S NOTE: We are starting to hear from people with an interest in education, board and card games, language study, and specific industries. Write us about your interests and we will carry the info in a column.<<