



DECUS 12 BIT SPECIAL INTEREST GROUP
NEWSLETTER

May

Number 34

1979

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NEWSLETTER SUBMISSIONS

The Newsletter is currently published bi-monthly in the odd months. The deadline for each issue is the last Friday of the preceding even numbered month. Submissions are accepted at all times and are normally used in the next issue to go to press regardless of date of receipt. The deadline for ready-to-use material for the next Newsletter is 29-June-79. Material requiring editing/re-typing should be in earlier. Ready-to-use material should use an area 7 inches (18 cm) wide by no more than 9 inches (23 cm) long on each page. It should be single spaced on white bond paper whenever possible and must be reasonably clean, legible and sufficiently dark for good photographic reproduction.

Material submitted in machine readable form is particularly desirable because it can be edited and incorporated into the newsletter format more easily. Higher quality reproduction is also possible this way. Contact the editor (Bob Hassinger) for further details on acceptable media and formats if you plan to make a submission in machine readable form.

HAPPY "8TH" ANNIVERSARY

The first issue of this Newsletter was published in the Spring 1971 DECUScope (Volume 10 Number 2). That makes the 12 Bit SIG by far the oldest DECUS Special Interest Group. The official creation date of the SIG is a bit fuzzy (a subject for another issue where we have more room perhaps) but it seems reasonable to date the SIG from that first publication, making this spring our "8th" anniversary. How many of you remember back to that first issue? It came out just about the time the new PDP-11 line was predicted to make the PDP-8 family a dead issue as I recall! Now that VAX is

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here, even the 11 is on the way out and there are still strong PDP-8 based products. (Note: The reference to the spring of 1972 in H.S. Hopkins' letter in this issue is off by a year)

SIG COMMITTEES AND WORKING GROUPS

Steering Committee:

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Micro-8 Working Group and US Symposia Committee Representative

Jonathan Lockwood - see above

RTS-8 Working Group

COS-310 Working Group

Lee Nichols - see above

Lawrence H. Eisenberg - see above

Symposium Software Exchange Committee

Send copies of software you wish to exchange at the next US Symposium to one of the following committee members for preparation:

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DECUS US SPRING 79 SYMPOSIUM

The Spring Symposium in New Orleans was bigger (and "better" ?) than ever. We were pleased to have William Van der Mark with us representing DECUS/Europe 12 Bit interests. The working group reports in this issue cover many of the things that went on that are of interest to the 12 Bit community. As those reports reflect, there is a growing level of activity in the 12 Bit SIG in the COS 300/310 and WPS/8 areas. There

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is some prospect that COS/310 will be easier to get in the future for existing systems (it is already supposed to be bundled with new DECstations, along with OS/78). This would increase activity in our area even further as all our "system hackers" go to work on it. As Larry Eisenburg notes, WPS/8 is a very nice word processing product (note the quality of his and Jonathan Lockwood's sections which are done using WPS/8 systems). If it, too, could be made more reasonably available for existing systems, I am sure it would also be very popular.

During the Symposium, we had a meeting of the 12 Bit SIG Steering Committee. Lawrence H. Eisenburg, of the COS-310 Working Group was named to the committee. Jonathan Lockwood was named to be our representative to the US Symposia Committee. He will be responsible for putting together our part of the program for the Fall Symposium. If you want to contribute or have any questions, contact him (see address in listing of Steering Committee above).

One of the hottest topics of discussion in the various committee meetings I attended was the question of the new DEC/DECUS funding scheme. After you get by all the fancy explanations, the bottom line for us as a SIG is this: The subsidy to pay for Newsletters that DEC has provided in the past is going to be reallocated to other DECUS activities. The SIGs are going to have to decide on how to fund their Newsletters if they still want them. The principal funding scheme that is being put forward by the US Executive Committee is to have some system of subscription fees for Newsletters. This would presumably be administered by the DECUS office so the SIGs would only have to decide to use the system rather than having to implement and administer their individual systems. Nominally, SIGs can come up with alternatives to this but nearly every alternative I suggested, such as selling advertising in the Newsletter, was turned down flat. Each SIG is to submit its ideas on the subject and someone (the US Executive Committee and DECUS staff, I suppose) will investigate them. Somehow, between now and next June, when the system goes into effect, a decision will be made on what the options to be permitted are, and the SIGs will have to decide what to do.

The 12 Bit SIG Steering Committee was opposed to subscription fees for our SIG. Since our Newsletter is the only effective way to meet DECUS's mandate to foster communications for the 12 Bit community, the committee feels that such a plan would be seriously detrimental to our SIG and that other, better ways to do the job should be found. Before anything else is considered, the Steering Committee insisted that DECUS must do the long overdue and oft requested audit of our mailing list. A program of size reduction and economization of space use as well as a more selective editorial policy are already in place, as you may have noted. This will help reduce costs. Contributors are asked to make submissions in machine readable form whenever possible to help this effort. Due to the limits of available volunteer efforts in the production of the Newsletter, items that are not submitted in machine readable form will be less likely to be used in the future. Your inputs, as always, are welcome on this issue. While it is technically a DECUS/US chapter issue, the impact will be felt in all the chapters so all our members around the world should be concerned.

RECENT SUBMISSIONS TO THE DECUS PROGRAM LIBRARY

The following is a summary of programs processed into the DECUS Program Library as of April 1979.

DECUS 8-560 - Morse Code Sending Programs

"This is a package of three programs which generate Morse code using the PDP-8

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computer. Morse Code Trainer (formerly DECUS 8-269) was submitted by Jack Harvey of National Data Systems, Inc., Montvale, NJ in April 1970. PDP-8 Morse Code Sender (formerly DECUS 8-308) was submitted by William C. Orthwein of Southern Illinois University, Carbondale, IL in January 1970. SAM-1 (formerly DECUS 8-560) was submitted by Robert L.T. Cronin of Belmont Hill School, Belmont, MA in July 1972."

Listings of the first two programs are included in the write-up.

DECUS 8-842 - OS/8 Directory Listing Program

"This is an improved version of the directory listing program distributed with OS/8 V3/V3C. It is functionally equivalent to the original version and includes updates which have been published up to the time of submission. To distinguish it from earlier versions it has been designated "V7B". The loading and operating instructions in the OS/8 Handbook apply without change to this version.

"Significant features of this program include the ability to print multiple column listings in column order rather than row order, and the ability to print alphabetized directory listings. The new OS/8 date format is supported.

"Improvements made in this version of DIRECT are: Block numbers and 'empties' may now be included in sorted listings. Date sorts have been added and operation with SYMBIONT fixed. Number of blocks used by the files shown is output.

"Note: FUTIL and OCOMP have been included on the floppy for the convenience of the user. These programs are available through DECUS as DECUS 8-608. DIRECT runs on all PDP-8's and PDP-12's."

This version of DIRECT from Jim Van Zee was entered in the library 7 Novemebr 1978. A short patch for OS/8 V3D PIP to restore the /E, /F, and /L options that were deleted in that release is included in the package.

DECUS 8-850 - USR and Other Special Purpose Subroutines for OS/8 FORTRAN IV

This is an update of Bob Phelps well known package that was entered in the library on 1-February-1979.

DECUS 8-873 - RSTS Terminal Monitor

"The RSTS Terminal Monitor runs on a PDP-8 computer and includes the software necessary to transfer files either to or from a PDP-11 computer running RSTS/E. Its goal is to synthesize the powers and versatilities of the RSTS and OS/8 operating systems. Serial Input/Output handlers, formerly listed as DECUS 8-874, are included with this package."

This item, which requires 12K and OS/8 TECO, appears to have been repackaged to avoid some of the previous confusion and expense involved in ordering the monitor and handlers separatly. Listings of the package are included in the writeup.

DECUS 8-879 - MTFOTP: Mag-Tape-File-Oriented-Transfer-Program

"MTFOTP is a modification of DEC's FOTP which treats magnetic tape as a special directory device while at the same time retaining other FOTP functions. It can thus be used as FOTP.SV with extended magtape functions. These include (1) directory I/O, (2) positioning and (3) subfile directories for grouping files.

"TM8EZ is a handler written for TM8E controller equipped with 9-track TU-10 magnetic tape. Using the DEC supplied handler, it is impossible to read or write industry

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compatible 9-track tape from standard OS/8 buffers. TM8EZ and the extended handler TM8ESU decode OS/8 buffers and read/write in standard 9-track mode, 384 characters per record (variable length records optional) with one ASCII character per frame. TM8EZ is ideal for use with MTFOTP when data must be transferred to other magtape equipped computers."

This package, submitted by Bob Phelps, uses 12k (or 16k with TM8EZ and TM8ESU). It looks like an excellent tool for anyone trying to use TM8E/TU10 9-track magtape. TM8EZ and TM8ESU are an example of what I have called a "super handler", that is, a device handler which, requiring more than two pages to function, has been written to use a field of high memory as space for an extension of the basic handler and its buffers. If the MEMORY (formerly CORE) command is used to set the software memory size below the field used by the extended handler area, a safe, compatible system results. Bob has included many innovations and convenience features in this package that are well worth studying for anyone trying to write mag-tape support and/or device handlers needing the "super handler" concept.

DECUS 8-881 - COS 310 Compatible Floppy Disk Handler for OS/8

"This two-page OS/8 (non-system) device handler can be used to read or write COS-310 format floppy diskettes. The handler, however, does not convert the 6-bit packed data used by COS-310 into OS/8 compatible files. That function must be performed using the COS-310 FILEX. The use of this handler is recommended only for experienced system programmers.

"I/O error checking is minimal. A special device handler is required because COS-310 uses a different sector interleaving algorithm than OS/8, and the COS-310 format utilizes all bits in every sector of a track. Note: Only minimal documentation is provided in a HELP file included on the diskette."

This handler was written in December of 1976 by Bob Tycast of DEC. It gives an OS/8 floppy of about the same size as other "8-bit" mode handlers but with the extra feature of a level of compatibility with COS-310. It is unclear if it will work with the DECstation 78 floppy disks due to the same speed problem that showed up for the standard OS/8 floppy handlers. If anyone knows the answer to this question please let me know (RH). The writeup includes an assembly and cross reference listing.

DECUS 8-889 - ADVENTURE

"ADVENTURE is a magical, unpredictable, and often addicting computer game that has caught on in the United States in near epidemic proportions.

"It is a treasure hunt with all the trimmings-mysteries and challenges that grow more and more complex as the game unravels. ADVENTURE is more of a puzzle than a game. Once solved, it's mastered. The mastering, however, often takes months of drawing maps and planning strategy.

"ADVENTURE's sweeping popularity lies in its power to enchant. Players are projected into a world of fantasy, one that blends the heart-pounding suspense of Treasure Island with the magic of Alice in Wonderland.

"Note: This is a version of the popular PDP-11 ADVENTURE game (DECUS 11-340), containing all features, but modified to run on a PDP-8."

This version of ADVENTURE was submitted by Dick Murphy of DEC. It requires 32k and is written in OS/8 FORTRAN IV and RALF. A secondary storage device with at least 250

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blocks of free space for working storage is required. If you have the prerequisites, this is the greatest toy I know of. It is also an interesting and educational exercise in programming and "artificial intelligence". (RH)

DECUS 8-890 - LPTSPL: OS/8 "PRINT" Utility Package

"This utility program, or "CUSP", prints a file name and extension in large block letters on 132 column paper at the beginning of a line printer listing. It is called by the OS/8 "PRINT" CCL command. The purpose is to facilitate separation of listings when a large number of different files are being printed. The format of the printout is similar to that used on the PDP-11 and DECsystem-10 time-sharing systems.

"This package consists of three different implementations of LPTSPL. The first, written in FORTRAN II and SABR, was formerly available as DECUS 8-848 and was submitted by Peter Lempkin, National Institutes of Health, Bethesda, MD. The second, written in PAL-8, was submitted by Henry Dreifus, The Haverford School, Haverford, CT. The third implementation was written by an unknown author at Digital Equipment Corporation, and was modified and submitted by Kevin Danzig. The original sources for this third implementation have been lost and only the ".SV" file is included. Both the Danzig and Dreifus versions support the current OS/8 date format. Note: LPTSPL is not a print spooler in the conventional sense, in that it does not maintain a print queue."

DECUS 8-891 - Big Floppy Handlers

This is a set of OS/8 device handlers for an RX01 Floppy Disk submitted by Eugene J. M. Lynch of Xerox Corporation. They store data on the diskettes in "byte" or 8-bit mode, thus increasing the number of blocks which may be stored on a diskette from 494 to 666, a 40% increase for the system disk, and 35% for data disks. The set includes a two-page system handler (requires 12k), a one-page system handler that requires 8k plus a 256 word ROM, and a two-page non-system handler. Full details and patches for PIP and RESORC are given. Very extensive, excellent documentation, including cross referenced assembly listings for all versions is included in the 95 page writeup.

DECUS 8-893 - UTIL10: DECsystem-10 Communication and Utility Package

"UTIL10 is a utility program/subroutine to assist with communications between a PDP-8 and a DEC-10, both communicating through teletype ports. It handles login, logout, and device assignment, sets line characteristics in the DEC-10 line scanner service as required, and manages a DEC-10 status register which may be addressed by other programs. Options are passed as switches (when chained to), or as standard subroutine arguments (when called as a subroutine).

"DEC10 is a two page handler for DSK:, MTA:, LPT:, PTP:, PTR:, PLT: which are all part of a DEC-10 and the PDP-8. Chains to UTIL10 as necessary to login on the DEC-10, set line characteristics, and run a special version of PIP on the DEC-10. All of this is entirely transparent to the user to whom it appears that all DEC-10 devices listed above (or others that he may add) are proper devices belonging to the PDP-8. Modifications to PIP for the DEC-10 are included in the documentation.

"PIPEXT is an extension to PIP (version 9A) which allows file transfer to and from DSK:, MTA:, LPT:, PTP:, PTR:, PLT: where the named devices are all part of a DEC-10 system communicating with the PDP-8 through teletype ports on both computers. This extension transmits all necessary commands to a special version of PIP running on the DEC-10 to ready the DEC-10 for file transfer. PIP is otherwise unchanged except that the maximum number of input files is reduced from nine to five. Modifications to PIP for the DEC-10 are included in the documentation."

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This package was submitted by John P. Ranck from Elizabethtown College.

DECUS 8-894 - Improved OS/8 LQP Handler

"This is an improved version of the OS/8 LQP Handler which has the following features: 1) Adjustable left-hand margin offset, 2) Adjustable pitch and line spacing, 3) Single page-at-a-time output control, 4) No formfeed at beginning or end of file, 5) Backspace recognition for underlining, etc."

This handler, submitted by Jim Van Zee in July 1978 uses two pages. A listing is included in the writeup.

DECUS 8-895 - NUMBER: FORTRAN IV Plotter Routine

"This program is a replacement for the module "NUMBER" supplied with Digital Equipment Corporation's "FORTRAN IV Plotting Routines" package. It does not have the problems of DEC's routine, and is significantly smaller."

A FORTRAN source listing is included with the writeup.

DECUS 8-898 - DR8e Overlay for RT BASIC

"This simple overlay which is loaded after the paper tape RT-BASIC (DEC LB-U70B-PB) allows the RT-BASIC software to both read the input and set the output of the DR8E digital I/O module. This is accomplished using the UUF user function provided for in the RT-BASIC system."

Submitted by James Gonzalez of DEC. A listing is included with the writeup.

DECUS 8-900 - SABX: SABR Assembler Modification

"An overlay to modify SABR to simulate PAL-8 as closely as possible while maintaining SABR's automatic page escape generation (routine use of the PAGE statement is eliminated). Overhead found in unmodified SABR to handle field switching, relocatable loading, external subroutines, etc., has been eliminated. The only runtime code is a small routine (10-23 words) in each field to handle indirect address references to off-page locations. The binary output can be loaded by ABSLDR, and up to 12k can be used for increased symbol storage. Restriction: May not work with other than OS/8 V2 SABR."

DECUS 8-901 - AXIS

"This program is a routine based on DEC's version of AXIS.FS (in the FORTRAN IV Plotting Routines for incremental plotters - RH). It was developed on a PDP-12 computer. This subroutine has one new argument which allows use of full logarithmic or reverse logarithmic cycles. Labeling of tic marks has been changed so that on both X and Y axes, labels are written at a 0 degree angle. Restriction: Cannot be used in conjunction with PSCALE for logarithmic plots."

Uses XYPLOT and NUMBER routines from same package. Submitted by J.P.J. Maurissen and A. Vanderheide of University of Rochester. The writeup notes that the version of XYPLOT in USR (DECUS 8-850) and the version of NUMBER (DECUS 8-895) (both noted above) can be advantageously used in conjunction with this routine. Listings of the FORTRAN IV source are included in the write up.

DECUS 8-902 - INFSTAT

"INFSTAT is a package of statistical and binary DECTape manipulation programs capable of working independently or in conjunction with INFPK (DECUS 8-859). The package

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includes, but is not limited to, means and standard deviations, regression and correlation, regular and stepwise multiple regression for up to 10 independent variables, paired and unpaired T-tests, individual and multiple DECTape block editing, data input and display, histograms, single and multiple page plots, DECTape block transposition, and areas under the curve. All programs operate on variables stored on DECTape blocks in binary floating point format. There is a provision for a missing data indicator which causes pairs of data to be ignored."

This extensive package, coded in FORTRAN II and PAL, was submitted by Sally Swedine of the VA Medical Center in Seattle.

DECUS 8-903 - RF08 Simulation on RK8E

"Programs written for the RF08 disk can be run on an RK8E disk system using this routine. The routine provides a direct simulation of RF08 core addressing, disk addressing, and word count. The RF08 IOT's in the original program are replaced by a subroutine call to the simulator. The simulator will execute in, and can be entered from, any field with the interrupt on or off. It could be easily modified to simulate the DF32. Restrictions: Run speed is a little slower than with the RF08. slight modification required for non-8/E processors."

Uses five pages. Submitted by L.A. Forbes of Mobil Oil Canada, Ltd.

DECUS 8-904 Line Printer Patch to use with FOCAL

"An easy way of selecting the output device, either a teletype or a line printer, is illustrated. The patch is an overlay which can be loaded after loading FOCL.S (DECUS FOCAL8-148). The routines occupy the core area allocated for user coded subroutines."

Note that FOCAL8-148 has been obsoleted, however FOCAL8-227 replaces it. Submitted by T. Jeevanandam and S.S. Lamba of the Indian Institute of Technology.

DECUS 8-905 - DEC-10 System Controller

"DEC10 allows the PDP-8 to simulate a remote terminal to a PDP-10. In conversation mode, the PDP-8's console terminal can be used to communicate with the PDP-10 as if the PDP-8 was not present and its terminal was connected directly to the PDP-10. Simple commands allow both ASCII and binary files to be transmitted in either direction between the PDP-8 and PDP-10 peripheral devices."

Submitted by Robert W. Phelps of the University of Rochester Medical Center.

DECUS 8-906 - Background Plotting for FORTRAN IV

"These routines allow plots to be drawn under interrupt control while the CPU performs other tasks. In particular, they allow the user to create a plot file, preview it on the scope, select plot(s) he likes and queue them to be plotted on a CALCOMP or other plotter. While they are being plotted, the user may preview additional plots and add selected ones to the queued plotting file."

Submitted by Robert W. Phelps of the University of Rochester Medical Center.

FOCAL8-339A - Evaluation of Double Integrals

Written for FOCAL MODV with extended functions.

FOCAL8-339B - Eigenvalues and Eigenvectors of a Symmetric Real Matrix

Listings of both programs and examples are given in the write up. Submitted by Graciela O. Staffa of the Instituto De Biologia Marina, Argentina.

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FOCAL8-342 - HYFOC.P: A process Control Language based on FOCL.S

"A software to operate the EAL 580-PDP-8/e as hybrid computing (HCS) or as process control computer system (PCCS) is developed based on FOCL.S (DECUS FOCAL8-148). It retains all the features of FOCL.S and has additional machine language coded subroutines to control the 580 analog system and to handle external data transfer. It also allows the use of more than one subscript, thus providing a facility to handle matrices. A special command has been incorporated to operate stepper moters which can control process flows through valves coupled to them. It resides in the core area allocated for user coded subroutines.

"FOCL.S (DECUS FOCAL8-148) is distributed with this package. Restrictions: A/D converter (Digital Voltmeter) samples at 50 Hz for single channel and 7 Hz for multi channel."

Submitted by T. Jeevanandam and S.S. Lamba of the Indian Institute of Technology.

The author has submitted the following program to the DECUS Program Library.

TKPLOT - Graphic Display on Tektronix Terminal

"This program enables a Tektronix 4010 Series Terminal to be used as the plotting device with a PDP8/12 computer executing an OS/8 FORTRAN IV program which uses the Plotting Subroutines. The Graphic Input capability is used to annotate the display from the keyboard. If the Tektronix Hard Copy Unit is present, it may be used under program control. A file may be designated to receive all of the information necessary to reproduce displays on other graphic devices. Displays are saved selectively in this file. If the PDP has an incremental plotter, it may be used to reproduce the saved displays."

OS/8 V3, OS/8 FORTRAN IV, and OS/8 FORTRAN IV Plotter Routines are required. The Tektronix terminal cannot be the console device. Submitted by Eugene J. M. Lynch, Xerox Corporation, Xerox Square W129, Rochester, NY 14644.

BUSINESS APPLICATIONS SOFTWARE

Dr. O. Arthur Stiennon writes: "In response to your call for business applications, I do have an accounting package suitable for cash basis taxpayers. I'm not an accountant, of course, but, because of the lack of reasonably priced software for the 8, I had to bone up on the subject long enough to get the programs squared away to the satisfaction of my CPA. They are written in Jim Van Zee's UWFOCAL but would probably run in any FOCAL with "secret variables" and 2-D subscripting capability. As little as 8K and 1 DEctape will run the system. If the user can enter the number of the check, the amount and account code for each check and deposit, the programs will do the rest.

BOOKS.FC is the 'menu' program which calls the others.

ENTRY.FC or ENTRY.BA (in BASIC) enters the checks and deposits, one file to a month.

NEAT.FC Prints out a neat list of checks and deposits with an identifying description of each.

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CONSOL.FC sweeps up the transactions for 1 to 12 months and

MATPL.FC prints out two matrices: one for disbursements, the other for income. The categories are labeled and there are row and column sums. A third printout updates the financial statement.

LSTING.FC prints out a listing of all transactions from month N1 to month N2.

DIFMAT.FC subtracts the matrix of income and expense for the same months of last year to show at a glance the amount and direction things are changing.

ACCNTS.FC prints out a chart of accounts. This would normally be 'customized' for each user as the expense and income items would be different for various enterprises.

CKLIST.FC brings a file into core and

PANDL.FC prints out the P and L statement for that month.

SEARCH.FC prints out the check number, amount, month and category code for every disbursement in a given category, e.g. auto expense, with a total. This was written with the IRS in mind, and sure enough, on a recent 5-year audit, they loved it!

"LPT: or the terminal can be selected at runtime. Up to 52 types of expense are allowed and (naturally) there are fewer sources of income - 23. It might be thought that 12 months x 75 categories would be too many variables, but, because of the "zero variable" saving feature of UWF, we never run out of variables.

"Due to a buffering quirk of the ETOS version of UWF, ETOS users have to do data entry in BASIC. Of course, in BASIC there is the limitation that checks over \$9,999.99 have to be limited to 6 significant digits."

Dr. Stiennon' address is: 1 South Park Street, Madison, WI 53715.

TEXT FORMATTING SOFTWARE FOR THE DIABLO 1620

Dr. O. Arthur Stiennon writes to say he has written a RUNOFF type text processing and formatting program with the capability to use many of the 'escape sequence' features of the Diablo 1620 terminal. Because it is done in OMSI BASIC (essentially the same as ETOS BASIC), he says it is slow but it is 'easy to get into and one can have separate versions for scientific papers, letters, contracts, etc.' His address is: 1 South Park Street, Madison, WI 53715.

OS/8 TO RT-11 VIA FLOPPY DISKS

I noticed a note in the RT-11 SIG Newsletter from John Yardley. It describes a program called "PIP8" by Martyn Armstrong of his facility which runs on an RT-11 system. He says it can manipulate OS/8 floppy disks, transferring ASCII files, deleting files, renaming files, and printing directories. This gives one of the file exchange capabilities that people have been asking me about recently. The address is: Division of Analysis and Computer Science, Department of Industry, National Physical Laboratory, Teddington Middlesex TW11 OLW, England.

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HELP: 8-11 COMMUNICATIONS

Lynn Woloshyn writes: "We have recently acquired two PDP-8/I's and would like to know if anyone has RS-232 interfaces for these machines. I would like to communicate between the PDP-8 and 11/20 and 11/34, and would be interested in seeing anyone's software in this area. At present we have only paper tape software for the PDP-8 but a wide range of operating systems for our PDP-11's. I would appreciate any help available." The address is Department of Computer Science, University of Regina, Regina, Canada S4S 0A2.

Comments: DEC offered various serial line interfaces for the pre-OMNIBUS machines (the PT08 for example) - be sure to get one that matches the kind of I/O bus on your 8/I - it could be a "negative bus" or a "positive bus". These are sometimes offered by the used computer companies and may also be available from DEC's Traditional Product Line (TPL). If you put a DW8e option on the 8/I (to allow use of the RK8e disk for example) you can use the more common KL8J OMNIBUS type serial line interface. The KL8J is available on the used computer market and may be available new from DEC. Both the KL8J and the DW8e should also be available from TPL. Anyone with information for doing the communication from 8 (paper tape or OS/8) to the 11 please let me know too. (RH)

HELP: CROSS ASSEMBLER

Raj H. Dev has written to say: "PLEASE HELP! I desperately need a PDP-8 cross-assembler that runs on the PDP-11. I would appreciate any leads." His address is Datarol Inc., Kane Industrial Drive, Hudson, Mass. 01749. Phone: (617)-568-1411 x366.

HELP: OS/8 BASIC "REAL TIME" FUNCTIONS

Dr. Graeme A. Wood writes: "I am writing to you as a frequent user of a PDP-8/E for on-line experimentation who has become frustrated by the many "bugs" I have encountered in the OS/8 BASIC real-time routines (BASIC.UF). These include a completely inoperable CLW and ADC function; a DLY function which only works if dummy PRINTS are interspersed between calls; and a DIS function which has an upper limit of 1024 on its E parameter despite indications to the contrary.

"Could you please advise me as to the availability of any improved version of this software or of the existence of alternative routines which can run under OS/8 BASIC on a Lab 8/E system equipped with floppy disc drives and 24K of memory."

The address is: Department of Human Movement and Recreation Studies, University of Western Australia, NEDLANDS. 6009, AUSTRALIA.

Comments: I do not use BASIC in this way and would not recommend it normally. OS/8 FORTRAN IV, being an interrupt driven system which is extendable by the user (thru user written assembly language subroutines, linked to the interrupts if necessary), gives a much better environment for real time work, at least for me. Either U/W FOCAL or FOCL/F, both written by users, may also be useful if the application is suitable (i.e. within their timing limitations which typically tend to be more restrictive than FORTRAN's). If BASIC must be used, be sure to have the latest release of it and OS/8 plus any patches published in the Digital Software News for the PDP-8, then, if there are still problems, submit SPR forms to DEC documenting them. Experience suggests that, beyond this, particularly for someone as far away from Maynard as Dr. Wood,

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purchase of sources and self sufficient maintenance of the software may be the most direct and satisfactory way to solve the problems in the long run. (RH)

HELP: DMM 8-30 MEMORY MANAGEMENT UNIT

Hans von Blanckensee writes: "Our installation recently purchased a DMM 8-30 Memory Management Unit, produced by DIGICOS at Amstel, Holland. It appears to have a hardware malfunction, but we don't have prints for it. Before we begin a trans-Atlantic correspondence to solve our problem, it seems worth trying to find out whether some local user may be able to help. We would appreciate hearing from anyone who has one of these up and running under RTS-8 or may be otherwise able to shed some light on the subject..." The address is V. A. Medical Center, Research Service, 150 Muir Road, Martinez, CA 94553.

AN OPTIONAL PATCH TO 'FUTIL'

A patch to FUTIL.SV to allow FUTIL to remember the starting block of a file has been developed at QUODATA, 196 Trumbull St., Hartford, CT 06103 and is presented here. FUTIL has no convenient facilities for accessing OS/8 files as pure binary data relative to the beginning of the file. In particular, it is almost impossible to do this in an OS/8 BATCH stream because it is necessary to enter the starting block of the file.

The following patch adds the variable "A" to FUTIL. The value of this variable is the starting block of the current file selected by the FILE statement. Example:

```
.R FUTIL

FILE FUTIL.SV
FUTIL.SV 0522-0553 0032 (0026) 1.301 05-JAN-78
EVAL A
= 00000522 ( 0000338)
```

Note that the value of "A" is equal to the first number in the data line output by the FILE command. This feature allows accessing of data relative to the beginning of the file. Continuing the above example, block 1, location 3 of FUTIL.SV can be accessed as follows.

```
(A+1).3/nnnn
```

Specifying a nonexistent file to the FILE command does not affect the "A" variable.

FUTIL's version is updated to "A07 " where I have "7D" but any "V7" FUTIL will do. OS/8 distributed V7A and has DEC SPR'ed to V7D as of Sept 78.

```
.R FUTIL

FILE FUTIL.SV
FUTIL.SV ssss-eeee 0032 (0026) b.111 da-mon-yr
SET MODE SAVE
0.15513/ 0000 301<lf>
0000.15514 5527 0<lf>
0000.15515 5533 5527<lf>
0000.15516 5522 5533<lf>
```

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```

0000.15517 5523 5522<lf>
0000.15520 5525 5523<lf>
0000.15521 5512 5525<lf>
0000.15522 5516 5512<lf>
0000.15523 5506 5516<lf>
0000.15524 0222 5506<lf>
0000.15525 0225 1772<cr>
12145/ xxxx 222<lf>
0000.12146 xxxx 225<lf>
0000.12147 xxxx 0<cr>
4013/ 5523 2144<lf>
0000.04014 0003 3362<cr>
5474/ 0011 12<cr>
1772/ xxxx 1077<lf>
0000.01773 xxxx 5774<lf>
0000.01774 xxxx 5534<cr>
12516/ 7540 7501<cr>
WRITE
EXIT

```

Earl T. Ellis Jr., USCG R and D Center, Avery Point, Groton, CT 06340 (203) 445-8501 ext 296.

RALF-CREF BUG

Albrecht Lommel has submitted the following SPR on CREF V5B and RALF (F4 V3D). "Using a RALF listing output file as input to CREF and as output listing device the TTY (KL8E - 2 page handler) with the "/R" switch for CREF, CREF produces after the first page an unlimited number of linefeeds on the TTY, so that the user never sees the following listing pages... With PIP the output functions normally and the author could get the desired RALF listing on his TTY (but no CREF'ed listing of course!). Normal PAL-8 listing output produces no difficulties as input to CREF, too! Only the ominous "/R" switch results in this useless producing of unlimited linefeeds on TTY." His address is I.F. Aerodynamics ETH, ETH-Zentrum, CH-8092 Zurich/Suisse.

NOTE FROM DR. EUGENE J M LYNCH

Dr. Lynch writes: "... You published in Newsletter 27, and DEC published in Software News for April-May 1978, "How to Write Two Page System Handlers for OS/8". I think it should be emphasized that while these instructions may be valid for V3D (I haven't seen V3D FORTRAN IV), they certainly will not work with V3C FORTRAN IV. I imagine most people will continue using V3C FORTRAN IV, even if they buy the V3D monitor, for who would spend all that money just for correct dates on their listings. V3C FORTRAN IV will make 07642 a CDF CIF, and 07721 and 07727 CIF instructions, and no other "change field" instructions in the first (Field 0) page will be changed properly. Constants of the form "62nx" in other locations will not be molested. The tutorial failed to point out that locations 07750 to 07755 ("data break" locations) may be used for temporary storage (DEC's RX01 Floppy system handler does this). In the restrictions at the end of the article, a "6214" (Read Data Field) instruction satisfies the conditions in the first sentence, but is not one of the instructions mentioned in the second. Since it seems that this instruction should be valid anywhere, this requires clarification.

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"My experience with two page system handlers operating with FORTRAN IV (and BASIC) was gained painfully in writing two page system and non-system handlers for the RX01 Floppy Disk, which use "8-bit" rather than "12-bit" mode, and provide 666 rather than 494 blocks on a diskette. These handlers have been operating on three systems doing a diversity of tasks at this site for about a year without problems. I am preparing a write-up for DECUS, and hope to send a copy shortly. ..."

Dr. Lynch also included copies of sessions with FUTIL to change the V3C FORTRAN IV programs to do the date correctly. His address is Xerox Corporation, Xerox Square W129, Rochester, NY 14644.

Comments: As noted in the article, the material was written by David Spector (then with DEC's PDP-8 software development group), with additional information added to the Newsletter version by me with input from Stan Rabinowitz of the same group. The question of version dependence was raised at the time and was never fully resolved because the author of the article was principally concerned with future versions of the software and with establishing and documenting a new, standard protocol for recognizing and manipulating two page system device handlers (one page system handlers and non-system handlers have been covered elsewhere before). He had no need or goal to establish backwards compatibility. As a result, the indirect references to version dependence that were included had to be used as written. No one had the time to more fully research and document the question. My note at the end of the article tried to flag the issue without going beyond what had been firmly established at the time. New software releases (such as BASIC V6) will be of interest to many users and will use the new standard scheme so it would be wise to write any two page system handler to work with it. It may or may not be worth the update price for FORTRAN to avoid having to figure out how to make your handler work with both the old scheme and the new one at the same time. It is important for writers of two page system device handlers to consider this issue and very carefully document which scheme(s) and which versions of FORTRAN, BASIC, etc. their handler will work with.

As to the question of getting V3D FORTRAN IV - if you plan to use one of DEC's newer peripherals with a DEC written two page system device handlers (such as the RL01) you need it. If you want to write or use any two page system device handler that complies with the standard you need it. I have not verified it, but I suspect that the date function in the FORTRAN library was modified to work correctly with the new date scheme so that your FORTRAN applications programs can continue to print out and use the correct system date. In any case, normally such a release contains patches that have been made to correct bugs and DEC will only continue to support the most recent release of the software. If you track down the correct update price (as opposed to the first time purchase price), the cost is usually not that high - sometimes you have to work rather hard to do this, however.

The article was specifically directed at the issues in two page system device handlers. The use of the data break locations has been standard practice since the first release of PS/8 in many handlers so a mention of that trick was no more appropriate than many others. I think what is important to note is that you cannot initialize those locations when using BUILD to insert the handler into a system. Also, use of the break locations has proven tricky from time to time over the years with unsuspected interactions appearing on odd hardware configurations (in FORTRAN IV, what if you had a device that used a data break location that could be active while your handler was being called - a data break analog to digital converter run by an interrupt driven routine for example). Only use the break locations and other such tricks with great care if you expect your handler will work on everyone's system. (RH)

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EDU 25 BASIC HINTS AND KINKS

W. T. Smith writes: "...In BATCH mode we run OS/8 BASIC and (we run) interactively EDU 25 BASIC (for up to 8 on line users). We experience the problem of incompatible file and string handling facilities between the two BASIC systems (Oh for a single BASIC for both modes!).

"We have managed to discover one or two useful facilities available in EDU 25 BASIC involving files and strings, one of which will solve the problem in question - i.e., Is it possible to pick up names (strings assumed greater than 6 characters) from a file, sort them internally and then re-write to the file in sorted order? The answer is Yes!

"In the following it is assumed the reader understands the LINPUT statement in EDU 25 BASIC.

Useful points to note:

1. LINPUT N\$ will input a line of text (string) into a 1-DIMENSIONAL string array N\$(1), N\$(2), N\$(3), ... starting at N\$(1), storing 6 characters per string variable until the string is exhausted. The length of the string will automatically be stored in N\$(0) by the LINPUT statement in this case.
2. To input a string of length greater than 6 characters from a file it is possible to use "LINPUT #, N\$". The result will be as in point 1.

NOTE: the end of the string in this case is the first 'carriage return' encountered.

3. The big breakthrough for us was to discover that lines of input could be read automatically into a 2-DIMENSIONAL string array, as illustrated by the following example:

```

100          FOR I = 1 TO 10
110          LINPUT M$(I, 1)
120          NEXT I

```

The I'th line will be stored in M\$(I,1), M\$(I,2), ... with the length of the I'th string stored in M\$(I,0) automatically as before.

Each of these lines could be stored in a file using the statements, for example:

```

190          FOR I = 1 TO 10
200          Z9 = INT (M$(I,0)/6 + .9)
210          FOR J = 1 TO Z9; PRINT #, M$(I,J); NEXT J
220          PRINT '
230          NEXT I

```

4. It also works for reading lines from a file into a two dimensional array, i.e. using LINPUT #, M\$(I,1) as in point 3. ..."

Mr. Smith's address is College of Technology, College Square East, Belfast BT1 6DJ.

DECUS 12 BIT SPECIAL INTEREST GROUP NEWSLETTER
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"... for sale or exchange: LINC-8, serial #28, 16K memory; 6 Linc-tapes; 8 line Analogue to Digital Converter, 8 pots, Realtime Clock, Card Reader - CR03, 200 cpm; Line Printer, 300 lpm Mohawk 120 char. wide line. About \$5000 worth of spares are included. ... Maintained by DEC and currently in active use. ... For information call Ravi at (416) 979-2221." The address is Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, Canada, M5T 1R8.

COS 300 PATCH

Jerry Sands writes: "For all the COS 300 users who have a problem with the date after Dec 31, 1979 I have come up with a patch that I think will solve the problem. This patch will allow the dates 1-1-80 through 12-31-87. The problem was most easily solved by keeping the decade on the year constant (I wanted to have the legal dates run from 78-85). The patch fixes the monitor date enter command as well as the system directory and logical unit directory commands (files made between 1-1-72 12-31-79 will be exactly 8 years off). Also the patch covers the Dibol run time system loader which sets up the proper date in the data division which utilizes the ',D' option with the proper date from COS system date word.

"I have also have covered the Dibol compiler and cross reference programs to print the proper day of the week on the listings as well as the proper system date.

"One patch covers COS version 3.01C which is our stand-alone version. The other patch covers COS Version 3.07GA which is our Etos version. Also included with the Etos version is a patch for the program 'DFDIR' to print the correct file date.

"When using the patches please note that the 'OLD VALUES' and the 'RELATIVE CHECKSUM' match, to be sure the versions are close enough for the patch to work. Also of course for OS/8 users with FUTIL you could patch directly without using COS patch.

"I have fairly extensive knowledge of COS monitor and its workings. Should anyone want to share some ideas I would be glad to correspond with them. Also I have a COS version of OS/8 Edit (which I have never used myself) which I am told works fairly good, if anyone is interested."

Jerry's address is: Bureau of Engraving, Inc., Industrial Division, 219 North Second Street, Minneapolis, Minnesota 55401, (612) 339-8001.

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PATCHES TO ALLOW DATES JAN. 1, 1980 THROUGH DEC. 31, 1987.

THIS PATCH IS FOR COS VERSION 3.07GA (ETOS COS VERSION)

```
.R PATCH
COS PATCH SYSTEM VERSION 3.07
FILE NAME: <COMP> (COMPILER VERSION 3.07H)
BLOCK: <14>
LOCATION: <164>
OLD VALUE: 0132
NEW VALUE: <0126>
LOCATION: <172>
OLD VALUE: 2301
NEW VALUE: <2101>
LOCATION: <END>
RELATIVE CHECKSUM: <7574>
NEW BLOCK PATCHED OK
BLOCK: <2>
LOCATION: <211>
OLD VALUE: 1630
NEW VALUE: <1631>
LOCATION: <END>
RELATIVE CHECKSUM: <1>
NEW BLOCK PATCHED OK
BLOCK: <CTRL/Z>
02 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <CREF> (CREF VERSION 3.07)
BLOCK: <4>
LOCATION: <376>
OLD VALUE: 1630
NEW VALUE: <1631>
LOCATION: <END>
RELATIVE CHECKSUM: <1>
NEW BLOCK PATCHED OK
BLOCK: <6>
LOCATION: <157>
OLD VALUE: 0132
NEW VALUE: <126>
LOCATION: <167>
OLD VALUE: 2301
NEW VALUE: <2101>
LOCATION: <END>
RELATIVE CHECKSUM: <7574>
NEW BLOCK PATCHED OK
BLOCK: <CTRL/Z>
02 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <DFDIR>
BLOCK: <2>
LOCATION: <141>
OLD VALUE: 0110
```

```
NEW VALUE: <120>
LOCATION: <END>
RELATIVE CHECKSUM: <10>
NEW BLOCK PATCHED OK
BLOCK: <CTRL/Z>
01 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <CR>
PATCHING MONITOR
BLOCK: <14>
LOCATION: <143>
OLD VALUE: 5567
NEW VALUE: <5570>
LOCATION: <372>
OLD VALUE: 6200
NEW VALUE: <6000>
LOCATION: <END>
RELATIVE CHECKSUM: <7601>
NEW BLOCK PATCHED OK
BLOCK: <15>
LOCATION: <110>
OLD VALUE: 5567
NEW VALUE: <5570>
LOCATION: <END>
RELATIVE CHECKSUM: <1>
NEW BLOCK PATCHED OK
BLOCK: <16>
LOCATION: <372>
OLD VALUE: 7660
NEW VALUE: 7650
LOCATION: <END>
RELATIVE CHECKSUM: <7770>
NEW BLOCK PATCHED OK
BLOCK: <36>
LOCATION: <375>
OLD VALUE: 0110
NEW VALUE: <120>
LOCATION: <END>
RELATIVE CHECKSUM: <10>
NEW BLOCK PATCHED OK
BLOCK: <END>
04 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <CTRL/Z>
EXIT
COS MONITOR 3.07GA
```

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THIS PATCH IS FOR COS STAND ALONE VERSION 3.01C

```
.R PATCH
COS PATCH SYSTEM VERSION 11.08
FILE NAME: <COMP> (COMPILER VERSION 01.09A)
BLOCK: <2>
LOCATION: <205>
OLD VALUE: 1630
NEW VALUE: <1631>
LOCATION: <END>
RELATIVE CHECKSUM: <1>
NEW BLOCK PATCHED OK
BLOCK: <14>
LOCATION: <164>
OLD VALUE: 0132
NEW VALUE: <126>
LOCATION: <172>
OLD VALUE: 2301
NEW VALUE: <2101>
LOCATION: <END>
RELATIVE CHECKSUM: <7574>
NEW BLOCK PATCHED OK
BLOCK: <CTRL/Z>
02 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <CREF> (CREF VERSION 11.08)
BLOCK: <5>
LOCATION: <4>
OLD VALUE: 1630
NEW VALUE: <1631>
LOCATION: <END>
RELATIVE CHECKSUM: <1>
NEW BLOCK PATCHED OK
BLOCK: <6>
LOCATION: <100>
OLD VALUE: 1362
NEW VALUE: <1354>
LOCATION: <154>
OLD VALUE: 0000
NEW VALUE: <104>
LOCATION: <171>
OLD VALUE: 2301
NEW VALUE: <2101>
LOCATION: <END>
RELATIVE CHECKSUM: <7676>

NEW BLOCK PATCHED OK
BLOCK: <CTRL/Z>
02 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <CR>
PATCHING MONITOR
BLOCK: <14>
LOCATION: <143>
OLD VALUE: 5567
NEW VALUE: <5570>
LOCATION: <372>
OLD VALUE: 6200
NEW VALUE: <6000>
LOCATION: <END>
RELATIVE CHECKSUM: <7601>
NEW BLOCK PATCHED OK
BLOCK: <15>
LOCATION: <110>
OLD VALUE: 5567
NEW VALUE: <5570>
LOCATION: <END>
RELATIVE CHECKSUM: <1>
NEW BLOCK PATCHED OK
BLOCK: <16>
LOCATION: <372>
OLD VALUE: 7660
NEW VALUE: <7650>
LOCATION: <END>
RELATIVE CHECKSUM: <7770>
NEW BLOCK PATCHED OK
BLOCK: <36>
LOCATION: <375>
OLD VALUE: 0110
NEW VALUE: <120>
LOCATION: <END>
RELATIVE CHECKSUM: <10>
NEW BLOCK PATCHED OK
BLOCK: <END>
04 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: <CTRL/Z>
EXIT
COS MONITOR 3.01C
```

Harris Semiconductor
M.S. 54-40
PO Box 883
Melbourne, Fl. 32901

NOTES FROM MICRO-8 WORKING GROUP

By Jonathan Lockwood Phone: (305) 724-7542

SPRING-79 SYMPOSIUM

The Spring-79 Symposium in New Orleans was interesting for the PDP-8 user because it shed some light on the future of the 12-Bit world. DIGITAL is still settling out from the recent reorganization and thus the Eight's future was somewhat doubtful. It seems that DEC's major thrusts for the future are prepackaged small business systems and a variety of word processing systems. Most of the PDP-8 based Product Lines have moved to Merrimack, NH and have begun a new spirit of cooperation. The COS-310 Product Line was recently given the green light for major new enhancements for the future; they had been on a shoestring, maintenance only budget. The future for the OS/8 - OS/78 operating systems was unclear and we will have to wait until San Diego for more information. The Word Processing Product Line appears to be taking the lead in the integration of the three operating systems on a PDP-8. They were demonstrating their 200 series systems which use 128k word PDP-8/A's. Since WPS-8 uses RTS/8-V3, it can be assumed that RTS/8 will be maintained and supported actively.

OS/8-V3D DEVICE EXTENSION KIT

This kit, which is shipping now, adds RL01, RX02, and KT8A support to OS/8 V3D. The basic order number for this kit is QF026; call your sales rep for more info. The kit includes a complete user's manual, a new 128K monitor, new device handlers, the sources of CLL and KL8E in MACREL, and some modified CUSPs. The user's manual is functionally an addendum to the OS/8 Handbook, however, it is written as a completely standalone, 40 page manual. The kit is NOT a complete OS/8 kit; it is only an extension kit. The minimum hardware is a 12K PDP-8/A/E/M, a DECstation-78, or a DECstation-88. It will support the VT-100 only at 4800 Baud.

One neat feature is a virtual handler for memory greater than 32K words. This VXAO handler will allow you to treat high core as a file structured device and thus speed up program execution. It can be either sys or non-sys and it can be BOOT'd to. You can think of this "funny" device as either 1,2, or 3 very fast DF32's.

OS/78-V3.0

Version 3 of OS/78, which was announced at the Symposium, will be available in June. It will provide support for RX02's, RL01's, VT-100's, and LA120'S. Fortran will support the Letter Quality Printer in interrupt mode and Basic will allow I/O to 3 non-system devices. Resequencing has been fixed to support the "ON" statement. A "SET HANDLER" command has been added to CCL which will allow the loading and insertion of non-system devices to the system head. This command was needed because BUILD can be very dangerous to the novice user. The following new handlers were developed for serial devices: SLU2 & SLU3 for serial hardcopy devices, and VLU2 & VLU3 for serial CRT devices. The VXAO handler, described above, will be available for the DECstation-88/97. The OS/78 User's Guide has again been combined into one unified document; with version-2 you received two documents - the User's Guide and a set of corrected pages. The basic order number for Version-3.0 is QF022.

OS/8 DOCUMENTAION SET

The OS/8 Handbook and its update document have been completely superseded by the following manuals:

<u>NAME</u>	<u>ORDER NUMBER</u>
OS/8 System Reference Manual	AA-H607A-TA
OS/8 Language Reference Manual	AA-H609A-TA
OS/8 TECO Reference Manual	AA-H608A-TA
OS/8 Error Messages	AA-H610A-TA
OS/8 System Generation Notes	AA-H606A-TA

These manuals are all printed as 8 1/2 X 11 documents, suitable for 3-ring loose-leaf binders. Although these manuals may look prettier than the old Handbook, they are basically a reprint of the same contents and NOT the necessary overhaul that was needed. You may want to think twice before spending the \$62.00 - YES \$62.00, (up from \$9.00 for the old Handbook) - for these manuals. For you TECO "freaks" the TECO Reference Manual may be useful however. To order these manuals call your local sales office or call the Technical Documentation Center nearest you (see page 32 of January 1979 newsletter).

PDP-8 COMMUNICATIONS

There were various sessions related to communication options on PDP-8's. During the OS/8 OS/78 sessions questions about the status of DECNET-8 were raised; ANSWER: it is DEAD!! Several alternative methods of talking to PDP-11's and other PDP-8's were discussed. For those of you who have a Word Processing system, you can use either the CX (Character Transmission) or DX (Document Transmission) protocols to transfer files. The CX mode is roughly equivalent to having a utility under OS/78 which can both emulate the dumb terminal mode as well as use PIP to transfer files to and from SLU2. The DX mode uses a packet transmission with full error checking and recovery to transfer all the internal control characters of Word Processing. The beauty of the DX protocol is that it can speak to PDP-11's, VAX's, PDP-10's, PDP-20's, as well as other PDP-8's. The DX protocol would be an ideal candidate for a replacement of DECNET-8, especially as a symbiont task. If you have suggestions along these lines, please let us know.

During a COS-310 session the features of the 2780/3780 RDCP (Remote Data Communications Package) were discussed. This package will be available soon and works with COS-310 V8.0. The new features are: DECstation-78 support (using a DP78A Synchronous Communication option); IBM 3780 Emulator Support (space compression); allows mixed disk devices supported by V8.0; allows printers supported by the monitor (DECstation-78 supports only the serial LA120 printer); and the card reader support has been removed. The package communicates in EBCDIC at up to 9600 BAUD for RK05 based systems (RL01 systems with COS-310 V8.1) and up to 4800 BAUD for floppy based systems. It supports both operator (attended) and batch (attended/unattended) modes. A 2780/3780 package would be a very useful addition to the Word Processing systems, however, this implementation will not work on the 200 series systems concurrently with WPS-8.

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ANNOUNCEMENTS

For all of you COS-310 users out there, and for those even considering the use of DIBOL (and to some CTS-300/CTS-500 users) this should prove to be one of the most important issues of the Newsletter to date.

1. We are pleased to announce that DEC has authorized us to reproduce ALL PATCHES to VERSION 8 of DIBOL. (Of course, V 8.1 is now out and we believe that any patches to that will also be included. V 8.1 adds the RLO1 handlers and is otherwise unchanged.) Accordingly, you will find the first three patches appended to this article. Please read the section on PATCHES carefully, it contains important notes.

2. The Spring DECUS at New Orleans produced several announcements of considerable moment.

DEC ANNOUNCES MAJOR COMMITMENT TO COS-310

Most important to this section was DIGITAL's announcement by COS-310 Engineering Manager Ray Arsenault that DEC has dedicated itself to a major commitment to COS-310 over the next two years. This will involve major improvements to the DIBOL language (both COS and CTS), as well as enhancements for the utility programs.

DIBOL STANDARDS ADVISORY COMMITTEE

Of interest to all DIBOL users will be the formation of a DIBOL STANDARDS ADVISORY COMMITTEE. Interested and qualified applicants who are able to commit themselves to two years hard work, including non-reimbursed travel expenses, should contact Ray Arsenault at Digital Equipment Corp. immediately, with a background resume. (This writer isn't technically qualified, although sincerely interested. We may, however, be provided with some information from time to time which we can pass on.) Qualifications should include 1-2 years experience in high level language development (especially DIBOL and DIBOL-11) and machine language familiarity. It is anticipated that due to the highly sensitive work involved, executed non-disclosure statements will be required.

The project is presently anticipated to have a duration of three years, with most of the "hard" work taking place in the first 1-1/2 years. REWARDS - Backbone to guide DIBOL development in the future.

DEC wants us to remind you, however, that formation of the group is not intended to imply or infer any future application on the part of DEC. Its principal purpose is to develop a set of Standards which, hopefully, will allow cross-over between the DIBOL-8 and DIBOL-11 lines.

WPS-200 SERIES RELEASED WITH COS-310 ON LINE WITH SINGLE RLO1 DRIVE!

Mr. Jack Gilmore, and his hard working staff, proudly released their long awaited WPS-200 series (WPS Version 4.00E) with COS-310 on line. Contrary to past rumours or mistaken representations, the Word Processing System and the COS-310 can operate simultaneously ON A SINGLE RLO1. More on this below, but we offer

our sincerest congratulations to Jack Gilmore, Bob McGeary (WP Product Manager) and the entire Word Processing Section on an excellent presentation.

PATCHES

Appended to this Article are the first three patches to Version 8.00, COS-310, which are the only patches to this time. IT IS IMPERATIVE THAT THE PATCHES BE INSERTED IN ORDER. FAILURE TO DO SO WILL RESULT IN INCORRECT CHECKSUMS AND PATCH FAILURE! You can determine whether your system has a prior patch by RUNNING the particular utility, without argument or switch, as the case may be, and ascertaining the version number. E.g. RUN SYSGEN without a switch will display its Version (SYSGEN V8.00B is latest) and RUN PIP will display its Version which is PIP V8.00A with the last patch.

The documentation with each of the Patches is, in this case, very self explanatory. (Patch PT02 answers the problem submitted by Rudi Stange which we discussed in the March issue.)

WISH LISTS

Mike Daugherty, COS-310 Project Development Leader, who was ever present at all DIBOL-related seminars, has cautiously sought our aid in providing him with WISH LISTS for COS-310. Mike suggests that you forward your thoughts to this author and I will undertake the delightful task of sorting them out and forwarding them on to him. Mike's personal dedication to this program certainly was reflected in some obvious exhaustion before the end of the Symposium. [Take it easy, Mike, we need you out here.]

Among the Wish List submissions at New Orleans of some note to you COS-310 users were: (a) Wild Card PIP (will be released in V 9.00); (b) Directory Sort (not likely due to other priorities); (c) Multiple Column Directory Display and Printout (probable release, perhaps in Version 9.00); (d) IF/THEN/ELSE and logical AND/OR, with variable alterations in addition to GOTO or CALL (such as with BASIC+) (the demand for this feature was unanimous); (e) Lower Case Support, both on input and output (maybe!). [EDITORIAL COMMENT: COS-310 is now provided with most WPS installations. It is used with the LQP at least as often, if not more so, than with line printers. The need for lower case support, especially for small businesses, is so obvious that there should not really be much argument upon the subject. While it may be necessary to give up some other options, it would seem that this is one which is deserving of considerable attention. While we are informed that the problem is with a very limited OP-CODE availability, we would hope that something can be worked out, soon.]

More Wish List submissions: (f) Calls to assembly routines (not likely as there is no current provision for LINKing); (g) Calls to unlimited source files (may be implemented in V 9.00); (h) Reference to Real Time Clock (not too much interest -- certainly not a priority item); (i) 12-pitch to the LQP (may be implemented by the SET command to be released in V 9.00); (j) Increase SCRATCH (buffer) area for text, to avoid TEXT EDITOR FULL messages and to permit more complete documentation on long programs (may be cured with larger buffer area or with ability to compile more than seven source files, or some combination); and (k) COPY Statement (no immediate comment).

The presence of what appeared to be the entire COS-310 engineering work force at the Wish List session seems to emphasize the seriousness of DEC's announcement of a dedicated all-out commitment to a re-newed support for DIBOL.

SOME VERSION 9.00 NOTES

While Version 9.00 is not scheduled for release until some time in January 1980, some of its potential highlights were disclosed by Mike Daugherty. A few are set forth here, and we will attempt to get a better idea from Mike in the coming months.

WILD CARDS will be available in much the same manner as with RSTS and other DEC systems for PIP. Both "?" and "*" will be supported.

The Direct command will default to the TERMINAL instead of the printer. (About time!)

COMMENTS will be permitted in BATCH STREAMS with exclamation points (in lieu of semi-colons). (Presently, comments are not permitted. However, we have found it easy to place them at the end of a BATCH stream where they don't affect the running of the BATCH. This is especially true where the last command refers to the RUNNING of a MENU program.)

The BINARY SCRATCH AREA will be a named file. This should eliminate the need for PIP/7 on the E option for those really long programs.

A SET and SHOW command will be added to the Monitor to display and adjust system characteristics.

CTRL C may be enabled or dis-enabled.

RL01s will be supported (and are currently supported in Version 8.01, which should be released by the time this Newsletter arrives).

SOME NEW ORLEANS DECUS SYMPOSIUM NOTES

In addition to what is discussed above, there were many interesting releases and discussions at DECUS. Certainly too many to set forth here. Attendance was about 2200 (and that doesn't include the spouses and friends). For those able to survive the 30 below temperatures and hurricane force air conditioning, most of the presentations were very worth while. However, mile-long lines for lunch were, and are, entirely unacceptable. For two days it was impossible to eat lunch without standing in line for at least 20 to 30 minutes; not only were the lunches not worth the long wait in quality, they weren't worth the rediculously high prices (we were told \$10.00) for less than great quality buffet. On Tuesday and Wednesday there were long lines past 2:00 P.M., and much of the food was gone.

VT-100s are now up to speed and being released on a current basis. (Our experience with those on display left a lot to be desired, as discussed below.)

RX02s are in short supply, and those which have been released have been reported to be less than satisfactorily reliable.

COS DATE WINDOW FOR EARLIER VERSIONS - NOT TO BE SUPPORTED. For those who have written and inquired as to a patch for date support for dates after December 31, 1979, the official response by DEC is that there will be no such support for any version earlier than V 8.00.

EXCEPTION - VERSION 3.07. Mr. David Marks, Manager, H.A. SHELDON INC., 225 Nantucket Boulevard, Scarborough, Ontario Canada, MIP 2P2, has provided us with a copy of a patch for Version 3.07. (The Patch is appended at the end of the PATCHES for Version 8.) On inquiry as to why Version 3.07 was supported with a patch (which may also work on other Versions 3), we were advised that this particular version is used in

connection with certain type-setting programs that do not run on later versions. Whatever, the Patch provides an 8-year window with the base year being 1980. (If the copy is not sufficiently legible through duplication of this Newsletter, please let me know and I will forward a new copy to those of you who require it. SASE, please!) Thank you very much, Mr. Marks.

DIBOL VS. BASIC+2 VS. COBOL BENCHMARK - DIBOL WINS HANDS DOWN

Neil Baldrige, of Compu-Share, Inc., Lubbock, Texas, presented us with an interesting comparison of preparation times, task sizes, CPU times, etc., with respect to preparing and running a business-oriented program on DIBOL, BASIC+2 and COBOL. The test program was little more than an employee payroll report, but the results were quite interesting. Preparation time of the code, itself, is too subjective for real consideration (e.g., 6 hrs for DIBOL vs. up to 18 hrs for the others) as too many variable considerations exist. E.g., experience of the programmer and, as in this case, who created the parameters (Neil set the parameters and wrote the DIBOL program).

Each program was run on a PDP-11/70:

	CLOCK TIME	CPU TIME	TASK SIZE	CODE GENERATED (LINES)
BASIC+2	14 sec.s	4.2 sec.s	7K	324*
COBOL	60 sec.s	2.6 sec.s	20K + 2k RTS	571
DIBOL	11 sec.s	1.7 sec.s	4K + 8K RTS	357

[* Since the BASIC program did not use "lines" in the same manner as DIBOL and COBOL, this is a rough guesstimate.] Very impressive, Neil.

DIBOL KEYBOARD CHARACTER SUBROUTINES WITH WPS CHARACTERISTICS

Attached for your use is an enhanced version of the Keyboard Character Routine described in Appendix D of the COS-310 (V 8) manual. It allows for escape routines, including the GOLD key, and RUB WORD and RUB LINE keys. [Next issue we will add the entire keypad, for use in forms type entries.] ALSO NOTE, the routine allows for non-numeric entries of "\$", ",", "." and [space] in the numeric call routine (VT52N). [A "space" entry was treated as a terminating character to the Manual.]

Needless to say, the routine can be modified with ease to accommodate any escape routine. (One interesting feature with escape routines is the recapture of the entered information before entry of an incorrect escape routine so that no operator-entered information is lost, and the operator knows where she/he was before the error message was entered.)

WPS-200 WITH COS-310 DEBUTS AT NEW ORLEANS DECUS

As noted above, Jack Gilmore and his staff (from Los Angeles to New Hampshire) proudly released their WPS-200 series, with COS-310, at DECUS, which was its first public showing with DP. (We know that, because they were still "patching" it to bring everything up at New Orleans.)

The configuration presented at the show was a WPS-224 (hope I got that right, Jack); or, a PDP-8/A with a single dual RX01, a single RL01, four VT-100s and two LQP (Diablo) printers. Also on line were four data phones.

This writer is a severe critic of Word Processing Systems in general, and has not hesitated to criticize DEC's systems, along with any others, when appropriate. (We currently use a WD-102.) With the introduction of this WPS-200 series, and an opportunity to interview Jack Gilmore with respect to future enhancements presently nearing release stage, this writer is most favorably impressed, as well as fairly well satisfied that DEC's WPS-8 word processing systems are the finest value available in the market today -- at any price!

We were discouraged with the regularity of VT-100 failures; however we are also aware of the fact that early production models were, and still are, defective. We are informed -- and from other sources this information appears to be reliable -- that current production of the VT-100 has overcome the reliability defects so obviously present in the past. (In any event, that would not be a WPS defect.)

We were pleasantly impressed with the obvious time differential between operations on the RL01s and RX01s. Time savings of a magnitude of ten, in some operations, would not be unexpected.

COS-310 ON THE WPS-200

Naturally, the first keys I typed were "CX" and, wonders never cease, there was the COS option included with the other communications options. [COS operates on the system in background through an RTS format, and is addressed through the CX command. We will provide more on the entire protocol in a later issue. Space just doesn't permit any more at this time.]

Entering "COS" as the option, we were in COS MONITOR, V8.00.

Operation was rather interesting. With the other terminals in active use (e.g., a search through a document was a real test!) screen displays from COS were slowed to well below 300 baud. At other times the task would run displays at about 1200 baud. Non-display operations appeared to operate quite well. My 26K programs ran without any problems, per se, after the crew patched in 32K to the COS (they only started with 16K words).

An interesting feature of the CX mode is that a DIBOL program which does not require any interaction with the operator can be exited with the BACKSLASH R command, at which time any other word processing operations may be resumed by the operator, who can return at any time through the communications mode. WE URGE YOU TO RE-READ THIS, AS IT IS AN UNIQUE POTENTIAL WHICH PRESENTLY IS AVAILABLE ONLY ON DEC'S WPS-200 SYSTEMS.

Naturally, we had to be the one to find the "bug" in that last operation. When exiting COS-310 there is no current way to disable the COS MONITOR, once it has been initiated (e.g., no "BYE" command). Thus, it continues to be active even after leaving it to perform some other task in word processing. Upon return to the CX command protocol, an attempt to re-enter COS crashed the entire system (i.e., all terminals went down). Actually, this is not a serious problem and we are informed that a patch will be made to cure it, probably before I write this, let alone publish it. (Bob, don't lose the ability to operate the COS and WPS from the same terminal at the same time. That's just too good a facility!)

AVAILABILITY OF SINGLE RL01 FOR COS/WPS OPERATIONS

Jack Gilmore has authorized us to release, as official, the information that the WPS-200 will be available with a single RL01 which will handle the COS and WPS protocol at the same time. (Previous information -- which Mr. Gilmore insists did not originate from his staff -- was to the effect that COS support would require a configuration of not less than two RL01s.)

However, it is our opinion -- and is strongly advised by all of the WPS personnel -- that no RL01 configuration of less than two would be wise, except in the most unusual circumstances. It is not practical to backup an RL01 on floppies; obviously, it is not intelligent to operate without backups.

RX02 NOT TO BE SUPPORTED BY WPS - BUT, RX03 OR RX04??

Due to current reliability difficulties, and the lack of any particularly significant improvement in the amount of storage over the RX01 by the RX02 (about 40%), WPS has decided not to support the RX02. It will, however, probably offer support to the RX03 or RX04 (dual sided and dual density) when they are released, assuming a reasonably reliable hardware product.

OS/8 SUPPORT ON THE WPS-200?

There was some suggestion, or hint, that OS/8 may also be supported on the WP System. We were unable to confirm this, but the information was passed on by a "reliable source".

There are releases (which were available at DECUS) which provide binary handlers for up to four RL01s with OS/8.

WPS SUMMARY

In case you haven't gotten the picture, it is this writer's personal opinion that the WPS-200 series represents the finest investment potential in medium priced office processing equipment currently available anywhere on the open market. The program potential for small and medium-sized office WP and DP requirements on the same machine, at the same time, and data entry in either mode is rather exciting. While the combination now enables sort and math packages in a fast mode, through interactive DIBOL and WPS interchange of information, future enhancements of the WPS will provide for direct SORT and MATH in the WPS mode.

Also, most of the program enhancements of the WPS-200 series will be integrated on the WS/WD-80 series equipment. Everyone benefits.

For those of you who have read the past two issues of this column, you are aware of our comments on an apparent lack of cooperation between the WP and DP groups. Well, if it did ever exist, there certainly was no evidence of any friction at DECUS. On the contrary, it appeared to us that the mood was one of genuine cooperation and team effort. We certainly were impressed with the public displays of mutuality of purpose.

WORD PROCESSING SIG???

The new "Word Processing Sig" seminar was rather disappointing. While the "Sig" has not been formalized, yet, it is going to require a great deal of improvement to have something of significance to offer.

WORD PROCESSING HINTS COLUMN?

We were requested to inquire as to what, if any, interest there might be out there with respect to some hints with respect to Word Processing applications on the WPS-8 series (i.e., WPS-100, WPS-78, WPS-80 and WPS-200).

If there is an indicated interest, we will add a section in this column on such hints as (a) answers to troublesome problems; (b) the "HELP" feature for the system

libraries (e.g., many times the library should reside on the data diskette, and not the system diskette); and (c) just a general "how to" column.

FROM THE MAIL BAG

Due to space limitations (which I already have exceeded by far) we can not print entire letters. We will, however, comment on as much mail as we can, and we will try to get your names, addresses, etc., in so that others can communicate with you with respect to your inquiries.

From Robert C. Whitefield, Medical Bureau of NC, Inc., 2814 Chapel Hill Road, Durham, NC, 27707, we have received a very enterprising venture. Mr. Whitefield, who is a college student and works part time as a programmer, has advised us that he is working on a word processing system written in DIBOL! Features include: direct cursor control during text entry (arrow controls); a text file directory, insertion and deletion of characters, lines of text, pages of text, automatic justifying and printer paging and numbering; use of user defined strings and field definition and entry.

Recognizing the availability of WPS-8, still Mr. Whitefield believes that there is a need for word processing on those systems which are only DATA systems.

ANYONE INTERESTED IN COLLABORATING ON THE PROJECT IS URGED TO WRITE TO MR. WHITEFIELD.

(Bob, your date problem is discussed above - sorry, but, then, the DATE function really is of little utility in earlier versions of COS. Just enter an earlier year. I'll discuss your PATCH problem and the program submittal next time. Good luck on your project.)

John P. Tuttle, Director Quality Information, Millipore Corporation, Bedford, Massachusetts 01730 (617)275-9200, would like to know if there are any private sources for faster WPS-COS utilities. Yes, there are. When I find out if I am allowed to publish that type of information (i.e., they charge for them) I'll be more direct.

In the meantime, I believe that DEC has a faster version ready for unofficial release (VERSION 3). If I can (a) get a copy from DEC (or anyone else for that matter) and (b) get DEC's permission to do so, I will provide copies on floppies to those having a need. Due to the delays in time between publication of this Newsletter, etc., I would suggest that anyone interested in receiving such copies send me an SASE, ONLY, at this time and, if I get (a) and (b) from DEC, I'll return your SASE at which time you can send me a diskette and another SASE for its return and I'll copy as many as I can. Please, only one to a site.

NOTE TO Rudi Stange: - Rudi, please read the PATCH notes, above, and make sure you enter PT01. As to SYSGEN/C requiring a re-boot, I am informed that a trade-off was involved, in order to save some op-code for other features, and that it was felt that a re-boot should not be all that difficult. If that is the case, then I have not found re-booting to be too much to ask for.

For those of you who missed New Orleans, you really missed out on a fine Symposium (except for lunch!). San Diego is next, and we do hope to see you there. (Of course, for those of you able, why not give some support to our European cousins. We understand that Monte Carlo is not a bad place to lose your money.)

0100 START/T

KEYBOARD CHARACTER SUBROUTINES

```
0110 ;
0120 ;
0130 ;           WITH WPS CHARACTERISTICS
0140 ;
0150 ;           *****
0160 ;
0170 ;           PRESENTED WITH THE COMPLIMENTS OF YOUR 12-BIT/DEBUG DIBOL
0180 ;           "COORDINATOR", LAWRENCE H. EISENBERG - 17141 NANCE STREET
0190 ;           ENCINO, CALIFORNIA 91316; TELEPHONE (213) 788-0354
0200 ;
0210 ;           *****
0220 ;
0230 ;           THE FOLLOWING SUBROUTINE WILL PERMIT THE USE OF THE "GOLD"
0240 ;           KEY, WHICH IS USED IN WORD PROCESSING SYSTEMS, TO BE USED
0250 ;           AS A SUBROUTINE IN CONNECTION WITH ANY OF THE EDITING KEYS
0260 ;           OR, FOR THAT MATTER, ANY OTHER KEY, WHICH MIGHT OTHERWISE
0270 ;           BE USED BY A WORD PROCESSING OPERATOR.
0280 ;
0290 ;           THE ROUTINES PRESENTED INCLUDE "GOLD M" (GOLD MENU), "GOLD
0300 ;           RUB CHAR OUT" (GOLD RUB LINE) AND "RUB WORD OUT", WHICH ARE
0310 ;           THE MOST FAMILIAR TO THE WPS USER IN CONNECTION WITH KEYBOARD
0320 ;           ENTRIES.
0330 ;
0340 ;           NOTE THAT MODIFICATIONS AND ADDITIONS ARE EASILY ACCOMODATED
0350 ;           IN THE ROUTINES -- ALTHOUGH THEY DO USE CONSIDERABLE PROGRAM
0360 ;           SPACE. NOTE, ALSO, THAT THE "GOLD" KEY IS AN "ESCAPE P"
0370 ;           SEQUENCE, WHICH REQUIRES A LITTLE EXTRA PROGRAMMING.
0380 ;
0390 ;           FINALLY, AN INTERESTING ASPECT OF THE "GOLD" OR "ESCAPE"
0400 ;           ROUTINES PRESENTED HERE IS THAT (A) THEY RETURN AN ERROR
0410 ;           MESSAGE IF A NON-EXISTENT SEQUENCE IS USED AND (B) IN DOING
0420 ;           SO THEY SAVE THE OLD INPUT AND RE-DISPLAY IT FOR FURTHER
0430 ;           ACTION BY THE OPERATOR.
0440 ;
0450 ;           (ALSO, NOTE THAT A SUBSTANTIAL PORTION OF THE PROGRAM WAS
0460 ;           PLAGIARIZED FROM APPENDIX D OF COS-310 REFERENCE MANUAL)
0470 ;
0480 ;           THE NUMERIC ROUTINE HAS ALSO BEEN MODIFIED TO PERMIT
0490 ;           THE OPERATOR TO ENTER CERTAIN COMMON NON-NUMERIC
0500 ;           CHARACTERS (E.G., $ , . ETC) WITHOUT ERROR MESSAGES
0510 ;
0520 ;           *****
0530 ;
0540 ; ...
0550 ; ...
0560 ;
0570 RECORD
0580     KBDBUF  ,A80;   KEYBOARD CHARACTER SUBROUTINE
0590 RECORD, X
0600     KBDIN   ,80A1
0610 RECORD
0620     BLNK80  ,A80
0630     ROW     ,D2
0640     COL     ,D2
0650     TCHAR   ,D2
```

```

0660 CHAR ,A1
0670 VT52IN ,D2
0680 VT52SW ,D1
0690 VT5215 ,D15
0700 VTLIM ,D2
0710 VT52XX ,A16
0720 RECORD
0730 MONY ,A15, '$XX,XXX,XXX.XX-'
0740 ; ...
0750 ; ...
0760 ;
0770 PROC
0780 ;
0790 ; ...
0800 ; ...
0810 ;
0820 ; "VT05"
0830 ; SUBROUTINE FOR ACCEPT/RUBOUT CONTROL
0840 ;
0850 VT05, ; OLD CALL NAME (FROM V 6.05) SAVE FOR OLD SYS FILES
0860 VT52A, ; NEW CALL (NEXT ONE VT100?)
0870 VT52SW=
0880 GOTO VT52; ALPHANUMERIC ENTRY
0890 VT52N,
0900 VT52SW=1; NUMERIC ENTRY
0910 VT52,
0920 VT52IN=
0930 KBDBUF=
0940 DISPLAY (ROW,COL,0)
0950 VT522,
0960 ACCEPT (TCHAR,CHAR)
0970 IF(TCHAR.EQ.0)GOTO VT523
0980 IF(TCHAR.EQ.10)GOTO VT525; RUB WORD
0990 IF(TCHAR.EQ.21)GOTO VT524; CTRL/U
1000 IF(TCHAR.EQ.26)RETURN; CTRL/Z - REPLACE MENU
1010 IF(TCHAR.EQ.27)GOTO VTESC; ESCAPE SEQUENCE
1020 IF(TCHAR.EQ.32)GOTO VT525; RUBOUT
1030 VT522X,
1040 IF(VT52IN.EQ.0)RETURN; ALPHANUMERIC INPUT
1050 IF(VT52SW.EQ.0)RETURN
1060 VT522Y,
1070 VT5215=KBDBUF(1,VT52IN); NUMERIC INPUT (MAX 15 CHARS)
1080 VT52XX(1,VTLIM+1)=VT5215,MONY; ($XX,XXX,XXX.XX-)
1090 ;
1100 DISPLAY(ROW,COL-1,VT52XX(1,VTLIM+1))
1110 ; RIGHT-JUSTIFIED AND ZERO SUPPRESSED
1120 RETURN
1130 VT523,
1140 IF(VT52SW.NE.1)GOTO VT523X; SAVE ALPHANUMERIC INPUT
1150 IF(CHAR.EQ.' ')GOTO VT523C
1160 IF(CHAR.EQ.'.')GOTC VT523C
1170 IF(CHAR.EQ.'$')GOTO VT523C
1180 IF(CHAR.EQ.',')GOTO VT523C
1190 IF(CHAR.EQ.'-')GOTO VT523X
1200 IF(CHAR.LT.'0')GOTO VT523B; ERROR - ALPHA INPUT
1210 IF(CHAR.LE.'9')GOTO VT523X

```

```

1220 VT523B,
1230     DISPLAY (0,0,7)
1240     GOTO VT52
1250 VT523C,
1260 ;           SAVE AND DISPLAY SPECIAL ALPHA CHARACTERS
1270 ;           WITH NUMERIC INPUT
1280     INCR VT52IN
1290     IF(VT52IN.EQ.VTLIM)GOTO VT526
1300     DISPLAY(ROW,COL+VT52IN,0);           REPOSITION CURSOR AND CONTINUE
1310     GOTO VT522
1320 VT523X,
1330     INCR VT52IN
1340     KBDIN(VT52IN)=CHAR
1350     IF(VT52IN.EQ.VTLIM)GOTO VT526
1360     GOTO VT522
1370 VT524,
1380     IF(VT52IN.EQ.0)GOTO VT52
1390     DISPLAY(ROW,COL,BLNK80(1,VT52IN)); CLEAR ALL CHARACTERS ENTERED
1400     GOTO VT52
1410 VT525,
1420 ;           RUB OUT AN ENTIRE WORD
1430     IF(VT52IN.EQ.0) GOTO VT522
1440     KBDIN(VT52IN)=
1450     VT52IN=VT52IN-1
1460     VT52XX=VT52IN+COL
1470     DISPLAY(ROW,COL+VT52IN,' ');           RUBOUT PREVIOUS CHAR
1480     DISPLAY(ROW,COL+VT52IN,0);           REPOSITION CURSOR
1490     IF(TCHAR.NE.10)GOTO VT522;           WAS RUB LETTER - ONLY ONE CYCLE
1500     IF(KBDIN(VT52IN).EQ.' ')GOTO VT522;           BEGINNING OF WORD
1510     GOTO VT525;           DO IT AGAIN
1520 VT526,
1530     IF(VT52SW.EQ.1)GOTO VT522Y
1540     RETURN
1550 VTESC,
1560 ;           "ESCAPE" ROUTINES
1570 ;           NOTE: PRESENTLY FOR "GOLD" (ESCAPE P) ONLY
1580 ;           EASILY MODIFIED FOR ANY ESCAPE ROUTINE
1590     TCHAR=
1600     ACCEPT(TCHAR,CHAR)
1610     DISPLAY(ROW,COL+VT52IN,' ');           RUBOUT "ESC" CHARACTER
1620     DISPLAY(ROW,COL+VT52IN,0);           REPOSITION CURSOR
1630     IF(TCHAR.NE.0)GOTO VT522;           ESCAPE CANCELLED OR CTRL ENTERED
1640     IF(CHAR.NE.'P')GOTO VTESC2;           NOT "GOLD" KEY
1650     ACCEPT(TCHAR,CHAR);           GET NEXT ESCAPE LETTER
1660     IF(TCHAR.EQ.32)GOTO VT524;           RUBOUT ENTIRE LINE AS W/ CTRL/U
1670     DISPLAY(ROW,COL+VT52IN,' ');           RUBOUT "ESC" CHARACTER
1680     DISPLAY(ROW,COL+VT52IN,0);           REPOSITION CURSOR
1690     IF(CHAR.NE.'M')GOTO VTESC2;           NOT "GOLD MENU" - WHAT IS IT?
1700     TCHAR=26;           MAKE IT LOOK LIKE CTRL/Z
1710     RETURN
1720 VTESC2,
1730     CALL BELL
1740     DISPLAY (ROW,COL,2)
1750     DISPLAY (ROW,COL,'INCORRECT ESC ROUTINE - PRESS "RETURN"')
1760     ACCEPT(TCHAR,CHAR)
1770     DISPLAY (ROW,COL,2);           ERASE ERROR MESSAGE

```

```
1780      IF(VT52IN.LT.1)GOTO VT522;  IT'S 0, DON'T CRASH SYSTEM
1790      DISPLAY (ROW,COL,KBDBUF(1,VT52IN));      REDISPLAY DATA; POSITION (
1800      TCHAR=
1810      GOTO VT522
1820 ;
1830 BELL,
1840      DISPLAY (0,0,7)
1850      RETURN
```

COS-310 OFFICIAL DEC PATCHES (3)

TITLE: Copying Files Using SYSGEN/B

PROBLEM: When executing SYSGEN/B to build a new system, if the response to IS EVERYTHING CORRECT? is NO, the switch for the question DO YOU WANT TO COPY YOUR FILES is not reset. This can result in copying files when not requested.

SOLUTION: The following patch to SYSGEN corrects this problem. It also changes the version number of SYSGEN to V8.00A.

1. Create a PATCH command file (PT01) using the following editor commands:

```
.ER
.LN
.0100 SYSGEN
.0110 15
.0120 152
.0130 4540
.0140 153
.0150 4541
.0160 154
.0170 5555
.0180 155
.0190 0255
.0200 254
.0210 5152
.0220 255
.0230 3335
.0240 END
.0250 0531
.0260 20
.0270 314
.0280 2142
.0290 END
.0300 0041
.0310 END
.0320 /X
.0330 <ctrl/z>
.WR PT01
```

2. Check the PT01 command file by running PATCH without the /C option. PATCH simulates the patching operation but does not change the file on the system device. When run without the /C option, PATCH displays CHECKSUM CORRECT--USE OPTION C TO UPDATE rather than NEW BLOCK PATCHED OK. To check the command file enter the following:

```
.R PATCH,PT01
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor. If PATCH does not return to the Monitor, check the PT01 command file to insure that it was entered correctly.

3. Install the patch by entering the following command:

```
.R PATCH,PT01/C
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor.

TITLE: Half-block Transfers using RX Handler

PROBLEM: There are occasions when the RX handler is called upon to read or write only half a block. The most common of these occasions (but definitely not the only one) is when adding an entry to a directory. On systems that are SYSCENed for both RX01s and RK05s, the RX handler transfers a full block causing part of the program or data area to be unexpectedly altered. When adding an entry to a directory, this results in corruption of the directory.

SOLUTION: The following patch to SYSGEN corrects this problem. It also changes the version number of SYSGEN to V8.00B.

1. Create a PATCH command file (PT02) using the following editor commands:

```
.ER  
.LN  
.0100 SYSGEN  
.0110 2  
.0120 171  
.0130 5265  
.0140 305  
.0150 7576  
.0160 END  
.0170 0003  
.0180 20  
.0190 314  
.0200 2143  
.0210 END  
.0220 0001  
.0230 END  
.0240 /X  
.0250 <ctrl/z>  
.WR PT02
```


2. Check the PT02 command file by running PATCH without the /C option. PATCH simulates the patching operation but does not change the file on the system device. When run without the /C option, PATCH displays CHECKSUM CORRECT--USE OPTION C TO UPDATE rather than NEW BLOCK PATCHED OK. To check the command file enter the following:

```
.R PATCH,PT02
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor. If PATCH does not return to the Monitor, check the PT02 command file to insure that it was entered correctly.

3. Install the patch by entering the following command:

```
.R PATCH,PT02/C
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor.

4. If you are running a system that is SYSGENed for RX01s and RK05s, you must run SYSGEN/C after installing the patch.

TITLE: Using Command Files with PIP

PROBLEM: PIP fails to get the response to the prompt MORE? from the command file when copying data files using option D.

SOLUTION: The following patch to PIP corrects this problem. It also changes the version number of PIP to V8.00A.

1. Create a PATCH command file (PT03) using the following editor commands:

```
.ER  
.LN  
.0100 PIP  
.0110 02  
.0120 371  
.0130 2706  
.0140 END  
.0150 0332  
.0160 06  
.0170 306  
.0180 0000  
.0190 307  
.0200 4501  
.0210 310  
.0220 1713  
.0230 311  
.0240 1314  
.0250 312  
.0260 5706  
.0270 313  
.0280 4000  
.0290 314  
.0300 7447  
.0310 END  
.0320 4667  
.0330 10  
.0340 104  
.0350 2142  
.0360 END  
.0370 0041  
.0380 END  
.0390 /X  
.0400 <ctrl/z>  
.WR PT03
```

2. Check the PT03 command file by running PATCH without the /C option. PATCH simulates the patching operation but does not change the file on the system device. When run without the /C option, PATCH displays CHECKSUM CORRECT--USE OPTION C TO UPDATE rather than NEW BLOCK PATCHED OK. To check the command file enter the following:

```
.R PATCH,PT03
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor. If PATCH does not return to the Monitor, check the PT03 command file to insure that it was entered correctly.

3. Install the patch by entering the following command:

```
.R PATCH,PT03/C
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor.

TABS-8 SYS V3.07G

DATE?

.DA 2/2/79

TABS-8 SYS V#.07G

.R PATCH/??

COS PATCH SYSTEM VERSION 3.07

FILE NAME:

PATCHING MONITOR

BLOCK: 14

LOCATION : 143

OLD VALUE : 5567

NEW VALUE : 5570

LOCATION : 372

OLD VALUE : 6200

NEW VALUE : 6000

LOCATION:

RELATIVE CHECKSUM: 7601

NEW BLOCK PATCHED OK

BLOCK: 16

LOCATION : 372

OLD VALUE : 7660

NEW VALUE : 7650

LOCATION :

RELATIVE CHECKSUM: 7770

NEW BLOCK PATCHED OK

BLOCK: 36

LOCATION : 375

OLD VALUE: 0110

NEW VALUE : 120

LOCATION :

RELATIVE CHECKSUM: 0010

NEW BLOCK PATCHED OK

BLOCK:

03 BLOCK (S) PATCHED IN THIS FILE

FILE NAME: COMP

BLOCK : 2

DATE 4/24/79

COS-310 WORKING GROUP

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LOCATION : 211
OLD VALUE : 1630
NEW VALUE : 1631
LOCATION :
RELATIVE CHECKSUM: 0001
NEW BLOCK PATCHED OK
BLOCK : 14
LOCATION : 164
OLD VALUE : 0132
NEW VALUE : 144
LOCATION : 172
OLD VALUE : 2301
NEW VALUE : 2101
LOCATION :
RELATIVE CHECKSUM: 7612
NEW BLOCK PATCHED OK
BLOCK:
02 BLOCK (S) PATCHED IN THIS FILE
FILE NAME:
EXIT
TABS - 8 SYS V3.07G

General Latex and Chemical Corporation (of Ohio)
P.O. Box 498
Ashland, Ohio 44805

April 30, 1979

Robert Hassinger, Coordinator - 12BITSIG)
c/o DECUS MR2-3/E55
One Iron Way
Marlboro, MA 01752

Dear Rob,

I have finally gotten around to studying the 12BITSIG newsletters 29 to 33, as well as reviewing the contents of newsletters 1 thru 33. (I find the 12BITSIG newsletter to be far and away the most informative of the four SIG newsletters which I receive.) Since I am now spending all of my computer time on an '11, I don't set too much time for working on the '12.

I wanted to make a couple of 'answer/comments' about Newsletter 31, page 50 from Earl Ellis. Earl reports a patch to change the default number of columns in PAL8. I patched PAL8 some time ago, and I think it was V10 under OS/8 V3C, for the same problem; but also mentioned an incompatibility between the distributed 7 column version and CREF. CREF will truncate the 7th column of symbols (translated as the 7th column of symbols will disappear totally without warning or operator knowledge) because of input buffer variation between the two utilities. I would assume that this 'bug' also existed in V3D PAL8. If anyone is interested, I think I can 'resurrect' this patch, which also included a date correction.

Earl is also looking for a V2 or earlier TC58 handler. Believe it or not, the handler for a 7 track TC58, and two FOCAL programs for formatting the tape was published in Newsletter Number 1 !! This newsletter was printed in Volume 10, Number 2 of the 'old' (and better) DECUSCOPE magazine. I believe it was printed in the spring of 1972. This handler is definitely pre-OS/8 V-2, since it is a PS/8 handler. I can't verify its utility, simply because I don't have mastape. (If necessary, I can Xerox copy the article if it is not available any longer -- let me know.)

In Newsletter 32, page 35, someone asked for help in obtaining MENU documentation from CTS-300 version 5. I don't find any MENU help in the release notes, but there are some excellent suggestions for improving terminal performance. MENU is a section of the DECFORM Users Manual, and is directed to a screen page (or multiple pages) method of 'calling' a desired program. I haven't yet had the need for MENU, but I have written a DIBOL program which does the same job. (Back to the PDP-12 for a minute -- Under FOCAL-12 I had at least 3 programs which used a VR-12 screen 'page' setup to 'call' chained programs by operator choice. This is now apparently called 'MENUING'.)

Robert Hassinger

30-APR-79

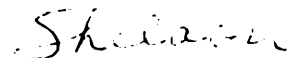
Page 2

MENU in CTS-300 is a 'builder' program, that is, a DIBOL source file is generated around the control file (input) parameters selected or specified by the programmer. I'm not sure it would be of any value to COS-310 users, but if it hasn't yet been obtained, it can be ordered from DEC as AA-5792C-TC. (Incidentally, CTS-300 and CTS-500 now use the same manuals. Wouldn't it be nice if ALL DIBOL-type programs had common users manuals.)

Bob, I'll now ask a question which faces all DEC computer users, no matter whether '8, '11, '10, '12, or '15. Even though RUNOFF is now fairly available, it still isn't a word processor. It seems that some type of 'word processor' could be developed, perhaps in TECO, which would handle the preparation of at least letters, if not documents or manuals. I realize the value of RUNOFF, and use it quite frequently, but it would be a lot simpler if the editor had a built-in capability to do much of the task directly. This is especially true with the advent of the VT-series of display-type terminals. Do you know of anyone who has done such a job, or perhaps started the task ?? The way DEC has bundled WP with hardware seems to indicate that we will never be able to purchase (for a nominal price) the software for our existing, non-obsolete, and perhaps even brand new shiny PDF-8A's and -11's.

(This letter was done by a TECO justification macro, which I wrote to operate in conjunction with the VT-52 editing macro under RT-11. It's very rudimentary, but works even though I believe that a better mouse trap can be built.)

Sincerely Yours,



H. S. Hopkins Jr.

FORCED '?' IN DELETE COMMAND

Lars Palmer recently suggested forcing /Q in the potentially dangerous 'DEL' command. Since a forced CCL option cannot be overridden (unless one goes direct to the operating program - FOTP in this case) I wondered whether inverting the option to /Y if you do want everything to happen might not be tidier. This requires changes in FOTP:

```
14210/ 7650 7640
14220/ 7650 7640
14374/ 0200 4000
14375/ 7644 7645
```

Unfortunately you then have to remember to specify /Y if you don't want every COPY, LIST, RENAME or TYPE command queried!

Going back to Lars Palmer's idea, then, a quick way of getting the required result without having to recompile CCL is to change the option from /Q to /A ('Ask'). This can then be forced along with /D and /L in the 'DEL' command. The changes needed are

```
FOTP:    14374/ 0200 4000
         14375/ 7644 7643

CCL:     12676/ 0401 4401
```

4.4.79

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