

WANG SYSTEMS NEWSLETTER NO. 4

THINGS WILL CHANGE

September 1977

Presently, the Newsletter is a bimonthly publication. If there is sufficient demand for it, the Newsletter can be changed to a monthly publication. Based upon the requests received from our readers, there will be a change. Direct your comments and/or responses to:

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NEW PRODUCTS RELEASED

- WCS-15 A stand-alone computer system with a 2200T-4 (min) CPU, 2226 CRT/keyboard (24x80 CRT optional), single 2270 diskette drive expandable to maximum of two drives only, desk-styled furniture to house system, provisions for supporting one optional Wang printer or plotter, and provisions for one optional microprocessor controller.
- 2209A Nine-track, 1600 BPI tape drive that can transfer data at speed up to 120KB while transporting tape at 75 ips (inches/record). A special controller, formatter, and cabling is included.
- 2201L This product is similar to the old 2201 typewriter except that the 2201L is controlled by the same controller which is used for the high speed printer - the same controller that is built into the PCS, PCS-II, and WS. Finally, the 2201L does have a keyboard.

APPLICATION BULLETINS

The following are new Application Bulletins released:

Number	Subject
23	Graph Utility System

PRODUCT BULLETINS

The following are new Product Bulletins released:

Number	Subject
147	*NOT USED*
148	WCS/15
149	2281 Printer (supersedes #140)
150	2271 Printer (supersedes #139)
151	2209A Nine-track Magnetic Tape Drive



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MANUALS

The following is a list of new and reprinted manuals:

New Manuals

2200 RIADS (Diskette) Operator's Manual (700-4231)
2200 Integrated Support System Release 3 User Manual (700-4254)
2263 Line Printer User Manual (700-4251)
Portable Computing System II Introduction (700-4255)
2261W Line Printer User Manual (700-4271)

Reprints

In future notifications of reprints, we will attempt to indicate the level of significance of the reprint so that it can be judged as to the immediate need of the new manual.

GBS-Mod I (Disk) System Manual (700-4102A)
GBS-Mod I (Diskette) System Manual (700-4074A)
GBS-Mod II (Diskette) System Manual (700-4174A)
2272 Digital Drum Plotter Data Sheet (700-3826C)
2207A I/O Interface Controller Data Sheet (700-3155C)
2200 ANOVA User's Manual (Diskette) (700-3867A)
2260B Fixed/Removable Disk Drive Data Sheet (700-3483D)
2218 Dual Tape Cassette Drive Data Sheet (700-3254C)
2221W Line Printer Data Sheet (700-3620D)
2200 Text Editing Utilities User Manual (700-4043A)
2202 Plotting Output Writer Data Sheet (700-3223G)
PCS-II Data Sheet (700-4153A)
WCS/10 Introduction & Installation Guide (700-3853A)
2200 BASIC Language Reference Manual (700-3038I)
2232B Digital Flatbed Plotter User Manual (700-3371B)
2227B/Option 62 Buffered Asynchronous Communications Controller User Manual (700-4114A)
Introducing LIFELINE Manual (700-4155A)
2214A Mark Sense Card Reader Data Sheet (700-3252B)
2200 General I/O Instruction Set Reference Manual (700-3514F)
2214A Mark Sense Card Reader Reference Manual (700-3247A)
GBS-Mods I, II, III (Disk) Technical Guide (700-4101A)
2200 Matrix Statements Manual (700-3332D)
Introducing GBS (700-4186A)
2200VP Disk Reference Manual (700-4081C)

ERRATA SHEETS

Disk File Backup Addendum (700-4195) - Addendum to 2200 Disk Reference Manual (700-3159G) and 2200VP Disk Reference Manual (700-4081B)

DID YOU KNOW?

- THAT the latest VP System Initialization (BASIC-2) diskette is Revision 1.6 (6/1/77)
- THAT ISS 3.2 (#195-0032-3) is scheduled for release by the end of September 1977. ISS 3.2 is capable of total use by a 2200VP. It also contains KFAM-5, which has been developed for multiplexed CPU's. All the utilities have been designed to also work in a multiplexed environment.
- THAT ISS 2.1 is still being supported. The utilities as well as KFAM-3 are designed to operate in a single system use base.
- THAT ISS 3.2 (#195-0032-8) Minidiskette is scheduled for release by the end of September 1977.
- THAT Data Entry-2 (#195-2051-3) is available. This utility is a stand-alone or WCS-25 configuration for the capture, storage, editing and validation of data or input using 2236 dumb terminals.
- THAT certain disk errors can be resolved by incorporating the "S" factor. For such commands as DBACKSPACE and DSKIP, you should designate the number of sectors followed by the letter "S."

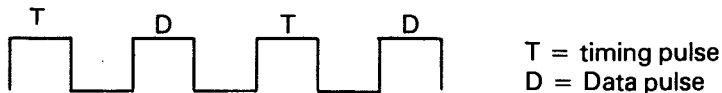
100 DBACKSPACE #1, 1S

This command immediately updates the current sector parameter of the device table and enables the next disk command to access the proper sector. If the "S" factor is not used, then the system has to determine the number of sectors that the record occupies, update the device table, etc. The "S" factor will be faster (Reference Disk Manual 700-3159F, page 14).

WANG SLANG

ASYNCHRONOUS

A system of data transmission where one timing pulse is sent with each bit of information transmitted, for example:



BIT PARALLEL (8-Bit)

Indicates that eight wires are needed to transmit the information, one wire for each bit. All eight bits are transmitted simultaneously.

DOCUMENTATION

The process of organization information about a program into a useful form that reflects the current status of the program, as well as such things as flow charts, disk record layouts, variable tables and description, sample report formats, etc.

FLOATING POINT NUMBER

A number in which the location of the decimal point will vary with the location of the expressed power of ten.

REAL TIME

The processing of data crucial to an activity while the activity is being performed in such a manner that the results of the processing become available and can be used to alter the functioning of the activity.

SYNCHRONOUS

A means of transmitting data pulses where only a beginning and ending timing pulse are used to enclose the data pulses. The system has less redundant timing pulses than asynchronous but with more possibility of loss of data pulses, as only one "timing" pulse is sent at the start and one at the end of each stream of data.

PROFESSOR L. O. BYTE'S CORNER



Professor Byte has received a few questions. All questions received will be answered and published in the Newsletter following receipt of the question.

- Q. When will TAM Utilities be available?
- A. TAM Utilities (#195-0035-3) are available. They will be automatically distributed to the field by the end of September. The system overhead is less than 3K, and the utility provides message logging, terminal selection, polling, message transmission, keyboard control, as well as cursor manipulation.
- Q. How much faster is the "VP" than the "T" CPU?
- A. That's a good question. In general, one can safely state that the VP is 6-8 times faster overall. To help compare the two CPU's, here are some timings against specific functions.

Function	2200VP	2200T
X + Y	.11 ms	.8 ms
X * Y	.38 ms	3.9 ms
X / Y	.76 ms	7.4 ms
X ↑ Y	6.2 ms	45.4 ms
LOG	3.2 ms	23.2 ms
SQR	1.7 ms	46.4 ms
TAN	7.7 ms	78.5 ms
RND	.27 ms	24.0 ms

- Q. I have a customer with a PCS-II. How do I get my software on a minidiskette?
- A. Very carefully! We realize there has been a problem in this transfer requirement. We have accelerated deliveries of the 2210 to many district offices to assist in resolving this problem. Until they receive their units, you can forward the diskette to me for transfer. The following rules must be adhered to.

Send:

1. Original diskette (2270 Shugart) be catalogued LS = 1, END = 349. All programs and data files within these parameters.

2. Minidiskette.

3. We would appreciate a return shipping label to be included.

. A copy program specially designed will copy/verify all text from the 2270 diskette to the minidiskette.

. Remember - it is a one-for-one ratio. For each diskette, there should be a minidiskette.

. All disks will be processed within a 24-hour period.

BITS & BYTES

VP CPU

The VP System Initialization is now available on minidiskette. This will satisfy the situation whereby a customer uses a 2210 in lieu of 2226/2270.

Speaking of the VP, the following is a list of text atoms associated with the VP (BASIC-2).

80 LIST	A0 PRINT	C0 FN	E0 LS =
81 CLEAR	A1 LOAD	C1 ABS(	E1 ALL
82 RUN	A2 REM	C2 SQR(	E2 PACK
83 RENUMBER	A3 RESTORE	C3 COS(	E3 CLOSE
84 CONTINUE	A4 PLOT	C4 EXP(	E4 INIT
85 SAVE	A5 SELECT	C5 INT(	E5 HEX
86 LIMITS	A6 COM	C6 LOG(	E6 UNPACK
87 COPY	A7 PRINTUSING	C7 SIN(	E7 BOOL
88 KEYIN	A8 MAT	C8 SGN(	E8 ADD
89 DSKIP	A9 REWIND	C9 RND(	E9 ROTATE
8A AND	AA SKIP	CA TAN(	EA \$ [stmt]
8B OR	AB BACKSPACE	CB ARC	EB ERROR
8C XOR	AC SCRATCH	CC #PI	EC ERR
8D TEMP	AD MOVE	DC TAB(	ED DAC
8E DISK	AE CONVERT	CE DEFFN	EE DSC
8F TAPE	AF [SELECT] PLOT	CF [ARC] TAN(	EF SUB
90 TRACE	B0 STEP	D0 [ARC] SIN(	F0 LINPUT
91 LET	B1 THEN	D1 [ARC] COS(	F1 VER(
92 FIX(	B2 TO	D2 HEX(	F2 ELSE
93 DIM	B3 BEG	D3 STR(	F3 SPACE
94 ON	B4 OPEN	D4 ATN(	F4 ROUND
95 STOP	B5 [SELECT] CI	D5 LEN(	F5 AT(
96 END	B6 [SELECT] R	D6 RE	F6 HEXOF(
97 DATA	B7 [SELECT] D	D7 [SELECT] #	F7 MAX(
98 READ	B8 [SELECT] CO	D8 % [image]	F8 MIN(
99 INPUT	B9 LGT(	D9 [SELECT] P	F9 MOD(
9A GOSUB	BA OFF	DA BT	FA reserved
9B RETURN	BB DBACKSPACE	DB [SELECT] G	FB reserved
9C GOTO	BC VERIFY	DC VAL(	FC reserved
9D NEXT	BD DA	DD NUM(	FD reserved
9E FOR	BE BA	DE BIN(	FE reserved
9F IF	BF DC	DF POS(	FF packed-line-number

TELECOMMUNICATIONS

As input is received of problems in our telecommunications packages, they are reviewed and, if necessary, new releases are issued. The list below contains the latest releases for the applicable Sysgen packages.

1. TTY Release 2.0
2. 2780 Release 3.5
3. 3780 Release 3.5
4. 3741 Release 3.5

Wang also has emulator packages for the following:

IBM 2741
TC 500 Burroughs
IBM Multi-learning Hasp Workstation
IBM 3270 (November 1977)

GENERAL DISK INFORMATION

The disk platter compatibility chart reflects the disk cartridge interchangeability between the various disk drives offered by Wang Laboratories. Notice that all 2260Bs are capable of reading all 2230 platters (using a special disk address explained after the chart) and that there is complete compatibility between 2260 and 2260B platters.

DISK PLATTER COMPATIBILITY CHART

A PLATTER CREATED ON A:	CAN BE READ BY A:						
	2230-1	2230-2	2230-3	2260	2260B	2260B1/2	2260B1/4
2230-1	X	X	X	X**	X**	X**	X**
2230-2	X*	X	X	X**	X**	X**	X**
2230-3	X*	X*	X	X**	X**	X**	X**
2260				X	X	X*	X*
2260B				X	X	X*	X*
2260B1/2				X	X	X	X*
2260B1/4				X	X	X	X

*The platter can be read up to the maximum address available on this capacity drive.

**In order to access a Model 2230 disk cartridge in a Model 2260B Disk Drive, a special disk device address of 350 must be used. The special address causes the Model 2260B to initiate a routine which simulates the Model 2230 track spacing and platter format for reading the Removable Platter. The user is then able to read information from the cartridge in Model 2230 format with standard disk statements, while the cartridge is loaded in a Model 2260B drive. For example, the statement LIST DC R/350 generates a listing of the Catalog Index from a Model 2230 cartridge loaded in a Model 2260B drive. Similarly, the special address can be assigned to a file number and referenced indirectly in statements which do not permit the use of a device address. For example, the statements

```
SELECT #3 350  
DATALOAD DC OPEN R #3, "TEST"
```

could be used to reopen the file TEST on a Model 2230 cartridge in a Model 2260B Disk Drive.

If the Model 2260B is the second, or subsequent, disk drive in a system, the special address must be calculated by adding a HEX(40) to the disk device address. For example, if the address of the Model 2260B is 320, the special address is 360; if the normal address is 330, the special address is 370, etc. Note that the special address should be not used to access the Fixed Platter of the Model 2260B, nor should it be used to access a Removable Platter formatted in the Model 2260B itself.

SOFTWARE AVAILABLE

We are trying to place all of the Industry Marketing packages into the hands of local vendors in each district. This is necessary because, as the number of sales increases, we need more people trained to install systems.

You may be a new Wang vendor, or you may be a vendor who has one system for one market but needs another system for a different market. Here is your chance to get a new money-making tool at no charge. Each time you install one, you receive the following installation fee:

SYSTEM	INSTALLATION TIME(DAYS)	INSTALLATION FEE	INDUSTRY MARKETING PERSON TO CONTACT
Wang/CASH	5	\$1,000	Don Marshall
\$PARK - Inv. Control	5	1,500	Steve Spicer
Acct. Receivable	3	1,000	
Mortgage Management	5	1,000	Dick Nelles
Time/Check	2	500	Don Marshall
Patient Billing	2	500	Stan Ansin
LIFELINE	5	1,500	Tom Camp
Auto/Mate III	10	4,000	Bruce Lustig
Parts Inv. Control	5	1,000	
Manufacturing Management			Bruce Campbell
Bill of Materials	2.5	500	
Accounting	10	2,000	

You also receive 50% of the software maintenance fee we collect for providing local customer support.

In addition, GBS is being distributed to vendors as it is being completed. Mods 1 and 2 have been sent out so far. Mod 3 and its documentation is expected to be complete in another couple of months. The arrangement with GBS is different. You receive the software from Wang. You quote each usage of the software at a price which you determine, considering modification, etc. Then, after each installation, you pay \$500 per module used to Wang Laboratories. Naturally, you will include the \$500 in your price to the customer. For further information on GBS, you can call Lou Brock.

All prices stated pertain to USA domestic prices only. For prices in your area, contact your specific Wang office.

Good Luck and good selling. Industry Marketing will support you in every way we can.

GENERAL BUSINESS SYSTEM (GBS)

In maintaining our ongoing support of GBS, this group of questions and their answers are published for your information. If you have specific questions not covered, they should be directed to Bob Soucy, Lowell, MA.

- Q. Does GBS use a standard printer tape?
- A. Yes. However, it uses the standard tape without the end-of-document signal. If you use the standard tape with end-of-document, some reports may prematurely do a top-of-form skip. This will result in blank pages in reports and/or pages with no report or column headings.
- Q. On what printer were the GBS timings performed?
- A. All the timings were done on a 2221W printer. If you have a 2231W-2, for which there are program changes available, your throughput will be significantly slower. There are no timings available for this configuration.

- Q. Are there any problems in running RPL (which is used in GBS) on a V.P.?
- A. Yes. The RPL system software which is issued with GBS will not run without modification on a V.P. processor. The necessary changes are detailed in the July Systems Newsletter, No. 3. The RPL object programs in GBS will run on a V.P. with no problems. You will only need to modify the RPL system software if you need to recompile an RPL on the V.P. processor.
- Q. How do I modify the RPL programs in GBS?
- A. Any changes to the RPL "object" programs in GBS should be effected by running the normal RPL system software and referring to the RPL manual. Changes are made to the RPL "source" program and a new set of "object" programs are compiled. Please note that when GBS software is distributed, it does not have "write" tabs on the diskettes. A "write" tab must be placed on the RPL system diskette and the diskette you are modifying, since both diskettes are written to.
- Furthermore, when an RPL "object" program is compiled, statements 6900 and 6910 contain logic to merely stop the program. Since GBS is an integrated system, all the "object" programs (those programs ending with an "R") have been modified to clear common variables and return to an appropriate menu. When you recompile an RPL program, refer to any other GBS object program ending in "R" for the logic to replace statements 6900 and 6910.
- Q. Is it possible to delete a customer who has open orders on file?
- A. Yes, it is possible. Furthermore, an error condition will occur if those open orders are then processed after the customer has been deleted. Users should be made aware that they should manually check their open order file before deleting "inactive" customers.
- Q. When running the hard-disk version of GBS, there are several places that request a particular diskette be mounted on the diskette drive to receive output. Where in the system setup or initialization procedure can I find these files?
- A. You can't. These files are audit report-type files and transaction-type files. They are meant to be used once and then reused. The GBS system subroutine subfile will automatically take care of cataloging these files for you. When such a file is first requested, mount a formatted and scratched diskette (GBS setup asks that you establish several of these diskettes before beginning operations) or mount a previously used audit report file or transaction diskette, which is no longer of use to you. Before depressing the "return" key as the prompt indicates, enter the character "X" then depress "return." This will cause the program to ignore whatever was previously on that diskette and establish the currently appropriate file. This information is contained in the "Operator's Manual".
- Q. Where can I find timings for GBS MOD III?
- A. In the updated "Introducing GBS" manual. If you have an earlier release of this manual, it only contains timings for MODS 1 & 2. The later release covers all three mods. See your district analyst to order a new manual if you wish to have the MOD 3 timings as well. The part number for the revised document is 700-4186A.
- Q. Can the GBS system be run using source programs?
- A. No, it cannot. Most especially, you must use the compressed and renumbered versions of the GBS subroutines. If you do not use these, program statement numbers may overlap and cause various problems when trying to load a program from the menu. Refer to the Tech Guide for line numbering explanation.

WANG CLASSIFIED AD SECTION

10 - Software

11 - Equipment

12 - Miscellaneous

Starting with Newsletter #5, this section will be available to software vendors to advertise their Wang software packages, Wang equipment, and miscellaneous items.

Ads may not be more than 110 words in length (excluding company name). Be sure to include the name and address for contact.

There is no charge for this service.

Submit all ad copy to the attention of:

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