PEEK (65)
Unofficial OSI Users Journal
1819 Bay Ridge Ave., Suite 220
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Editor: Al Peabody
Tech Editor: Dick McGuire
Contributing Editor: Corky Kirk
OSIO Editor: Wallace Kendall

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Column One

This column should probably be subtitled "the evolution of OSI from the standpoint of a dealer/ user." The changes which we have seen in the short two years we have dealt with Ohio Scientific, first as users and then as dealers, have been nothing short of dramatic. In our position as a users' journal, we may seem to emphasize the negative in commenting on relations with and documentation from the factory, so I think some history and acknowledgement of the progress we have seen is entirely in order.

Two years ago, pre-PEEK(65) and pre a lot of other stuff, OSI had real problems with documentation, hardware reliability, customer relations and even dealer relations. The excellent design and features of OSI hardware had resulted in fantastic growth, far too fast for the factory to deal with. Suddenly it wasn't just Mike and Charity and some friends making a few computers: it was thousands of owners, hundreds of dealers, all screaming for whatever was hurting them most! Something had to be done, or OSI would follow some other small computer firms into bankruptcy, the officers into nervous breakdowns. To the credit of Charity Cheiky, Paul Warren and the others involved in management, things have been done and continue to be done, though much more is still needed. Some examples of achievements:

Contracting with Lifeboat Associates to handle distribution of non-OSI software, opening the CP/M bus to us;

Contracting with Howard Sams to print the excellent C1, C3 and C4 technical manuals

Printing and distribution of the Technical Newsletters (If you are not receiving them, contact your dealer -- they are really worthwhile);

Orders-of-magnitude improvement in the reliability of the hardware. When we receive a box from the factory now, we expect it to contain gear which works;

Introduction of the C3 letter series, now includig the C3-D tabletop computer with 2 MHz operation and a 10 Mbyte hard disk;

The gradual rewriting of OS-DMS and the manuals which come with it. Formerly totally useless, the manuals now can actually be of some help, sometimes...

As Paul Warren says, they are eating the elephant one bite at a time. Given the history of the past few months, I confidently predict:

A total rewrite of DMS, compatible with all previous editions but with much neater code and integration of most of the major accounting modules;

Simultaneously, a subcontracted, professional rewrite of the DMS manuals, at a level of quality equal to the Sams manuals;

A national service network with ready parts availability, as close and handy as your local GE repairman;

Much greater communication between the factory and dealers, to the point that important customer questions can be answered in hours or days rather than weeks or never as has been the case.

When will all these miracles occur? Some have happened. Others are in the works. I like to think that PEEK(65), OSIO, the other independent newsletters and the coordinated efforts of dealers have had something to do with all this. In any case, it feels very good to be associated with OSI right now, and I predict it will feel even better by the time the weather gets cold.

Al

Tech Notes

by Dick McGuire

Have you got some serial device which uses other than ASCII 7-bits, no parity and two stop bits? Do you want to? Well, it's very easy to do with that marvel of marvels the CA 10-X board commonly called the 550. The CA 10-X has up to 16 ports each with four buffers. It has a read, write, status and a control buffer. The read and write buffers have the same address as do the control and status registers. The read and write buffer for port #1 is at $CF00 and the ontrol/ status register is at $CF01. The addresses for port #2 are $CF02 and $CF03.

A write (POKE) to the read/write buffer outputs a character and a read (PEEK) inputs a character. Likewise a write to the control/status register changes the contents of the control register while a read inputs status. Options available are a clock divider (1,16,64), master reset, 7 or 8 bits, odd or even parity, 1 or 2 stop bits, RTS high or low and INT enabled or disabled. Status available is Rx/Dx data registers full, data carrier detected, clear to send, framing error, receiver overrun, parity error, and interrupt request.

Of course, if the data to be read is not ASCII in strings of less than 72 characters, a machine language routine must be written to handle the input. A good way to handle t would be to read the port and put the input stream in memory. Then an INPUT#4 (read from memory) could be done to get the data into basic.

WEAKEST LINK

Wallace Kendall

The Washington Post on June 1 carried an AP story saying that district court officials in Grand Rapids, Michigan, are dismantling a computer system and replacing the equipment with humans.

The computer system was installed in 1975 at a cost of more than $400,000, to speed the arrest of scofflaws, keep track of parking and traffic fines, compile driver penalty points, generate court date notices, and avoid long jail waits for a trial date. But -- and here I quote the story exactly as it is printed, "...it is able to complete only one of those functions, recording the penalty points."

You're probably way ahead of me already, so I won't belabor the point I'm about to make: To hold a load you use a chain, not a link. A chain is made up of a lot of links. A chain does not have the strength of an average link, nor the combined strength of all its links. It has only the strength of its weakest link.

A computer system, like a chain, is made up of a lot of links. The first link is an analysis of the requirements to be met. Judging by the goals given above, the requirements for the court's computer system were set forth pretty well. But somewhere a link broke -- what could it have been?

Specifications? Were the broad requirements then analyzed in detail, so as to permit a number of manufacturers to show how their equipment would do the job?

Design? Was the system planned completely, by a group of people fully qualified by education and experience, and not beholden to any specific manufacturer? Did the designers select appropriate system software -- language and operating system?

What about the hardware? Were the devices for memory, data entry, data display, and data transmission properly chosen, installed, and tested?

Were the plans for entry, storage, and retrieval of data clear?

Was all the software, including the user programs, fully tested by software engineers, then tried out in practice by the ongoing staff before switchover?

Were the policies for selection, training, and continuing employment of personnel to use the system effective?

What about introduction plans? Was there a determined and skillful effort to show all employees of the system how the computer would support their work, or were they permitted to harbor mistaken and rebellious thoughts of a monster that would be taking their jobs?

What support was given by top management? Were the people in charge cooperative, supporting, and encouraging, or were they sitting on their hands and waiting for the system to prove that the old ways were the best ways?

What support was sought from the public? Was there any organized effort to explain to the people who would pay for the system, and whose lives would be affected by it, what the system would do for them? How it would save money and time, improve the quality of the local

justice, avoid unnecessary time in jail by innocent people? Was the public encouraged to demand -- and expect -- improvement in the service, or was public attention directed primarily to the cost of the computer system? Was there the suggestion that this was, after all, an unnecessary frill?

I certainly don't know the answers to these questions. I hope someone does, and I'd like very much to know them.

One thing I'd wager a small sum on: whatever the weak link was, it wasn't the computer. My guess is that the weak link was one or more of the others described above. A people link, not a hardware link.

Letters

A couple of hardware developments that we have pioneered down here may interest your users, particularly those with 230V/50HZ and PAL colour television standards.

1. PAL Colour Modulator - the new OSI C4P puts out great colour for NTSC colour standard, but of course is totally incompatible with the PAL standard.

   Our research engineers have designed and produced a colour converter/ modulator which enables a C4P series system to be directly connected into the aerial socket of a standard unmodified PAL colour T.V. set. The quality of the colour is superb and provision has also been made for sound to be transmitted through the RF signal.

2. C1P Display - you can generally tell a C1P user by his reddened eyes caused by eyestrain resulting from trying to decipher a full page of program text.

   We have designed a modification (which also gets rid of 50HZ jitter) that generates three scan lines on the T.V. display between character rows which makes all the difference when it comes to readability. A switch is included with the circuit so that the user can switch back to OSI standard display for graphics display.

Computer Consultants Ltd.
P.O. Box 2633
Auckland, New Zealand

ED:

RE - where to peek & poke in 65U for special info.

Ron Fial (Fial Comp) interfaced an AF, IBM to our Challenger III. He reduced memory size by 256 bytes and poked a routine in upper memory using BEXEC*. Since there was room left over, I store today's date, page counter, device #, etc., in that area and all my programs then have access to the data via PEEK's.

Bill Brown
Cornelius, OH

ED:

1. New to computer use.

2. Having a hard time digging up software programs information--If you have a list with descriptions as well as prices I would appreciate receiving same.

3. Need to know if C2-4P or the 8P disk series can be set up to handle the Fortran and Cobol (OS-CP/M) or if someone has already conceived another way.

4. Do you have any info on the 560Z multiprocessing expander with manual, Z-80 and 1-6100 microprocessors (see Q3).

Alan Korn
Harrisburg, PA

ED:

Among the answers I would like to see are to these questions:

- Why only 72 character input strings? Can they be increased to 255? (A really frustrating problem!)
- How can I simulate the "GET" statement? (of particular use in word processing and menu selections)
- How could I go about extending the line length of the superboard to 64 or 80 characters?
- How can I vary the output speed for various devices other than the tape recorder?

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Two interesting tricks I have found are the following:

- Transfer of programs and data via telephone--long distance at that--simply by holding the telephone to the speaker of the tape recorder or amplified output on the transmitting end and inputing on the receiving end by holding the receiver to the mike of the recorder (an automatic volume control on a tape recorder seems to help here a lot). Rate of success of this method depends a lot on the quality of the telephone connection.
- Optical I/O ports - using the unused lines at the bottom of the screen, simply place a cadmium sulfide cell in front of a point on the line where you poke on and off a block of light, I think I used ASCII 161. With the cell in series with a power supply and a relay, you can operate various devices from the computer (quite a few devices using combinations of points and a decoding circuit). Radio Shack sells a relay controlled triac device in a neat "black box" configuration which requires only approx. 5 volts for control current and which will handle about 1 amp A.C. with 1500 volts isolation. Of course, the entire circuit is isolated from the computer optically. (Entire cost approx. $4.50!) I've used this arrangement to turn lights off and on and control my tape recorder.

Bill Devinney
Washington, DC

ED:

Congratulations on a fine publication. This is the first OSI journal to be of some value. Up until now most were rip-offs. Keep up the good work!

I have a Challenger III, 48K with OS-65U, dual dble. diskettes, NEC Spinwriter, and an Intecolor 8001G color graphics terminal.

I am looking for the following software:

- To communicate with an IBM 370 and store data from it on my diskettes.
- Graphics programs, especially bar charting, for the Intecolor 8001G.
- Graph/plotting routines for the NEC Spinwriter.
- Way to interface:
  Removable cartridge hard disk
  Punched card reader (Documation type)
  IBM 9 track 800 or 1600 bpi tape drive
- DMS file to CP/M & vice versa conversion programs
- Apple or TRS-80 emulator program.

I recently talked to a Vice President of OSI and tried to encourage him to keep you supplied with the latest information from the factory. Perhaps PEEK(65) readers could send a deluge of similar type letters to the factory to encourage him further.

Terry V. Pukula
Chicago, IL

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AND VICE VERSA

ED:

We have a C3 with a recently acquired 23MB hard disk and CP/M, and have two problems which we would appreciate any help on.

First, our CP/M will cause problems on the hard disk operation if the 527 board is left plugged into the bus. If we unplug the board (even though there is no power to it) the hard disk does not do its bad intermittent things. We assume there is some sort of duplicate coverage by common chips. Can you shed any light on it?

Second, our CPU now has the 550 board using only Level I and one post. I am told also that the unit came with the necessary Level II ships for a Real Time Clock. We would like to be able to utilize a Real Time Clock to print out the time on each program as well as the time to run the program.

We have been unable to find any programmers who can be of assistance to us and trying to get an answer from the company is like conducting the Panmujon conference.

We would be more than willing to pay for software or consulting to solve these minor problems.

Keep the practical stuff coming.

R.J. Murray
Hayfork, CA

R.J.:

Your 23 MB-CP/M problems are caused by CP/M's need for additional RAM at the same address used by the hard disk buffer. CP/M version 2.0, now available from Lifeboat Associates in New York, is supposed to solve this problem. Has anyone out there tried it?

Al

ED:

I have enjoyed reading your mag and wish you success in the future. I thought that it was about time for me to put in my two bits worth.

G.R. Laverick asks how to be able to print the special graphic characters on his C8PDF. Ans: the software always strips the 8th bit as a parity bit and checks to see if it is a valid ASCII character, and the special graphics characters are not. This is done to make the C8 compatible with standard CRT's. I am typing this letter on a C8P with a standard CRT. If you use 65D instead of 65U you can print graphic characters with CHR$(x) by using the following pokes.

```
POKE 9634,255
POKE 9660,0
POKE 9664,0
POKE 9656,0
```

For people who would like to have input statements that don't scroll the screen here is a poke that will disable the LF function.

```
POKE 9644,42  will disable LF
POKE 9644,98  will enable LF
```

Finally John Leahy asks about 'intelligent' games. I have just recently received a copy of a game by Aurora Sotware called Dungeon. It was quite well documented and a lot of fun to play. It was the first game I could convince my wife to play on a computer, and now she uses it quite often. The game is a simiplified simulation of the TRS Dungeons and Dragons. It is well written and plenty complex to make it challenging to any adult.

Rod Schiffman
Salt Lake City, UT

ED:

I'm sure many readers have wondered how to create auto-loading machine language cassette tapes for the C1P. Here are two methods:

Use PRINT statements. If the SAVE flag is on, data that the program prints are sent to the cassette port as well as the screen. The tape is created by printing the commands as if the user were entering them from the keyboard. Program A shows this technique.

There is one major drawback to this method: speed. When writing to the

cassette, the SAVE routine automatically inserts 10 nulls after each carriage return. This is done so the LOAD routine has time to process the statement before the next line starts. Unfortunately, this elongates the machine loading time by a factor of 3 (2 nybbles, a CR, and 10 nulls). The second method eliminates the nulls by not using SAVE; the program directly accesses the cassette port using WAIT and POKE. As long as the program doesn't spend a lot of time between pokes, the tape will be created at full speed. Program B is an example of this procedure.

In both routines, the program to be written to tape does not have to reside in DATA staements; it could be PEEKed from memory, converted to characters, and then written out.

```
 10 REM
 20 REM PROGRAM "A" - AUTO LOAD WITH
 40 REM PRINT STATEMENTS
 50 REM
 60 REM CREATE A TAPE WITH A SIMPLE
 70 REM PROGRAM THAT DISPLAYS A MESSAGE
 80 REM ON THE SCREEN AND THEN LOOPS
100 REM
110 REM WAIT FOR THE USER
130 REM
160 PRINT "START TAPE AND HIT ANY KEY"
180 FOR I=1 TO 100 : NEXT
200 POKE 530,1 : POKE 57088,0
220 IF PEEK(57088)=254 THEN 220
230 POKE 530,0
240 PRINT "HERE WE GO..."
260 REM
270 REM READ/PRINT UNTIL "END"
290 REM
300 REM DATA ON THE TAPE LOOKS LIKE:
320 REM
330 REM DATA, (CR), (LF), 10 NULLS
340 REM
350 REM THE MONITOR WILL IGNORE THE
360 REM LINE FEED AND NULLS
370 REM
380 READ C$ : IF C$="END" THEN 430
400 PRINT C$ : GOTO 390
430 REM
440 REM ALL DONE
450 REM
460 PRINT "TAPE COMPLETE" : END
900 REM
910 REM FOLLOWING IS THE DATA TO BE
920 REM WRITTEN TO TAPE
930 REM
940 DATA ".0240/A0",00,B9,80,02,F0,06
950 DATA 20,2D,BF,C8,D0,F5,4C,4D,02
960 DATA ".0280/41",55,54,4F,2D,4C,4F
970 DATA 41,44,49,4E,47,32,45,58,41
980 DATA 4D,50,4C,45,00
990 DATA ".0240G"
```

The astute reader may have noticed that - since the cassette port is also an input port - tapes may be read using PEEK and WAIT (using a different wait value, of course), thereby removing some of the problems encountered when using an INPUT statement (particularly commas).

In closing, let me add this caution: since there is no error detection or correction using this type of loading, it's a good idea to limit program sizes to around 500 bytes. If the load does bomb out, there isn't so much to reload. For larger programs the OSI object tape format and associated loader should be used.

Michael B. Carroll
Tulsa, OK

```
 10 REM
 20 REM PROGRAM "B" - AUTO LOAD WITH
 30 REM WAIT AND POKE
 50 REM
 60 REM CREATE A TAPE WITH A SIMPLE
 70 REM PROGRAM THAT DISPLAYS A MESSAGE
 80 REM ON THE SCREEN AND THEN LOOPS
100 REM
110 REM WAIT FOR THE USER
130 REM
160 PRINT "START TAPE AND HIT ANY KEY"
180 FOR I=1 TO 100 : NEXT
200 POKE 530,1 : POKE 57088,0
220 IF PEEK(57088)=254 THEN 220
230 POKE 530,0
240 PRINT "HERE WE GO..."
260 REM
270 REM READ/WAIT/POKE UNTIL "END"
290 REM
300 REM DATA ON THE TAPE LOOKS LIKE:
320 REM
330 REM DATA, (CR)
340 REM
380 READ C$ : IF C$="END" THEN 430
390 FOR I=1 TO LEN(C$) : WAIT 61440,2
400 POKE 61441,ASC(MID$(C$,I,1)) : NEXT
410 WAIT 61440,2 : POKE 61441,13
420 GOTO 380
430 REM
440 REM ALL DONE
450 REM
460 PRINT "TAPE COMPLETE" : END
900 REM
910 REM FOLLOWING IS THE DATA TO BE
920 REM WRITTEN TO TAPE
930 REM
940 DATA ".0240/A0",00,B9,80,02,F0,06
950 DATA 20,2D,BF,C8,D0,F5,4C,4D,02
960 DATA ".0280/41",55,54,4F,2D,4C,4F
970 DATA 41,44,49,4E,47,32,45,58,41
980 DATA 4D,50,4C,45,00
990 DATA ".0240G"
```

ED:

In response to "Column One" of Vol. 1 #3, April 15, 1980, holes in 65U: a bunch of [illegible]ce following location 23595: try there [illegible] after). The 65U backspace routine patch is just before this.

Is anyone out there adding or in the process of adding a "PRINT USING" to OS65U? Please contact me if you are maybe we can work together.

A general question to PEEK(65) readers: For OSI BASIC or 65U what enhancements would you like to see, and what is needed the most? Once possible changes and modifications have been planned and ranked by their importance we could then ask readers with the expertise to write the changes or contract with someone to have it done. Everyone could contribute etc, and the money put in an Escrow account for safety until it was finished and reviewed etc. I would be glad to help on this project. For example:

It would be nice to modify "create" on 65U so that new files created would automatically use up previously deleted file space, or if the last file created was deleted the next one would go on top of it.

Also how about having 65U utilities in machine language callable as commands and being able to use them without destroying the current program in RAM?

An Editor with global find and change capabilities? (ED Note - RESEQ 5.2 has global change.)

As a group let's compile a list of wants and wishes and rank them by importance. If we know "WHERE" we want to go we might get there!

Tom Westhoff
Willmar, MN

Tom:

Dynamite Idea! Readers, let us know what you want and what you have. If there is enough interest, PEEK(65) will coordinate.

Al

CORKY'S CORNER

Hello again. Have been experiencing some of the problems with OSI equipment that I've heard about and now have had to come to grips with. Mine is a C3A with a "I don't wantta boot OS-65U" problem. Tried new software clear thru switching Siemens drives and still had the trouble. Finally found THREE contacts on the connector that plugs into the 470 board broken. Replaced the cable assembly (the flat one) and tried again to boot the system...so far, no dice. Have just obtained another 470 board and will try to see if there might be a problem there.

Had a chance to do some booth duty at the recent NCC and put some time in on the new C2-D/C3-D computer system. This is the new 8" Winchester hard disk product that is in the same case as an OSI C3-OEM/C2-OEM. The one at the show was installed in one of the new desks, and real neat looking. Almost would like to have that rather than the C3A. Europe was a blast. Spent some time at the components show in Paris and had a look at a lot of computer systems on display. Since the major products at the show were components, there really weren't too many of the little guys there, showing anything but hardware. The booth that I really enjoyed was the Amateur Radio Associated Clubs of Paris. There were several RTTY terminals there, and all ran super good. Copied a lot of signals up around 21 MHz and they all came out on the computer type terminal in fine fashion. Will have to get back to that type of transmission again...yup, you guessed it, I'm also W6ORS.

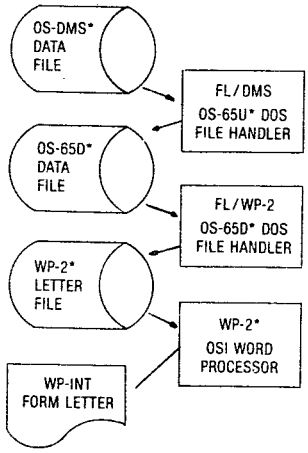
With that revealing secret, it's time to close and get this off to PEEK(65).

73

Corky

OHIO SCIENTIFIC USERS

AT LAST! FORM LETTER GENERATION USING OS-DMS* and WP-2*



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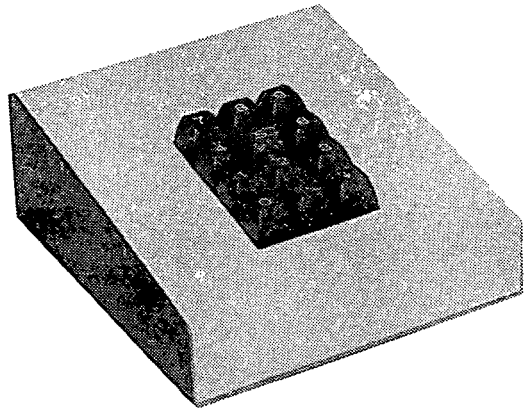

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Some hints concerning inputting from cassette and keyboard.

1. If you have large RAM and long programs, keep inputs from cassette early in the program, and ahead of any data statements which may change in extent from one use of the program to another.

2. Consider the following:

```
10 DIM A(100,4)
100 For I=1 to 100
110 INPUT A(I,1),A(I,2),A(I,3),A(I,4)
120 NEXT
```

When memory is heavily loaded, only the last 1 or 2 values of the second set of 4 may be inputted. Apparently the computer must find the array "A" after getting the first 4 values, and cannot recover in time to accept the second set completely. To overcome this, I use a mean and dirty procedure. I SAVE as follows:

```
190 DM$="XXXXXXXXXXXXXXX"
200 FORI=1 to 100
205 IF I=2 THEN PRINT DM$
210 PRINT A(I,1),A(I,2),A(I,3),A(I,4)
220 NEXT
```

When inputting this array, I add:

```
105 IF I=2 THEN INPUT DM$
```

The computer will read whatever it has time for of DM$ then proceed to input the remainder of the data properly.

3. When inputting text from keyboard we must avoid the comma and the colon since they are terminators. However, if we PEEK the keyboard instead of passing it through the INPUT routine no termination will occur from the comma or colon.

```
90 POKE 11,0:POKE 12,253
100 X=USR(X):P=PEEK(531):P$=CHR$(P)
110 PRINT P$:IF P=13 THEN 120
115 Q$=Q$+P$:GOTO 100
120 PRINT
```

Ian A. Morton
St. Paul, MN

ED:

As delivered, OS-65U will do an automatic carriage return, line feed every 132 characters if it has not seen a CR/LF. This is an old leftover from the days of the teletype and has no place in a terminal based system.

There is one situation in which you might need the auto CR/LF. Some of the older printers (and maybe some of the new cheap ones) would not handle a wraparound and would just die. If you are in the habit of printing forever without a carriage return, then you may want to keep this feature, although it would make more sense to change your habits.

The following basic statements will eliminate this "feature". If you wish to retain this condition for your normal processing, you may put these changes only in OSBU and restore them after running. We would suggest, however, that these lines be made a part of BEXEC* and therefore totally eliminate this obnoxious feature.

```
REM.....kill auto CR/LF on terminal.....
FORI=2813TO2815:POKEI,234:NEXTI:REM for
alpha print
FORI=2658TO2660:POKEI,234:NEXTI:REM for
numeric print
POKE23,79:POKE24,71:REM set auto tabs
for 80 col terminal
```

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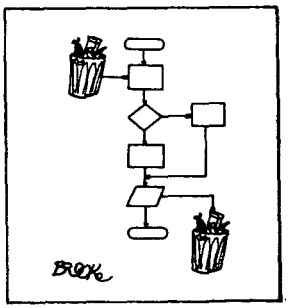
ED Note: Alloy Engineering makes a super tapedrive for hard-disk backup under OS-65U.



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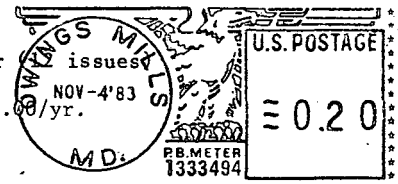

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