PEEK (65)

The Unofficial OSI Users Journal

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Inside This Month:

Column One

Another month has come and gone all too quickly. I didn't make as much progress in restoring the publishing schedule, but I am still confident I can do so in the near future. My thanks go out once again to Eddie and Karin Gieske whose unswerving support have kept this job enjoyable.

This issue was a lot easier to put together than the first one. I think I've encountered all of the little surprises that publishing has in store for me. I finally see some opportunity to start writing articles and software again, rather than spending my time with simply working on the magazine itself. With that in mind, I am seeking out your opinions.

This issue contains a User Survey form for you to fill out and mail in. It is a short questionaire designed to see where the PEEK community is headed and how firm your commitment is to OSI. Many of the issues raised by the survey are especially directed to video system owners. The last significant products for video systems were OS-65D V3.3, Planner Plus, and WP-3-1 and it's been four long years since those products were released. The fact that you're still subscribing to PEEK certainly indicates something about your feelings about your equipment. Are you satisfied with what you have now? Do you think it's futile to make any more investments in equipment that the manufacturer can no longer support? What's on your wish list? High-resolution graphics? Software that competes in the world of the IBM PC and Apple Macintosh?

This is your chance to be heard. In a couple of months, I will publish the results of this survey. I hope I can demonstrate to those vendors who still keep an eye on PEEK[65] that while we are not a growing market, we are still here - ready, willing, and able to put our money where our collective mouths are. And you serial system owners should get your forms in too. You haven't exactly had an easy time of it for the past few years. Four incarnations of your primary operating system later, you're still stuck with a hodge-podge of software that has always been patched rather than re-written.

Getting back to the business at hand, there are a lot of goodies in this month's issue. Leo Jankowski continues with his Beginner's Corner column with tips on using OS-65D V3.3 and windows. Steve McGuiness tells about adding a mini-floppy to your system. Luis Robles shows us a neat way of finding variables and other things in your 65U programs. I've included instructions for using the bulletin board in OSI SIG on CompuServe.

In an effort to fulfill my commitment to business applications, next month's issue will include several features including a way to get true random access data files under OS-65D. We'll also explore some of the issues facing end users from a non-software perspective. I hope that you'll enjoy reading all of this and that you'll keep in touch.

Rick

BEGINNER'S CORNER

By: L. Z. Jankowski
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WINDOWS

OSI 65D 3.3 provides programming power and freedom. The new, powerful commands allow programming of a type not possible before with OS65D 3.2. The programmer is free to design window layouts that are precise, perfect and, dare I say it, aesthetic. Screen updates can be made not only super-smooth but be tweaked to precisely match the programmer's intention! The scrolling menu-screen need never be seen again! The power to achieve all this, and more, lies in the "window", "print at" and "print using" commands.

USES

Flexibility in using these commands comes with practice. But the task is made easier if the programmer thinks in terms of a window rather than a screen and if "print at" is always seen as an action that takes place within the current window. Only the window part of the screen will scroll. A message on the screen outside the window will not move.

"Print at" can use the screen itself as a window. The largest possible window is then the screen itself. For the normal C4P screen the largest window that can be SET is 23 lines by 63 columns. Use, PRINT& (0,0) !(22,62,22).

THE FIRST STEP

Examine line 30 of the "Window Demo" program. The command "PRINT&(0,0)" positions the cursor in the current window's first "slot" - the top left corner. The screen, -- oops WINDOW, is cleared with '!(24). The cursor is then positioned precisely at window location "(18,5);". The ";" prevents a carriage return and line feed - the cursor stays at (18,5)! The stage, window, has been set.

On a C4P that initial window is the screen itself, 24 lines by 64 columns. The numbering for lines and columns is from 0 to 23 and 0 to 63, respectively. A window can always be cleared with "PRINT &(0,0)!(24)". The command "PRINT !(28)" will clear the screen and not just the window! And it must be noted that for any new window the first upper-left address is always (0,0).

PROBLEMS & FIXES

For some applications the largest possible window is required. After POKE 13042,26: POKE 13048,26 the screen will be 27 lines high. The "print at" and other window commands can make full use of the new window size.

The manual states that it is a good idea to finish all "print at" statements with a ";". This is a good practice. Unfortunately, many such "print at" statements soon fill the 132 character line buffer. Further attempts to "PRINT" result in truncated output. Another surprising effect is disappearing input to an "INPUT" statement! The fix for this is simple. When the bug strikes, finish the previous "print at" statement with a ":PRINT" or ":PRINT CHR$(13);" - and the line buffer will be cleared.

A window can be thought of as having a horizontal X axis and a vertical Y axis. Both axes number from zero, from the top left corner of the current window. The first window address is, therefore, always (0,0).

The "set window" command looks like this: PRINT& (X,Y) !(22,W,H). For a normal C4P screen the maximum values for W & H are 62 and 22, giving 63 columns and 23 lines - not 64 and 24. Why is this? Reaching the right edge of the screen forces a line-feed and carriage return. For example, the effect can be noticed in BASIC program listings. A BASIC program line that exactly fits the screen-width, will force a blank line to appear underneath it. For windows, unpreventable carriage-returns and line-feeds (forcing a screen scroll) are disallowed because the object of program control over a non-scrolling window would be defeated.

It is not possible to have two independent windows, say side by side or one above the other. The only way to "write" outside the current window is with the "POKE" command. It is possible to define a new window but only inside the current one. This is a severe limitation. An article by K. Lourash, MICRO May '81, listed an EDITOR program (ROM BASIC) that had the ability to switch freely between two scrolling windows. Very nice. It is possible to simulate several windows thru judicious use of the "print at" command. The effect can, of course, be enhanced with lines drawn on the screen. Unfortunately, any screen scroll would destroy the illusion!

It's easy to spot an incorrectly set window; everything disconcertingly scrolls thru its supposed top boundary!

THE PROGRAM

The "Window Demo" program is a simple utility designed to help the programmer become more familiar with the window command. It is possible to set and view a window's exact size and the associated window setting command. The program also demonstrates how one window can be placed inside another.

In line 50 are the graphics character codes used for drawing the window boundary lines. Lines 80 & 90 input the window's top left corner boundary address. Once this is known, it is possible to calculate the maximum permissible size of the window. See the formulas in lines 150 & 160.

Lines 110 & 120 input the desired window's height and width. The subtraction of "1" from H% and W% is necessary for the windows setting command - see line 360. Remember, BASIC counts the first window line as line 0.

Line 190 constructs two "graphics" - the lines GU$ and GD$. They are printed later with single "print at" statements, see lines 220 & 250. This is power; this is speed! The lines are printed as if they were single graphics characters! After the window side boundaries are drawn in lines 280-290, the window is defined in line 320 with

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"PRINT&(X,Y) ! (22,W%,H%)". Finally, a message is printed indicating how to set the window. The whole process can be repeated by running the program again, defining a new window inside the previous one.

PRINT&(-1,1)??

"Print at" with negative numbers does not work! Examine line 280. If "X%" were set to zero then PRINT&(X%-1,.... would crash the program. (The code "IF X%" means: "if X% is not equal to zero").

IDEAS

Another possible use for the program is bionic eye testing. Define a window with a height and width of one. Now LIST the program and read it as it scrolls by. Use CTRL-S to stop the listing if a closer examination is required.

A more serious idea does spring to mind - with a larger window, of course. A teach speed-reading program? Or spelling? Or .....?

LOOSE ENDS

Sequential File Editor, Sept. '85 issue, pg. 12. If you are using 5 1/4" disks change, at the end of line 1650, "12" to "8".

In the article it was suggested that this line be included:

535 F2$=F1$: GOSUB 1630.

Line 535 forces a file to be zeroed before it is written to. The file on disk must be zeroed if the new edited file is shorter than the original. Otherwise, on a subsequent reload, redundant data will be found at the end of the file.

Aug. '85 issue, pg. 6, change line 9010 to,

```
9010 IF D$(C)=N$ AND C>0 THEN
   C=C-1: GOTO 9010
```

JOIN OSI SIG AND SEE THE WORLD!

Time to Renew?

Be sure to take a look at the mailing label on your copy of PEEK[65] this month. On the first line of the label, at the far right, there is a number between an asterisk ("*") and a colon (":"). That is the date that your subscription expires. Ordinarily, we send out reminders when your subscription is nearly expired. Unfortunately, the post cards we use for this haven't come back from the printer yet, so I am asking that you check for yourself and send in your renewal if subscription is about to expire. Due to the scheduling problems at PEEK[65], I am delaying the price increase. Through May 15, 1986, you can renew at the current prices. Do it now before you forget.

Sign Up for CompuServe!

CompuServe subscription kits with up to 5 hours of free non-prime connect time and User Guide are now available directly from PEEK[65] for only $32.00 plus shipping. That's 20% off the regular price of $39.95.

```
10 REM DOS 3.3 Window Demo, by LZJ. 1 August '85
20 :
30 PRINT&(0,0)!(24)&(18,5);
40 PRINT"WINDOW DEMO PROGRAM."&(18,6)"----------------------"
50 G1$=CHR$(131):G2$=CHR$(132):G3$=CHR$(139):G4$=CHR$(140)
60 :
70 REM -----------------Get window data-----------------------
80 S=14:PRINT&(5,S)"Upper left (X,Y) coordinates of box are: X= ";
90 INPUTX%:PRINT&(46,S+1)"Y= ";:INPUTY%:IFX%<0ORY%<0THENRUN
100 :
110 PRINT&(16,S+4);:INPUT"Window height ";H%:H%=H%-1:IFH%<0THENRUN
120 PRINT&(16,S+6);:INPUT"Window width  ";W%:W%=W%-1:IFW%<0THENRUN
130 :
140 REM -----Check to see if window will fit the screen------
150 IFX%>62-W%THENPRINT&(0,9)!(24)"Window too wide.":GOTO80
160 IFY%>22-H%THENPRINT&(0,9)!(24)"Window too high.":GOTO80
170 :
180 REM -----Make a window line of the right length----------
190 FORC=0TOW%:GU$=GU$+G1$:GD$=GD$+G2$:NEXT
200 :
210 REM -----------Draw upper window line--------------------
220 IFY%THENPRINT!(24)&(X%,Y%-1)GU$;:PRINT
230 :
240 REM -----------Draw lower window line--------------------
250 PRINT&(X%,Y%+H%+1)GD$;
260 :
270 REM -------Draw sides of window; left then right---------
280 FORC=0TOH%:IFX%THENPRINT&(X%-1,Y%+C)G4$;
290 PRINT&(X%+W%+1,Y%+C)G3$;:NEXT
300 :
310 REM -----------------Make the window---------------------
320 PRINT&(X%,Y%)!(22,W%,H%):PRINT&(0,0)!(24);
330 :
340 REM --------What to type to make the window--------------
350 PRINT"PRINT&( X ,  Y )!(22,  W , H ) <--"
360 PRINT"PRINT&("X%","Y%")!(22,"W%","H%")
```

PROGRAMMER'S DELIGHT

By: Luis E. Robles
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Here is a simple and handy programming tool to help you find variables, statement numbers, verbs, etc. in a program. It works as follows:

The program searches for the value contained in variable B$ (statement 210) and saves its position at variable IX (statement 230). Then it keeps going from right to left thru the statement until it finds the beginning of it, value 0 (statement 260).

The advantage of this program is that it helps you search and find anything. Do not use this program to test it, that is, don't list REFA because it will stop searching at instruction 170 where the first *OK* is. I selected *OK* as the end of file because it rarely occurs in a program. Steps one and two below could be substituted by the following instruction:

```
63000 CLOSE:OPEN"LIST",1:
   LIST%1:PRINT%1,"*OK*":RUN
   "REFA"
```

Then just type GOTO63000.

1. List the program you want to work with in a file named "LIST".

2. After listing immediately without closing the file print the word "*OK*", i.e., PRINT %1,"*OK*".

3. Then run the following program:

```
10 REM NAME - REFA - For OS-
   65U Operating System
20 CLOSE:CLEAR
30 FLAG 15:FLAG24:FLAG26:
   FLAG27
40 PRINT "REFA - Allows you to
   find ANYTHING coded in a
   program"
50 PRINT "    Remember you
   must have already listed
   the program"
60 PRINT "    on file LIST and
   printed at the end of the
   word *OK*"
70 PRINT
80 PRINT
90 INPUT "Output device
   (1 or 5) ";Z$
92 IF Z$="1"ORZ$="5"THEN 100
94 GOTO 90
100 DV=VAL(Z$)
110 OPEN"LIST",1
120 PRINT
130 INDEX<1>=0
140 INPUT"Enter string, vari-
    able, etc. to be compared
    ";B$
150 PRINT
160 IF B$="" THEN END
170 FIND "*OK*",1
180 IF INDEX(1)=>1E9 THEN
    PRINT "FILE WITHOUT *OK*":
    END
190 IND=INDEX(1):REM SAVE
    WHERE IS *OK*
200 INDEX<1>=0
210 FIND B$,1
220 IF INDEX(1)>=IND THEN GOTO
    130:REM WENT OVER *OK*
230 IX=INDEX(1)
240 INPUT %1,A$
260 IF ASC(MID$(A$,1))=0THEN
    INDEX<1>=IX+1:INPUT%1,A$:
    PRINT#DV,A$:GOTO210
270 INPUT %1,A$:PRINT #DV,A$
280 IX=IX-1
290 INDEX<1>=IX:GOTO240:REM
    KEEP LOOKING FOR BEGINNING
    OF STATEMENT
```

WRITE FOR PEEK!

THE OSI - 68000

By: David Livesay
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RECENT DEVELOPMENTS

Several copies of the assembler have been shipped including one for a serial system. I haven't personally checked out the program on a serial system so I don't know if all of the control keys work as they should or not. A modified version of the monitor is included with the assembler to allow uploading to the DTACK board. Now that the assembler is available to run on the OSI, the biggest roadblock to developing unique applications for the OSI-68000 system is eliminated.

A few weeks ago I decided to design a new OSI-DTACK interface board. This was prompted because if you have an OSI and an IBM, you would need to purchase both the Apple and the IBM interface boards. My new interface board will not require the purchase of any interface board from Digital Acoustics, and will also allow you to save $50. The second reason is that the right angle connector used for the Apple interface board was difficult to obtain in small quantities. The last reason is that, to some extent, I consider plugging the Apple interface board into the OSI board a little Mickey Mouse. Circuitry to decode the data bus as addresses will be included in case someone decides to build an OSI CPU board with the Western Design Center W65SC816. This new interface board has already been layed out and the first prototypes should be ready at the beginning of December.

It's a shame that the Western Design Center 16 bit version of the 6502 is just now coming out. I remember when the 6502 was announced back in 1975 at Westcon in San Francisco, the MOS Technology people were explaining how they were planning a 16 bit version of the 6502. If it had happened even within three or four years of that time, I suspect that Intel would have been dead and Apple, Commodore or OSI would have had the business market instead of IBM. Now, I think it's too late for the 16 bit version of the 6502. It's more difficult to program than the 68000 and is really not what you could call a true 16 bit processor, but it will run standard 6502 code. We'll just have to wait and see. What I said above about someone other than IBM having the business market probably isn't true. The IBM PC is a perfect example of what it takes to succeed in the market place. You must have a good name in the intended market and be able to convince the average person on the street that you have the best product. The IBM used 1978 technology which was not much better than the 1975 technology used by Apple, Commodore and OSI. In the case of OSI, they had computers which were faster than IBM.

As those who received a copy of OSI HALGOL realize, the first version didn't include the DATASV and DATALD functions. A revised version has been sent out to include these functions. The HALGOL data files are what you would call dynamic files. With dynamic files new sectors can be added anywhere on the disk which means slower access times as the drive moves from track to track in a random manner. One answer to this is to have a program to repack the files and place them on consecutive tracks periodically. As those of you who subscribe to the DTACK Journal know by now, Hal Hardenbergh (the owner of Digital Acoustics) has decided to stop publishing the Journal in order to devote more time to programming. I think that it was probably a sound business decision. As far as I know you can still purchase all the back issues.

OSI-68000 (DTACK) VERSUS OTHER 68000

Why for some people a system such as the OSI with an attached processor such as the DTACK 68000 is a better system than the Atari 520 ST. Today the Atari is limited to 512K. The DTACK B.G. (beaucoup grande) can now be purchased with 2 Mbyte of memory for under $1000. In a short time a 2 Mbyte expansion board should be available. The DTACK boards are available with math chips and the Atari isn't. This combined with the higher clock speed of the DTACK board means that the OSI-68000 combination will be about 5 to 7 times faster than the Atari or the Amiga running math computations.

What about the new OSI 68000 computer? For all of those who hoped that this would be an upgrade to the existing line of computers, I'm afraid that it's a disappointment. This is in fact a VME bus computer with an OSI label on it. If the software exists to transfer data from the existing OSI files to the new computer, then some business users might find it a worthwhile change. For the rest of us it's not too interesting.

DOUBLE DENSITY FLOPPY AND HARD DISK (SASI) INTERFACE

The first boards could be ready at the beginning of Feb. What won't be done will be the software. My first efforts will be to write the software for OS65D for both the floppy and hard disk parts of the controller. I don't expect the OS65U part to be any harder to write, but I have no knowledge of the code in the 65U system. If anyone is interested in working on this, I would be more than happy to let them do so, and if any profit could be made in selling the software, you could have 100% of it. This will be a board that will work in any OSI 48 pin bus system. It will support both single and double density floppies in 5.25", 3.5" and 8" sizes, including the high density 5.25" disks which hold 1.2 megabyte of memory. A maximum four double sided drives of any combination can be supported with from 40 to 80 tracks.

Editor's Note: This article is a reprint of the newsletter that Dave Livesay publishes concerning his work with the D-Tack Grounded 68000 board and the interface for OSI systems that he has developed. The newsletter is from late last year, and is a bit outdated, but I wanted to publish it anyway to let OSI owners get a better idea of some of the alternatives are available. It is especially timely to publish this now in conjunction with the User Survey in this issue. It should be noted that it is normally the policy of PEEK[65] not to publish articles by vendors that are virtually advertisements for their own wares. However, Dave's efforts are not a part of an entirely commercial enterprise and they do not directly compete with any other products currently available to OSI owners. His efforts are a boon to those of us who are caught between an 8 and 16 bit world and are therefore a benefit to all of us. If he manages to make a profit along the way, more power to him and the rest of us.

AN OSI CPU BOARD

I also expect to start work on a new OSI CPU board which will hold 64K of high speed static memory, and will run at 2, 3 and 4 MHz. This board will be able to run with just a terminal and a floppy disk if you wish. The selling price should be under $300 for a 3 MHz version and perhaps $75 more for a 4 MHz board. One feature that this board will have is that all of the on board hardware interfaces can be relocated in memory to the area above $F000. For those with a video system, this means you could have continuous memory up to $CFFF or 52K. A serial system could have 60K of continuous memory. The only problem with this is that the DOS must be changed to use the new addresses of the hardware. For me this will be easy for 65D but not possible for 65U without more information than I have today.

OSI RAM DISK

So how do we build a RAM disk for the OSI. In the case of many computers, we just hang a lot of RAM on a board and use DMA to transfer data between the RAM disk and the main memory. In the case of the OSI, this is not so easy. If you just wanted to transfer a small amount of data, perhaps 2K or so, you might build a board with 2K of memory that's in the computer's address space and 128K to 1Megabyte which was not in the computer's memory which could be transferred to the 2K area using DMA. This is sort of what OSI did with the hard disk interface. So what else could we do? Well we could use the DTACK board as a RAM disk. This is not as fast as some of the other RAM disks on the market which use DMA but it's a lot faster than a disk. With the disk you must go through a long operation to find the file in the case of opening a data file or loading a program. First you must read the directory and then step to the proper track. With 8" disks, it takes about 83 msec to rotate to the beginning of the track and then 166 msec to read the track. To hold 40K of memory will take about 15 tracks. If we assume that the drive can move from one track to another in about 20 msec we will read 16 tracks at an average of 269 msec per track. So we come up with a number like 4.3 seconds. This assumes that there is no software overhead, and we neglect loading the head and selecting the drive if required. With the DTACK board, we can transfer data at a rate of about 40K per second. With a 2 MHz OSI system, the rate will be close to 80 Kbyte per second. So what we have is something which is 4 to 8 times faster than the disk drive.

How will this all work you might well ask. We have two choices. The first would be to treat it much as an OSI disk. You could get the directory from the RAM disks, find out where the file is and then instruct the RAM disk to read out the file. The second option is to treat the RAM disk as an intelligent device and just send a command to find and send the file. We could also include functions to swap areas of memory such as the video memory so that you could have a second screen with help information on it. Obviously, the latter method will take up less memory and should be faster. I would like to at the same time integrate into the system a method to store the variables in the DTACK board. Most programs used today don't run out of program space, but they do run out of data space. When I say this, I have in mind programs written for an OSI or an Apple, not some of the programs written for IBM or other 16 bit machines.

GRAPHICS BOARDS

Digital Acoustics is working on a low cost graphics board which may become part of their disk, keyboard, printer, etc. interface board. I hope that this board will be available as a stand alone version. This board will be usable with an IBM or equivalent color monitor which can now be purchased for under $300. They will also provide support for graphics under HALGOL.

BACKISSUE BONANZA!

The backissues of PEEK[65] hold a wealth of information not available anywhere else. Programs, PEEKs, and POKEs, to solve that problem you've been running into lately. The early issues are especially valuable for you C1P owners. And now all backissues are on sale for $6.00 per year, plus $3.00 shipping for the first year ordered and $1.50 for each additional year. Individual issues are $1.00 each, plus 75 cents for shipping for the first issue ordered and 40 cents for each additional issue. Backissues are available through January 1981. Limited quantites of the 1980 issues are also available.

Continued from page 9

(6) In the same vein as #5 above, I used ceramic capacitors (available from Radio Shack) in the Transmit and Receive data circuits (specifically, for numbers C8 through C12 on D&N's schematic). They solved a lot of problems and the extra cost is minimal when you consider the alternative (which I unfortunately tried) of using parts from your "junk box".

(7) I never did find one of the capacitor values called for in the parts list (360pf for capacitor C10). However, a 390pf monolithic ceramic capacitor was substituted with very good results to date.

(8) In D&N's alignment directions (their figure 4) it might help to know what you're actually looking at. Table 1 describes the signals.

(9) Please note that D&N did not take steps at the board level to correct OSI's motor-on/off or head load oversights. However, they did make available a separate board, DSK-SW, which corrected many of these problems and could even be used with OSI's own board.

(10) Finally, you should have available not only a VOM and the scope discussed earlier, but also a Logic Probe. I purchased Radio Shack's cat. no. 22-302 and haven't regretted it. Not only was it invaluable in the construction of the D&N board, but it came in handy when I repaired the disk drive. The notes in Table 2 helped considerably while I was trouble- shooting the controller board with the probe.

Next time, we will discuss interfacing the drive to the controller as well as some board level troubleshooting of the MPI models 51 and 52 drives. Yes, it is possible to use a double-sided drive by selecting each side with a switch.

Using OSI SIG on CompuServe

This article is written to help you use the message base or "bulletin board" area of OSI SIG. If you are a new CompuServe user, I strongly suggest that you order a copy of the SIG Forum User's Guide from CompuServe. It costs less than $15 and will easily save you that amount in wasted connect time. Enter "GO ORDER" at any prompt on the system to order a copy.

No matter where you are in OSI SIG, entering "HELP" will get you some. To get a list of the commands available, enter "H" or "?". Once armed with that list, you can enter a "?" followed by a command and you will get detailed information about that particular command. The "help" system built into the SIG software is interactive, which means that when you ask for help, the system will display a list of the commands that are available to you depending on what you are doing at the time. Many of the commands have optional settings and when you ask for help about such a command, a list of the appropriate options will be displayed. To get information about a particular command, you enter that command at the "HELP !" prompt. A short description of the command's effects and syntax will be displayed and then you'll be returned to the "HELP !" prompt where you can ask about more commands. Pressing <RETURN> alone at the "HELP !" prompt will return you to the previous SIG prompt where you asked for help. Believe me, this is much more complicated to explain than it is to actually use.

There are two ways to enter commands when you're in OSI SIG. Which way you use depends on what is called your "mode". The first mode is called the Menu Mode, and this is the mode the SIG program automatically sets for you when you first become a member. Using the Menu Mode is as simple as can be since you just pick out the command you want to execute from the list provided. However, the Menu Mode is tedious, costly, and hides several of the more powerful commands available.

This leads us to the second mode, which is called the Command Mode. In the command mode, instead of always seeing a menu, you are merely prompted with "Function:". All of the commands listed here can be entered no matter which mode you select. Let me say that again. All of the commands listed here can be entered no matter which mode you select. To change from the menu mode to the command mode, select item 9 from the Function Menu; Change Your SIG Options.

The message area of OSI SIG is made up of approximately 400 messages. Each message is made up of two parts, the header information and the message text. The header contains the message number, the name and User ID of the person who left the message (the "From: field"), the name of the person that the messages is addressed to (the "To: field"), and the subject of the message.

The SIG will let you read (or retrieve) messages in several different ways, each of which has its own special benefits. The sheer number of these commands may seem overwhelming at fist, but as you become more familiar with the SIG, they will start coming to you naturally. Many of the commands are made up of more than one part. An easy way to get comfortable with these commands is to just enter the command name, as in "RF" (for "Read Forward"). The system will prompt you for all of the extra information it needs.

<u>Read Commands</u>

The R command has several forms. If you enter just R, you will be asked for a specific kind of retrieval, such as Forward (by increasing message number) or Reverse (be decreasing message number). In addition, you may specify a starting message number by giving the command as "RF #". All replies to a message are linked to the original (or parent) message. This link is called a thread. By tracing these threads, the SIG program is able to retrieve messages not only by their number, but by thread as well. Retrieving messages by thread instead of in the numerical order in which they are stored on the board allows you to easily follow conversations as they develop automatically without having to wade through the intervening messages. This is by far the best way to read messages in OSI SIG, because our messages tend to be short blurbs that assume you know what was said in the preceeding message. If you try to read OSI SIG in the numerical/chronological order in which they were written, you will quickly see what I mean.

The command that retrieves messages by thread is "RT". The RT command may be entered as:

RT #
or RT NEW

where "#" is a starting message number. "RT NEW" retrieves messages beginning with those left since the last time you visited OSI SIG. You may also include the word "ONLY" to cause retrieval from the specified thread of messages as in:

RT 2 ONLY

As with all of the Read commands, "RT" pauses at the end of each message and displays the "Read Option:" prompt or menu. In addition to the normal options, "SK" will take you to the first message which is not part of the current sub-thread. "SK ALL" will take you entirely out of the current thread and proceed to the next one. Thus, if you begin to see that you don't care to see the rest of the messages in the conversation you're reading, just enter "SK ALL" at the Leave Option prompt. It is entirely possible to sift through the entire message base in less than 30 minutes with this method.

As mentioned above, when the system finishes displaying a message for you with one of the Read commands, it pauses and displays the Read Options prompt (which may be a menu listing the options or simply "(UA RE T):" depending on how you have your Sig Options set... be patient, this gets clearer soon). At the Read Options prompt, you have three essential options. The first choice is to take no action at this time, and continue to

read more messages. Entering "C" or just <RETURN> will do this. The second option is to leave a reply to the message you've just read. To reply to the message, just enter "RE". You'll then be asked to compose your message. Composing messages will be discussed shortly.

The third option is similar to REply, and is called Use Address. You use the "UA" option when you want to send a message to the person who left the message you're reading, but your new message is unrelated to the current message. "UA" starts an entirely new thread, and is just like leaving a new message from the "Function:" prompt, except that the SIG program will automatically address it for you. Using "UA", rather than just blindly using "RE" helps people who use the "Scan" commands find messages of interest to them quickly.

Leaving a New Message

Now that you know all about retrieving messages, it's time to look at how you leave new messages of your own. The L command is for Leaving messages to other users of OSI SIG. You will be asked to indicate to whom the message is to go. You may respond with an individual's name or something more general, such as "All". If the message is addressed to an individual member, you should include that member's User ID number as well as his name.

When you leave a message to an individual and include his User ID number, that member is told that he has a message waiting for him the next time he logs in. Conversely, failure to include a User ID number means that member will not be notified and thus you run the risk of his missing your message. You will also be asked for a Subject of the message. The To and Subject fields may be 24 characters long. The SIG program automatically inserts your name and User ID number in the From field.

Example:

Function: L
To: John Smith 70130,3257
Subject: Meeting

At this point, you may enter your message. When you have completed your message, and you will be sent to the Leave Option prompt. The options available at this point will be discussed in a moment.

There is a maximum limit to the size of messages which is roughly 30 lines. If you need more space than this, it is a good idea to use the SIG Data Library to hold your message. Besides, if your message is that long, it is likely to be of interest to all members and if it is in the Data Library it won't get bumped off the system as a regular message would be.

The SIG program allows you to compose your messages using either of two text editors. In OSI SIG, the editor called "FILGE" is selected for you automatically. The other editor is called "SED" or SIG Editor. No matter which editor you choose, one important thing to remember is to press <RETURN> at the end of each line that you enter. Lines can be no more than 79 characters long.

If you're using FILGE, you can freely enter the text of your message. When you have finished, enter "/EX" on a new line and you will be sent to the Leave Options prompt. If you're using SED, pressing <RETURN> at the start of a new line will do the same thing. FILGE has editing abilities built into it. To find out more about these commands, enter "/HELP" when you're composing a message. SED has no editing facilities built into it, but you can edit your message at the Leave Options prompt. To get information on editing with SED, enter "? E" at the Leave Options prompt. Alright, we've entered our message and we're at the "Leave Option:" prompt. Some of the most common ones are:

S - Saves your message. You will be asked to specify a section number.

S# - Saves your message in section number "#".

SP# - Saves your message in section number "#" and marks it Private. A Private message may only be retrieved by you and the person it is addressed to.

C - Continue to compose your message. Note that if you're using FILGE, the line pointer is at the beginning of your message. Enter "/B" to move the pointer to the bottom of the message if you want to add more text to the message.

P - Preview. Causes the message you've entered to be displayed as it will be seen by others with the Read commands.

A - Abort. Erases the current message and aborts the Leave function.

If you have any questions about the message system in OSI SIG, just leave a message addressed to "SYSOP". I'll be glad to help.

ATTENTION: DEALERS!

PEEK[65] needs new subscribers and you need new customers, and together we can make it happen with our own Co-op advertising program. This program pays dealers for signing up new subscribers with free ad space in PEEK[65]. Just five paid subscriptions will earn a 1/9th page advertising credit in PEEK[65].

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Call or write today for details and your free promotional materials. Making a PEEK[65] subscription a part of every sale is painless and profitable. This time, "Co-op" pays you.

Interfacing a C1P-II to an MPI Disk Drive with the D&N MEM-CM9 RAM/Controller Board

by Steve McGinnis
20 Curt Boulevard
Saratoga Springs, NY 12866

I upgraded my C1P series 2 to disk with a D&N bare board and a mail-order 5-1/4" MPI drive (used). After a lot of work and help from many sources (OSI SIG on CompuServe and an MPI product manual), I managed to get the system up and running. However, two major problems needed to be overcome: (1) the D&N board had an apparent design "oversight" and (2) the MPI drive only functioned for about 3 hours before it stopped working.

First we will quickly discuss some peculiarities I encountered while building the D&N board and then we will cover some of the MPI connections and a bit of drive theory and maintenance.

D&N Micro Products is based in Fort Wayne, Indiana and was a quality supplier of OSI computer expansion boards for several years. The board described here was available in several different forms ranging from a fully populated RAM (24K) configuration with an assembled and aligned disk controller to a bare board (BMEM-CM9F). I prefer to do as much of my own assembly as possible, so I chose the bare board approach. Also, since I had already expanded my computer to the 48-pin bus using the D&N Expansion Interface Card no. C1P-EXP and 8-slot backplane BP-580, most of the interfacing was already done. Although the expansion was fairly straightforward, I will describe it in another article if there is sufficient interest. I will acknowledge, however, that there were some problems since I had at one time installed an SEB-1 color graphics board which not only introduced a problem on the Data Direction line, but was plugged into the 40-pin connector on the computer which I needed to install the backplane.

Also, don't forget that your computer's built-in power supply is inadequate. I am using a Power-One 12 amp. supply I purchased through JAMECO by mail order.

The MEM-CM9 came with a good description of it's operation, schematics, and a step-by-step construction guide. Although not as well documented as Heathkit manuals, anybody familiar with basic soldering techniques and the proper orientation of IC's would find it to be better than average.

The following notes should be of some help if you choose to assemble this board yourself or need to repair one:

(1) Although not specifically noted, the board uses 1/4 watt resistors throughout.

(2) A minimum of a 20 MHz oscilliscope is required for the alignment of the disk controller section. Since my scope is for television servicing and is only 5 MHz it was totally unsatisfactory. As a matter of fact, the scope I finally used was in my employer's electronics department. Even though it is a 100 MHz scope, there was still some "rounding off" of the waveforms.

(3) Resistors R12 through R33 should not be installed. These are for address line termination. D&N apparently forgot that they had already installed these resistors on their BP-580 backplane. If the resistors are included on the controller board, the signals will be weaker and all types of data problems will result (trust me, I fought this problem for nearly 5 weeks).

(4) Before installing the chips, be sure to check for solder bridges with a VOM after the IC sockets are installed. Although D&N did mention this in the construction manual, it bears repeating here. Double-sided circuit boards are more sensitive to poor techniques and thus require more care in assembly.

(5) The Data Separator was built with the help of previous articles in PEEK[65] so I will not go into any details here. However, you should be aware that the basic circuit is quite reliable. If you manage to get any read/write operation out of the drive, but its operation becomes erratic after things warm up, suspect the drive or the controller board first.

Continued on page 6

Table 1

IC	Pin Number	Signal Description
U65	4	Transmit Clock
U65	5	Transmit Data
U64	4	Receive Data
U64	5	Receive Clock

Table 2

IC	P/N	Type	Pin Number	Signal (Logic Probe)*
U63	6821	PIA	1-18	Non-pulsing with the exception of pin 9 (1=ground and 9=INDEX)
			19	No Signal
			20	High (+5 volt)
			21	Pulsing Signal
			22	Low
			23-33	Pulsing Signal
			34	High
			35-36	Pulsing Signal
			37-39	High
			40	No Signal

Letters to the Editor

Dear Editor,

For a number of years, I have been a loyal OSI user and supporter. Right now I'm using a C8P-DF that has been converted to serial with a TEK 4027 terminal. I would like to be using the machine to help me write exegetical papers and lab write-ups for physics, but I have a couple of small problems.

I had the machine crated and shipped across country about six months ago, and since that time I have noticed a rather strange bug in the system. Whenever I boot OS-65D V3.3, I get a "BREAK" message and the BEXEC* stops. The only way to get the computer to do anything is to disable ‹CTRL›'C' and then run BEXEC*. This isn't too much of an inconvenience, but it is a bit annoying. Does anyone know of anything that might be causing this? I have no trouble booting OS-65U V1.42.

I would like to get a word processor of some type on my system, but I wonder if there are any that I could adapt to my system. My terminal does not have absolute cursor addressing available for full duplex communications. I also need to put a large number of font changes in any file as most of the work I do is in Greek. Does anyone know of a reasonably priced, modifyable word processor that I could obtain and use on my system?

One more problem do I have. I have access to a TEK 4631 hard copy unit which would reproduce whatever I put on the workspace on my terminal onto the paper. However, I have not been able to locate any paper for this machine at a cost of less than fifty cents a sheet! Is there anyone out there who can help me locate some paper for this device?

I would like to hear from anyone who is using TEK equipment with their OSI. I have some nice software that I have written for my system, and would love to share some of these things if anyone could use them.

Daniel J. McDonald
Asbury College CPO 157
Willmore, KY 40390

Dear Daniel,

Strangely enough, I too have had the ‹BREAK› symptom, but only when I invoke the BEXEC* that installs my Hooks into BASIC code. In my case, a simple "RUN" command restarts everything just fine. Perhaps a reader will have some ideas as to the real cause.

As to your word processing problems, the answer is "it depends". No word processing software for OSI systems that I am aware of deal with fonts in any way except for proportional spacing on specially equipped letter quality printers. Dot matrix printers are capable of reproducing any font for any language by "drawing" them as graphics, as opposed to standard English fonts that are built into the printer. By the same token, many dot matrix printers available today have several character sets, if not several fonts, built into them.

All that is required to print such characters is to have your word processor send a command to the printer, and then until that command is cancelled, all characters sent to the printer will be printed in the selected character set or font. Both WP-2 and Edit-Plus would all be capable of handling such a printer and would be compatible with your system with only minor modifications (to handle your non-standard system - nothing I'm sure you haven't faced before).

The crux of the matter is how you are planning on printing your work. If you intend to stick with your TEK hard copy unit for this purpose, I don't think there's a satisfactory solution. You letter appears to be printed by a dot matrix printer. If you only need an occasional Greek character, and your current printer can reproduce them with graphics or a simple command, the software I mentioned above may still be a solution. But if you need to be able to type on your English character terminal and have those characters instantly translated into Greek characters, you're really out of luck short of buying a whole new system, such as the Macintosh which handles such things in stride.

I am overjoyed to see your willingness to share your software. **PLEASE!!!!! Send me a copy of anything you're willing to share.** Your programs may not be the exact solution to someone else's problems, but they could easily help others anyway by demonstrating a technique they hadn't thought of before. You'd be amazed at just how true that is. I would love to be able to make your programs available in the OSI SIG on CompuServe, and if you can write up some brief descriptions, I'd also like to publish them in PEEK[65]! Thanks!

Rick

Dear Editor,

My system (is a) C4P with BASIC in ROM, an OSI 24K memory board, and a D&N memory board expanding memory to 48K and floppy controller running dual 8" single density Siemens disks. I built it up over the years from a cassette based system. My printer is an Epson MX-80 with 2K buffer/serial board. It is used for word processing with WP-6502, modified by Harry Pye to emulate the cassette version. Other uses include membership/mailing lists for several organizations, (up to 200 members). Personal records and class records and grading are also kept on my OSI. I use 65D both V3.2 and V3.3 for software and have done most of my own programming. I also have a version of FORTH which I am trying to find the time to learn. It looks like a fun language.

There is a piece of software I sure could use, something similar to "PRINT SHOP" which I have seen for the Apple II and Atari computers. Not that I need all the cute little figures, but the several type fonts and sizes would sure be useful in the newsletter I publish for my Ham Radio club. Do you know of anything along this line? I would sure hate to re-invent the wheel, as I have done on several programs that I have written. Such a program looks like a monstrous undertaking. I don't even know where

I keep reading the articles in PEEK, and I feel so inadequate. I wish I understood what I read - those guys are so far beyond my meager knowledge that I find myself digging out the manual to find the on/off switch! Someday the light will dawn. Fortunately, Earl Morris is only a radio call away, and I regularly pick his brain.

Good luck in your new job as editor of PEEK[65]. Rest assured there are those of us out here wwho are wowed with the monthly insights, and really appreciate the work you masters of the machines do. Just wish I had something to contribute.

Ray Peterson
949 W. Cutler Road
Edmore, MI 48829-9250

Ray...Ray...Ray...

Tsk! Tsk! **You DO have something to contribute. Your letter proves it!** You say you've had to "re-invent the wheel" on "several programs that I have written". What is that? Chopped liver??? It sure sounds like you've done a significant amount of work on some mailing list and educational recordkeeping software. Those are about #2 and 3 on the Common Computer Uses Hit Parade. And just because "it's been done" doesn't mean that nobody else would like to see your work. When was the last time you heard of anyone who was totally satisfied with a piece of software?

Dollars to doughnuts your software does 4 or 5 things a lot of other folks have been meaning to install in their own programs for years, but have just never gotten around to writing or couldn't figure out how to write at all. We'd all love to see what you've done. Send it in with a description of what it does and how you did it.

And as to your not being able to understand some of the things you read in PEEK, they probably fall into one of two catagories. (1) Software for OS-65U: the 65U BASIC has several commands that are not intuitively obvious to the 65D programmer. Since it doesn't sound like you use 65U, it's no wonder those programs don't always make sense to you. (2) Machine code programs: Even more so than 65U's BASIC, assembly language source code is not simple to understand until you become familiar with the 6502's instruction set. Check out my assembly language lessons PEEK published about a year ago. If you can't find your back issues, they're still available in OSI SIG on CompuServe. Between all of the outside activities you're involved in, I'm surprised you get any programming in at all. But believe me, it's like I always say; the hardest part is getting over the notion that it's hard. Time and effort solve all.

Now then, to your query about software capable of using multiple fonts; most of my reply to Daniel McDonald also applies here. What I didn't mention above is the problem of displaying such fonts on your screen. The reason the Apple][and Atari machines can handle such software so well is because they have dot-addressable graphics built into them. This allows them to display almost exactly what will come out of the printer. On your OSI video system, you need a separate board to perform that task, such as the SEB-3 or the OSI 541 board. Still, this "what you see is what you get" is not an absolute requirement. As long as you can keep the user informed as to where his typing will appear on the page, he doesn't absolutely need to see the precise appearance of the final product as he's typing.

Software capable of handling multiple fonts need not be ultra-sophisticated. As long as the software knows how tall and how wide any individual character is, the job is a matter of keeping track of how much space is left on the line being entered and how many lines the page can hold. A simple look-up table could handle this chore "on the fly" as the user is typing, and another table can handle the code needed to coerce the printer to print the desired character in the selected font. In your case, you'll have to add the GrafTrax option to your MX-80 before you could print differring fonts.

If you want to get extra ambitious, you can install enough software to handle true proportional spacing and kerning. For proportional spacing, you'll need to make a "width" entry in your look-up table for every character you're capable of printing in the given font. Kerning is the technique whereby descenders and other parts of individual characters overlap the adjacent character's vertical position on the screen. If you look at the tail of the "t" in the word "software", you can see how it is fitted underneath the "w" and the final "e" is overshadowed by the preceeding "r". That's kerning.

I hope this helps and that you'll send in some of your programs. We'll be looking forward to it.

Rick

Letters from readers are always welcome here at PEEK[65]. They are my primary source of information about what you're doing with your OSI system and what you need help with and I can never get enough of this kind of information.

I incessantly ask the question "What have you been doing with your system lately?" because it lets me help you with your problems and it also lets me know who I can turn to when a question comes up that I can't answer. The key element in this equation is you. I am always grateful for letters that just tell me about a reader's approach to tackling his particular job. It not only lets me know what's being used, but what people's perceptions of what's available are like.

As always, PEEK[65] stands ready to help you with any question or problem relating to OSI equipment. If I don't know the answer, surely another reader will spot your letter and chime in with help. That's always been the tradition around here and I am proud to say that it remains so. So write today! I'm looking forward to hearing from you.

SOFTWARE FROM PEEK[65]!

Term-Plus
A smart terminal program running under OS-65D V3.3 which allows capturing and transmitting to and from disk. Term-Plus also supports error-free file transfers and cursor addressing on CompuServe. Memory size does not limit the size of files that can be captured or transmitted. Video systems get enhanced keyboard driver with 10 programmable character keys. 10 programmable function keys on both serial and video systems. Utilities included allow translating captured text files into OSI source format for BASIC and Assembler programs or into WP-2/WP-3 format, translating OSI source files into text files for transmitting to non-OSI systems, and printing captured text files. Runs on all disk systems, mini's or 8", except the C1P-MF. $35.00.

Term-32
Same as Term-Plus, but for OS-65D V3.2. Video system support includes enhanced keyboard driver, but uses V3.2 screen driver. $35.00.

Term-65U
Patterned after Term-Plus, Term-65U is a smart terminal program for OS-65U (all versions) running in the single user mode. Allows capturing text to disk files. Term-65U will transmit text files, or BASIC programs as text. The program will also send WP-3 files as formatted text and can transmit selected fields in records from OS-DMS Master files with sorts. Includes utility to print captured text files. $50.00

Data-Plus 65U Mail Merge
A program to insert fields from OS-DMS Master files into WP-3 documents. Output can be routed to a printer or to a disk file for printing later or for transmission via modem using Term-65U. Insertions are fully selectable and are properly formatted into the output. Perfect for generating form letters. $30.00

ASM-Plus
ASM-Plus is a disk-based assembler running under OS-65D V3.3 that allows linked source files enabling you to write very large programs, regardless of system memory size. ASM-Plus assembles roughly 8 to 10 times faster than the OSI Assembler/Editor and is compatible with files for that assembler. ASM-Plus adds several assembly-time commands (pseudo-opcodes) for extra functionality. Included is a file editor for composing files that allows line editing and global searches. Also includes REBUG, a symbolic disassembler which produces source code files from machine code. $50.00

Edit-Plus
Styled after WP-3-1, although not quite as powerful, Edit-Plus allows composing and editing WP-3 compatible files and to have those files printed as formatted text. Edit-Plus uses line-oriented editing, as opposed to the screen editing of WP-3, and also allows global search and replace. Edit-Plus fixes problems in WP-3 including pagination, inputs from the console, and file merging(selectable line numbers from the merged file). Edit-Plus can perform a trivial right-justification, but it does not support true proportional spacing. Built-in DIR command eliminates bouncing back and forth with BASIC. Requires OS-65D V3.3. $40.00

Data-Plus Nucleus
Data-Plus Nucleus is a replacement package to the OS-DMS Nucleus from OSI. All of the programs from the original except SORT have been duplicated and enchanced and new software, the MC-DMS Interface, has been added. The name "MC-DMS" stems from the extensive use of machine code support built into the utilities to replace slower, BASIC code. Features include; (1) MC-DMS Interface code supports up to 8 Master files simultaneously without requiring OPEN/CLOSE commands under Level 3 at every file access. The only 65U software support needed for Level 3 file access is semiphores. This produces a significant increase in speed. READ, WRITE, and FIND commands operate on the field level. FIND skips over embedded garbage between fields, and automatically stops on the last record in the file. (2) Machine code DIR utility. Ultra-fast. Automatic paging. ^C interrupt. Can selectively list by file type or can search for file name matches with wildcards. (3) Machine code file manager. Creates, deletes, or renames files in a flash. The file manager is linked to the Master/Key file creation utility. (4) Machine code file transfer/merge. Grabs up to 30 records per pass. Single/dual drive. Fully selectable field specifications. Also allows searching for matches in source and destination files for linked merges. (5) Machine code single/dual drive floppy diskette copier. Moves up to 7 tracks per pass. (6) Disk-based mailing label printer. Stores printing format designs on disk. Selectable fields and record range, Key file access, searches, and more. (7) Disk-based report writer. Stores report format designs on disk. Same features as above, but with formatted columns by type and width. (8) Edit-Plus 65U. Most of the same features as the 65D version, but with a significantly smaller workspace. Suitable for correspondence and form letters. (9) Data-Plus Mail Merge. Complete documentation allows implimenting the MC-DMS Interface into your own applications. CAUTION! Some parts of this code are very young. The MC-DMS interface, DIR, COPIER, and XFER programs are solid. Some of the BASIC utilities and Edit-Plus may well need some work. If you're willing to try this on an "as-is" basis, you can get a 50% discount off the final price of $150.00 if you order before ~~March~~ MAY 15, 1986. That's just $75.00!

Please remember to include postage when you order

PEEK[65] Reader Survey

Name_____
Address_____
City_____State_____
Zip Code_____

OSI Computer Model_____
Memory_____ Floppy Drive Size_____
Hard Disk (Y/N)____Size_____
Printer_____
Modem_____
OS-65D V3.____ OS-65U V1._____

Which commercial programs do you use most (in order of use)?
1._____
2._____
3._____

What software do you want that you haven't been able to find?
1._____
2._____
3._____

User Survey

Yes, it's that time again. I am asking that you participate in this survey in order to make PEEK serve you better. Don't feel obligated to fill in your name if you don't want to. By the same token, I hope you will. You won't get pestered with ads in the mail. I'm sure we're all on enough mailing lists already.

The questions in the survey reflect my feelings that for many of us, the best way to help our investment in OSI equipment to keep paying off is to look at various upgrades to both the hardware and the software.

It comes as no surprise to video system owners that one of the biggest stumbling blocks to implimenting new and sophisticated software is the OSI video display boards' limited resolution. If we are to move ahead as a community, I think it is important that we take affirmative steps to establish a single upgrade path that we can all support and afford. Once a standard has been selected, we can all move on together.

The 541 board from OSI had the ability to produce high resolution display while keeping compatible with current OSI software, but it is no longer available. The Generic Computer Products Color Plus board is a good alternative since it has the essential software and can be used without losing your current OSI video support. While Generic has not been producing these boards in some time, I am sure they could be pursuaded to make another batch if we provided them with enough orders up front. Of course, we shouldn't overlook the

New versions of the 6502 are getting cheap, as are those in the 68000 family. How much would you be willing to pay to upgrade your system?

$0 (not interested)_____
$15 (simple CPU chip swap)_____
$100-$200 (minor upgrade)_____
$200-$500 (major upgrade)_____
$500-$1000 (68000 co-processor) _____

How much would you be willing to pay for a new graphics board?

$0 (not interested)_____
$50-$100(bare/partially populated)_____
$100-$200(fully pop'd/medium res)_____
$200-$500 (fully pop'd/high res)_____

What topics would you like to see covered in PEEK[65]?

1._____
2._____
3._____

possibility of letting the hardware enthusiasts design a totally new board from scratch. I am sure that if this survey shows that there is a strong commitment by a good number of people to support a new graphics board that one would be forthcoming.

On the software front, I need to know what you use your system for now, and what you would like to be able to do in the future. If you're looking for a sophisticated package, try to indicate how much you'd be willing to pay. The popularity of OSI-Calc certainly tells me that a real spreadsheet program would be well received. Word processing and data base management remain popular topics. What else do you need?

Finally, as always, PEEK[65] is constantly looking for your suggestions for new articles. Feel free to include anything you'd like on a separate sheet of paper. The form is merely for convenience. But do fill out the form and mail it in. You'll be doing yourself and the rest of us a big favor.

THANK YOU!

SPECIAL OFFERS FROM T.O.S.I.E

TOSIE-IV PADDLE BOARD
FLOPPY DATA SEPARATOR

This popular bare board kit is actually a multiplexer, disk switch, and very stable data separator - sufficient to allow mating most floppy drives with virtually any OSI computer with up to 4 surfaces. The 8 74LS chips required make for economic population, flexibility, and stability. Complete instructions and schematics are included. Although not fancy, it should help resolve many of the problems encountered in matching new drives to OSI machines. Since it is all on the board, minor mods are required on the OSI board to bypass some of the old circuitry. Available from Paul Chidley, RR#2, Ennismore, Ont., CANADA K0L 1T0 for $20.00 total. Non-Canadian orders should be made in US dollars.

ORDER TODAY!

OSI-CALC
NOW FROM PEEK[65]

With a base of over 50 copies in circulation since its introduction several months ago, OSI-CALC has already proved itself.

It is a full-featured spreadsheet that is interactively on-line with 26 columns by 36 rows. Paul Chidley has written it entirely in BASIC to allow for user modifications, but judging from its speed, you would never know it. It does require 48K on C4/C8P's and we understand that a 32K version for C1P's is in final testing. The program runs under OS-65D V3.3 on either 8" or 5-1/4" floppies, and while it is written for video systems, serial systems should be able to modify it to suit their terminal's control codes. Paul has put the program in the public domain, and PEEK[65] is distributing it for just $10.00 plus our normal $3.70 shipping charge.

AD$

Boards for sale: (2) 510C's, (1) 527A, (1) 524A, (1) 535, (3) 520B's. Call Ron at (412)-441-3000.

48K RAM plus 456K disk space OSI C4P-DF -- a C4 with dual 8 inch floppies, color, Generic Computer MEM+ board populated to 48K, and spare OSI memory board (24K). Includes OS-65D V3.2 and V3.3, OS-65U, SAMS manual, documentation and disks. NEC green monitor with sound also available. All in good working order, used for business. Call Steve at (305)-661-5039.

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