WANG SYSTEMS NEWSLETTER

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WANG

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ISSUE NUMBER 16
DEC

SYSTEMS NEWSLETTER
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DECEMBER/JANUARY 1980

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Systems Newsletter

LETTERS

Dear Readers:

Recently, I received a letter from Dr. Fred S. Hendricks of Texas A & M University. Dr. Hendricks is having problems in locating an interface unit to couple a peripheral to his Wang Model 700 Programmable Electronic Calculator.

The unit he needs is called either a Micro Interface or Microface Model 605 or 705. Dr. Hendricks would appreciate any help you could give him in locating the coupler.

His address is: Dr. Fred S. Hendricks, P.H.D.
Department of Wildlife and Fisheries Sciences
Texas A & M University
College Station, Texas 77843
(713) 845-6751

Editor

Dear Readers:

From reading your letters, I've come to the conclusion that you want the timeliness of the Newsletter improved.

Your request has been granted! As of this issue, a *Systems Newsletter* will be published every six (6) weeks. If an issue is late by more than one week, I'll take my lashes — fifty with a wet noodle!

Editor

PEOPLE HIGHLIGHTS

2200 SERIES PRODUCT MANAGER

The 2200 Series Market Planning and Development Group is pleased to announce that John Thibault has been appointed to the position of 2200 Series Product Manager. As 2200 Product Manager, John will be responsible for the planning, development, and product management of the 2200 series product line.

Prior to coming to Wang Laboratories, John was employed by Litton Industries, as manager of minicomputers. At Litton, he was responsible for a network of Wang Series 2200 computers linking the various check and forms printing manufacturing plants Litton has scattered across the United States. Before becoming involved with the Wang network, John was staff senior analyst, with responsibility for a department of programmers and analysts supporting Litton's 370/168. John has earned a BS degree in Computer Science.

John joined Wang Laboratories in January as project manager in the Applications Development and Support group, with responsibilities for 2200 Series Software Development. His field background and 2200 Series experience should prove a great asset in future 2200 products.

NEWS TO USE

CONSULTANT SOFTWARE DIRECTORY

The first release of the *Consultant Software Directory* is now available. It is the culmination of many hours of research. Its purpose is to provide both field and home office personnel with a central source of qualified vendor software information.

In the past, various documents have presented some of this information. One such past document was the *Wang Software House Directory File*. This document is now obsolete and should be discarded. (This includes all its updates.) Information of significance has been extracted and included in the *Consultant Software Directory*.

Distribution of the Consultant Software Directory will be one to each field sales office. The Directory should become the responsibility of the field analyst in each office. The Directory is an internal document and, as such, will not be distributed outside of the Wang organization. Software consultants interested in information contained in the *Consultant Software Directory* should contact their local Wang office. This will allow greater control and encourage analyst/vendor communication.

The future of the *Consultant Software Directory* looks bright, with regular revision and additions scheduled. If you would like information concerning entrance requirements for the *Consultant Software Directory*, or have a potential candidate, please call Peter Donlan (extension 3310) at the home office.

DEMO/DEVELOPMENT EQUIPMENT POLICY FOR 1980

Effective January 15, 1980, only Authorized Independent Software Consultants or System House Software Consultants — Class II Contracts will be eligible to opt for either special rental or purchase systems.

Under this policy, a software consultant has the option of either renting or purchasing one system. Additional systems must be warranted and have the approval of: the Area Vice President, the Director of System Support, and the North American Controller.

The new rental/purchase terms are:

RENTAL (Increased by 1%)

Rates: 3% of list per month (within 50-mile radius of a service office).

3.5% of list per month (50-75 mile radius).

4% of list per month (beyond a 75-mile radius of the service office)

Term: Six-month minimum/twelve-month maximum.

Equity: 90% of the basic monthly rentals paid on such unit if the order is received in the home office within ninety days of the initial rental start date.

If the order is received in the home office between the ninety-first day and one year from the initial rental start date, Wang will credit 50% of the basic monthly rentals paid on such units.

Rental equity will be in addition to the 40% discount available for purchased units. List price for conversion calculations will be based on the price in effect when the rental order was placed.

PURCHASED SYSTEMS

Discount: 40% off list

(There is no change in this purchase policy from the previous year.)

All rented or purchased demo systems will be booked directly to home office, and sales are excluded from commission payments.

USE OF THE WANG LOGO

Authorized vendors are welcome to display the Wang logo on their publications as long as these guidelines are adhered to:

1. The vendor must be an authorized Wang representative.
2. The vendor's logo is featured in large type.
3. The Wang logo is featured in smaller type.
4. The words "Authorized Representative of Wang" must be displayed.

Computers and Word Processors Tel. 000-0000
WANG Authorized Vendor

JOHN DOE
Representative

A American
A Association
A of
Aardvarks

GBS/VS SEMINARS

GBS/VS Seminars are being conducted upon the request of software consultants. If you are interested in GBS/VS and want a seminar in your area, contact the local Wang branch and/or district office.

The GBS/VS Seminar agenda is as follows:

GBS/VS
Vendor Training Seminar

Day One	
9:00-10:00	Corporate and VS-100 Update
10:00-12:00	MCBA Software Applications Review Order Entry/Inventory Control Accounts Receivable Accounts Payable Payroll General Ledger
12:00-1:00	Lunch
1:00-2:30	MCBA Demonstration All Applications (Hands-On)
2:30-3:30	VS Utilities Demonstration
3:30-4:00	MCBA System Documentation Review
4:00-5:00	MCBA Coding Techniques
Day Two	
9:00-10:00	Consultant Relations
10:00-12:00	Practical Modification Exercises

12:00-1:00	Lunch
1:00-3:00	Practical Modification Exercises
3:00-4:00	Business Plan
4:00-End	Questions and Answers, Wrap-up

GBS/VS LICENSE PRICES

Software consultants purchase licenses for one or more applications on either a single-use basis or a multiple-use basis.

A credit of 50% of the original license purchase cost may be applied to the conversion from a single-to a multiple-use license for the same application.

Costs of licenses to software consultants, effective January 1, 1980, are as follows:

Number of Applications	SINGLE-USE	20-Use to Multiple-Use	50-Use to Multiple-Use
1	1,500	3,000	4,500
2	3,000	6,000	9,000
3	4,500	9,000	13,500
4	6,000	12,000	18,000
5	7,500	15,000	22,500

In excess of 50 installations, a royalty of $300 per use for each application will be paid to MCBA.

SOFTWARE NEW OR IMPROVED

MODIFICATIONS INCORPORATED IN ISS 5.1

The following changes have been incorporated in ISS 5.1 (a maintenance release of ISS 5.0).

1. KFAM SUBROUTINES

   A significant fault of the queue has been corrected (KFAM0107, KFAM0307). In some instances, a second station was allowed to begin modifying a key file concurrently with an initial station. The intention of the queue is to maintain file integrity by restricting file access to one KFAM call, one station at a time (interactive mode only).

   The queue has been modified (KFAM0107, KFAM0307) so that it now refers to user files rather than key files. This is important only where multiple key files exist for a given user file. It ensures that only one station will be modifying the user file at a time, eliminating the possibility of access by separate key files simultaneously (interactive mode only).

   The upper bounds for both the user and key files are automatically updated in the KDR by KFAM OPEN (DEFFN '230 — KFAM0107, KFAM0207, KFAM0307, KFAM230S). This is based on the actual limits of the files when OPEN is executed, and takes into account record lengths for multiple sector records. This modification eliminates the required use of the KFAM utility REALLOCATE KFAM FILE SPACE following the change of key and user file sizes.

   A minor modification has been made in RE-OPEN (DEFFN '213 — KFAM0107, KFAM0307) to hog the system while completion codes are updated. This was previously omitted, allowing the remote possibility of two stations updating the completion codes concurrently when RE-OPEN was executed, giving spurious results.

2. KFAM UTILITIES

   INITIALIZE:

   The option for duplicate and standard key types has been included with the default values. As before, it is only significant when checks are made on the key lengths. (KFAM107U, KFAM117U)

   The option to write or not write recovery information has been included with the default values. Typically, the recovery information is written when initializing the primary key and not written when initializing any secondary key files. (KFAM107U, KFAM117U)

   The order of displayed default parameters has been adjusted to include these two additional items. They have also been included in the hardcopy printout of the parameters. (KFAM107U, KFAM117U)

   Modification has been made to ensure that all space in the key file is made available. Previously, the number of records requested was always used to determine the upper bound of the key file. Thus, when reinitializing an existing key file, it was possible to have an erroneous

upper bound established. (KFAM107U, KFAM117U)

BUILD KEY FILE:

The options to write and not use, or use and not write, recovery information has been included in this utility to support building multiple key files. Typically, WRITE/DON'T USE recovery information would be specified when building a primary key file, and USE/DON'T WRITE would be specified when building a secondary key file. Only the FINDNEW SECTORS portion of the recovery information is used. (KFAM207U, KFAM217U)

REORGANIZE/REBUILD SUBSYSTEM:

Modification has been made to correctly reactivate a scratched output key file if such a file has been specified. (KFAM3507)

Modification has been made so that the variable C1 is no longer erroneously left as a common variable at the conclusion of the subsystem execution. (KFAM3507)

PRINT KEY FILE:

Modification has been made to present a full screen of KIEs where possible. (KFAM617U)

RESET ACCESS TABLES:

This utility has been modified to support the addition of variable QO$ to the queue. (KFAM717U)

3. ISS SUBROUTINES

FREE UNUSED SECTORS (DEFFN '227):

Modification has been made to this routine so the high order bit for "next available sector in cataloged area" is no longer removed from the catalog index. This was done previously to support disk platters formatted on the 2200T. Up to the 2280 (Phoenix) disk drives, the high order bit was not used by the VP and MVP. Now it is necessary to leave it intact for addresses up to 52,609 requiring the full eight bits. (ISS.227S)

DATE ROUTINES — CONVERT GREGORIAN TO JULIAN (DEFFN '221):

More efficient code has been incorporated in this routine (ISS.220S).

4. ISS UTILITIES

COPY VERIFY:

Modification has been made to allow up to 65,534 extra sectors to be specified. Previously, only 255 extra sectors were allowed. (ISS.000U, ISS.001U)

Modification has been made so error messages encountered during this utility go to the specified output device. Previously all error messages came to the CRT. (ISS.000U, ISS.001U)

Modification has been made so that when indirect mode is being used and the reference file specified includes a reference to itself, the output reference file will not be copied with its MUX trailer left open by the copying station. (ISS.001U)

CREATE REFERENCE FILE:

DEFFN '15 has been disabled until appropriate in the input module, thus preventing unintended screen display. (ISS.010U)

CROSS-REFERENCE:

Modification has been made so form feeds are no longer erroneously issued when "REM% " is encountered during the building of the cross-reference table. (ISS.022U)

LIST:

Modification has been made to correctly use REM% in giving expanded print and form feeds. Previously, an extraneous underline appeared. Also, it is no longer necessary to leave a blank space following REM% if " " is not used. (ISS.024U)

Modification has been made to process the statement "LIST" if found in the text. Previously, the program crashed on this statement. (ISS.024U)

Modification has been made to begin new lines as appropriate for text in trailing REMs. Previously, the entire trailing REM was printed on one line. (ISS.024U)

CROSS-REFERENCE:

Modification has been made to give proper form feeds and heading for marked subroutine cross-reference listings. Previously, the line count logic was faulty. (ISS.022U)

DECOMPRESSION:

Modification has ben made to process the statement "LIST" if found in the text. Previously the program crashed on this statement. (ISS.044U)

ALL UTILITY INPUT MODULES:

Modification has been made to make the use of the PART mode easier. Subsequent to a return to "enter parameters" ('15), old entries are retained and correctly checked, including output name and extra sectors where specified.

It is now possible to specify up to sixteen parameters in the input modules. Previously, only fourteen were allowed. (ISS.050S)

EXECUTION MODULES:

The statement "SELECT PRINT #4 (S$(1))" is no longer executed when the printer address (S$(1)) is equal to " ". Previously a crash would occur. (ISS.001U, ISS.031U, ISS.041U, ISS051U, ISS.061U, ISS.071U, ISS.081U, KFAM117U, KFAM617U)

5. SORT4

SORT400C:

Modification has been made to the hog device routine (DEFFN'215) to use $OPEN and $CLOSE instead of a $G10 statement. The $G10 statement did not work on the MVP or the Phoenix disk drive.

SORT490A:

Modification has been made to this SORT4 exit module. The first executable line selects print to the CRT screen. Thus it is possible now to run SORT4 in background by selecting print "000" (output dump) and executing "$RELEASE TERMINAL" in the start-up module.

6. LIMITATIONS:

Underlined characters in literals, REMs, and image statements are not supported in some ISS Utility programs (LIST, CROSS-REFERENCE, COMPRESSION, DEPRESSION, PROGRAM COMPARE).

VS TO VS BATCH COMMUNICATIONS

VSCOPY is a communications-based program that handles file transfer between VS computer systems. This program supports point-to-point, half-duplex communications over leased or switched (dial-up) networks. Although VSCOPY's Wang-developed protocol is similar to that of TCCOPY's 2780 and 3780 emulations (i.e., a bisynchronous-type protocol supporting such functions as cyclic redundancy checking, automatic extended retransmission, and wait-before-transmit positive acknowledgement), there are certain features which differ significantly from those of TCCOPY.

Since all VS processors use ASCII as their native code set, the VSCOPY program (unlike TCCOPY) has no need to translate from ASCII to EBCDIC when transmitting or receiving files. More important, VSCOPY (unlike TCCOPY) transmits and receives files without changing the characteristics and structure of the original files. A program file transmitted from one VS system to another becomes a "copy" which is executable in the receiving system. A received print file may be printed; an indexed file retains its index information. Moreover, the name of the original file normally becomes the name of the received file although the file is stored in the library specified by the receiving operator.

To transfer files between two VS systems, both systems must be running VSCOPY. In each system, VSCOPY can be operated from the Command Processor Menu or user-written procedure (PROC). Also, a subprogram may be run while executing VSCOPY.

Via VSCOPY, messages may be sent by the operator from one system to the operator running VSCOPY in another system. The message capability provides one method of obtaining desired files. In this method, the operator who receives the message initiates the actual file transmission to the other system. Alternatively, by providing a password (if required), System 1 may request a file from System 2, and System 2 can transmit the file to System 1 without operator intervention (if the System 2 operator has access rights to the requested file).

BACKUP UTILITY VERSION 3.05.00

Recently a letter regarding a possible problem when using the tape option of backup was mailed to all Wang VS customers.

Due to the pertinence of this document's contents, a rendition is printed below.

Dear VS Software Consultants:

Wang Laboratories wishes to inform you of a possible serious problem with tape files that have been created with the Backup Utility Version 3.05.00 (or prior versions). This problem can affect any Multiple Volume Tape Backup.

The problem will only occur when using the tape option of Backup and will only affect the second and subsequent volumes of a multi-reel backup. Those backups that are defective will contain files that have blocks that have been partially or fully overlaid with incorrect data.

Therefore, all multivolume tape backups performed with the faulty version of the backup utility should be considered INVALID. A new backup should be performed as soon as possible with the corrected version of Backup (Version 3.5.1) to ensure that you have a valid backup.

If the need exists to restore from tapes created by the faulty version of Backup, DO NOT restore to your original disk and DO NOT destroy the data on the original disk. This may be the only valid copy of the data that exists. Restore to a scratch disk and verify that each file on that disk is valid.

If the new Backup (3.5.1) has not been installed, contact your local Customer Engineer.

If you have any questions or problems obtaining the correct version of Backup, please contact VS SOFTWARE SUPPORT GROUP.

Telephone: (800) 225-0970 (outside of Massachusetts)
(617) 459-5000, Ext. 2118 (in Massachusetts and International)

Frederick A. Wang, Vice President
Market Planning and Development

GBS/MVP 2.0 AVAILABILITY

I. INTRODUCTION

GBS/MVP Release 2, Wang's latest General Business System accounting core software, consists of the following application software systems:

- Invoicing/Accounts Receivable System
- Order Entry/Inventory Control System
- Accounts Payable/General Ledger System
- Payroll System
- Bill of Materials System

Each of these systems may be used on a stand-alone basis with the exception of the Order Entry/Inventory Control System, which requires that the Invoicing/Accounts Receivable System be installed along with it.

Once fully released, this software will be Wang's standard version of GBS/MVP.

This offering is an outgrowth of the first GBS/MVP System (Release 1 Version), which was made available in November, 1978.

The Release 1 software is composed of a series of application modules as follows:

Invoicing/Accounts Receivable	Module I
Order Entry/Inventory Control	Module II
Accounts Payable, General Ledger	Module III
Payroll	Module IV

The Release 2 version of GBS/MVP has a number of enhancements over the former system that include:

1. VP-compatibility — all systems except Bill of Materials.
2. Extended-memory capabilities allowing for up to 256K.
3. Increased number of terminals from three in 64K to nine in 192K.
4. Totally revised programs:
   a. Menus
   b. Maintenance program
   c. Data entry

   Result: The addition of fields to records is a simple two-step procedure.
5. Initialization procedures are easier to perform, particularly when additional systems are added.
6. Multiple independent companies on the same system (up to 200). One advantage of this is that it makes the system more service bureau sellable.
7. Use of Function Key 4 to end transaction processing instead of typing END.
8. Credit limit displayed in Order Entry screen; enhanced credit limit checking.
9. Inventory records modified for MVP Inventory Management System and Bill of Materials inclusion.
10. Up to 380 possible Ship-To addresses for each customer. Can also access Ship-To address by Ship-To number without scanning Ship-To file.
11. System fine-tuned for improved performance.

II. AVAILABILITY

Following is the scheduled availability of GBS/MVP:

Invoicing/Accounts Receivable System — January 25

Order Entry/Inventory Control System* — January 25
Payroll System — February 1, 1980
Accounts Payable/General Ledger System — March 1, 1980
Bill of Materials — April 1, 1980

For increased inventory sophistication there is an MVP Inventory Management System. This system is currently available in a T/VP version, and is being updated for the MVP. It can be used on a stand-alone basis or tied in to GBS/MVP, and is scheduled to be available March 1, 1980 at a cost of $500.

GBS/MVP Release 2 software is available to Wang software consultants through a multiuse license with a fee of $500 per system ordered. The entire set of five systems will, therefore, cost $2500.

A Wang software consultant who presently is a GBS/MVP Release 1 licensee can obtain Release 2 software for those Release 1 systems previously purchased and paid for at no cost other than a handling and media charge of $50 system ordered.

To order the Release 2 software, Wang software consultants must submit a Uniform License Agreement, including Appendix A, to Software Distribution. These forms are available through Wang District Offices.

One set of manuals is provided with the software. This includes a Systems Manual, User Manual, Technical Guide, and GBS Introduction. Sample printer forms and printer format tapes are also included. Any additional manuals can be purchased for $25 each.

Errata information and manual updates will automatically be provided software consultants as they become available.

* Requires that you purchase Invoicing/Accounts Receivable System also.

TECHNICAL NOTES

TWELVE-CHARACTER-PER-INCH DISCREPANCY

Many complaints have been received concerning the failure of 12-pitch (characters per inch) 2261V Matrix Printers to print exactly 12 characters per inch. This problem is easily noticed when the 2261V is outputting on a form that is designed for a 12-pitch printing. In many cases, this situation has prompted Customer Engineers to change the timing fence, hoping that this would resolve the problem. This discrepancy is, in fact, not a problem. The 2261V is described and labeled as being 12-pitch, but is actually designed to print 11.76 characters per inch. This fact is documented in Model 2261W Line Printer Data Sheet (WL #700-4144A), as well as Model 77 Quad Head Matrix Printer Maintenance Manual (CED #03-0061).

If a customer brings this problem to the attention of a Customer Engineer, the C.E. should point out the 11.76-characters-per-inch description in the 2261W Data Sheet.

MVP DISK USE WITH TIME CRITICAL PROGRAMS

The MVP schedules the use of a disk in much the same manner as several 2200 CPUs: sharing a disk with disk multiplexers. A partition maintains exclusive control of a disk for the duration of a disk statement. This can be a considerable length of time in the case of LOAD of a good-size program, or SAVE with read after write. The situation is identical in the case where a program invokes disk hog mode ($OPEN) for a long time. The entire disk unit (not just the addressed platter) is hogged. Well-written, time-dependent programs (such as TC) that utilize the disk will consider disk use by other partitions.

Some solutions to the above situation are:

1. Make sure that programs can withstand long periods of being denied disk use by being able to stop the stream of input data until the disk becomes available.

2. Provide larger in-memory buffers so that input data may be temporarily stored while waiting for the disk. Use the form of $OPEN with the line number branch to make sure the disk is available before issuing a disk statement to prevent the program from being suspended waiting for the disk I/O. (If $OPEN succeeds, the disk is hogged; if it fails, the branch is taken.)

3. Use a disk drive connected to a separate disk controller for output produced by timing critical programs. If an I/O operation is pending to disk /310, or if /310 is hogged, other partitions may still use disk /310.

ARE CRT'S HAZARDOUS TO YOUR HEALTH?

The potential hazards of visual-display-based word processors has been a controversial subject for some time now.

Recently, the International Atomic Energy Agency published a report, "Health Hazards Associated with the Use of Visual

Display Units," which settles the disputes over the safety of CRT-based word processors.

In this report, CRTs are exonerated from causing any potential health hazards. Studies showed that X-ray emissions from Visual Display Units (VDUs) are not detectable by the most sensitive instruments available. At any rate, the amount of X-ray emission is so small that the resulting annual radiation dose to the operator does not, even under the most pessimistic assumptions, exceed but a fraction of the percent of the annual dose due to natural background radiation. Furthermore, the emission rates were, to the extent that they were at all detectable, two or three orders of magnitude below those which are permissible and may therefore be considered to be without detrimental effects on the health of VDU operators.

Discomforts will not, and postural discomfort will only after very extended periods of time, lead to irreparable damage and, hence, constitute a health hazard. It is, therefore, not only in the interest of the operators, but also that of their employers to reduce visual and postural discomfort to the minimum that is practically and economically achievable.

It is recommended that VDU operators be checked for special ocular deficiencies that may contribute to such things as eyestrain, headaches, etc. There is nothing inherent in the VDU to cause such symptoms as eyestrain, headaches, etc.

This report should end all controversy with regard to potential health hazards from our CRT-based word processor. It was written by an impartial investigator of the highest academic standing. Wang is pleased to have this final doubt removed concerning one of its most vital products.

NEW PRODUCTS

SILENCE IS GOLDEN

Wang Laboratories has developed a sound abatement material which significantly reduces the noise level generated by the 5541W, 2281W, and 6581W Daisy Printers.

According to sound tests conducted by Wang in conjunction with Soundcoat, Inc., of New York, Wang now offers one of the quietest daisy printers on today's market. With the new sound abatement, the noise level has been reduced from a decibel reading of sixty-seven decibels to a reading of below sixty decibels. This improvement places the Wang Daisy Printer five to ten decibels below the Industry standard.

The enhancement is available for all Wang printers, including the 5541W, 5541WC, 6581W, 6581WC, and the Twin Head Daisy 5581WD. For additional information, contact your local Wang sales representative.

BOOK REVIEW

Illustrating BASIC

Donald Alcock
Cambridge University
Press, 1977
134 pages, softcover with
ring binding $4.95
hardcover $14.95

If you are looking for a good introductory BASIC text containing informative illustrations, short programs, and a fundamental approach to programming in BASIC; and if you enjoy reading a unique typeset format, the *Illustrating BASIC* by Donald Alcock, is for you.

In order to set the general approach used throughout this book, the author presents a line drawing of the famous program "bug." This is but one of the many "biff! bam! pow!" Batman and Robin type inserts used to reinforce specific conceptes as they develop. This approach leads the reader through a convenient how-to-do-it explanation of BASIC programming.

The first chapter introduces the reader to what the author calls "Components of the Language." Immediately, the reader gets a taste of the unique presentation offered by this book; illustrations, short programs, and interesting problems abound. The fundamental concepts of most versions of the BASIC language are introduced via a short note and illustration, and a few program lines which alllow the reader to see how the program should appear.

Numeric variables (integer, real, and exponent form) and text variables (strings) are presented in a short but thorough exposition.

Chapter 2, entitled "Input and Output, Expressions and Functions," covers the DATA, READ, RESTORE, INPUT statements, and the SGN, ABS, SQR, INT, LOG EXP, SIN, SOS, RAN, ATN, RND, DEF, PRINT, TAB, and PRINT USING functions. For each statement or function, a simple illustrative program is given. For example, and engineer may be interested in the short routine that calculates the spring properties of a diving board; the businessman will find the monthly repayment on a loan useful; the game player can use the die throwing routine; the mathematician has a routine that plots the graph of the cosine function; and everyone should enjoy the examples given for the PRINT USING statement.

After these concepts is Chapter 3, "Control." As in every chapter, the pertinent statements such as GOTO, IF...THEN, STOP, ON...GOTO, FOR...NEXT, GOSUB, and RETURN are

introduced, illustrated, and programmed into short routines. Chapter 3 does just that with the GOTO. Some of the programs include: solving a pair of simultaneous equations having any number of right hand sides; area calculations for triangles, rectangles, and circles; and the game of Moo (quite similar to Bulls and Cows; a number based Mastermind).

A useful routine in Chapter 3 introduces the reader to stacks and to the concept of recursion via the GOSUB statement. This by-the-way approach of introducing and examining a relatively complex idea is done rather subtly and painlessly.

Arrays are covered quite well in Chapter 4, and matrix operations are presented in Chapter 5. The concepts in Chapter 4 concerning arrays are enhanced when the reader finishes examining the matrices in Chapter 5. The author explains and illustrates matrix functions, although not all BASIC systems have them. He then manipulates matrices without the functions, using nested loops. Some of the more interesting matrix operations include: arithmetic operations upon arrays, transposing a matrix, initializing an array to all zeros or all ones, inverting a matrix, and input and output statements performed on arrays.

The array manipulating routines deal primarily with matrix algebra applications and could prove useful to the engineer or the mathematician.

Chapter 6, entitled "Complete Example Programs," contains only two programs. The first is a routine which converts Roman numerals to Hindu-Arabic (such as VII to 7). The other program is a critical-path analysis routine. Expecting a host of programs in this chapter, I was disappointed to find only two. They are good example programs which bring together almost everything the reader has seen so far. Perhaps they could have been included as wrap-up programs in other chapters.

The remaining three chapters ("Commands and Signing-On," "Files of Data," and "Syntax") explain how the typical BASIC interpreter handles the RUN, SAVE, UNSAVE, OLD, NEW, and CATALOG commands (the reader is cautioned as to the particulars of his or her personal BASIC); a typical sign-on session (see your owner's manual for this one); a short (unfortunately) discussion pertaining to sequential and direct-access files; and a modified Backus-Naur notation used to summarize the syntax of BASIC.

I ran most of the examples presented in the text on my Level II TRS-80. Since the author does not use any machine- or interpreter-dependent statements in his examples, there should be no problem in running the examples or other microcomputers. Some caution is expressed by the author, however, with regard to the lack of portability of BASIC. The reader should examine his or her BASIC manual for any differences between what the author labels "minimal BASIC" and the BASIC used in the reader's computer.

Overall, *Illustrating BASIC* is a good first book for the novice computerist. The author's preface statement does ring true after reading this book: "You don't have to be a computer scientist to read this book: It is for students meeting computers for the first time; for those in industry (particularly engineers) who never formally studied computing but would like to write simple computer programs; for managers who do not want to write programs but would like to know more about a field in which they often have to make decisions; and for those who can already write in BASIC but seek a broader view of portable programming and an introduction to a few programmers' techniques like state tables and list processing."

Reviewed by:
Len Gorney

Editors Note: Any books that you have read and would like to review will be gladly printed in this publication.

TRADE SHOW EXHIBIT SCHEDULE

1980

Jan.		
7 — 8	East Carolina Computer Conference	Greenville, NC
8 — 10	Graph-Comm '80	Buffalo, NY
9 — 11	AFCEA Western Conference and Exposition (National)	Anaheim, CA
10 — 11	Independent Insurance Agents of Washington	Seattle, WA
18 — 21	National Home Builders Association (National)	Las Vegas, NV
Feb.		
21 — 24	Southern Educational Congress of Optometry	Atlanta, GA
26 — 29	Info Trek "80"	Denver, CO
March		
3 — 5	NCC Office Automation Conference (National)	Atlanta, GA
13 — 16	Gutenberg Festival	Long Beach, CA
17 — 20	Interface '80 (National)	Miami Beach, FL
19 — 20	Federal Office Systems Expo	Washington, DC
30 — Apr. 2	Oregon Dental Association	Portland, OR
Apr.		
1 — 3	Word Processing Expo-sium '80	Lake Geneva, WI
12 — 19	Print '80 (National)	Chicago, IL
15 — 17	Cleveland Business Show	Cleveland, OH
21 — 23	DPMA Region II Spring Conference	Eugene, OR
23 — 25	National Conference on Law Office Economics and Management (National)	San Francisco, CA
28 — 30	Federal DP Expo	Washington, DC
— May 2	Computerized Office Equipment Expo	Rosemont, IL
30 — May 3	Association of Legal Administrators Conference (National)	Miami, FL
May		
14 — 15	Industry and Business Expo '80	St. Louis, MO
19 — 22	National Computer Conference (National)	Anaheim, CA
21 — 23	New England Computer Conference	Merrimack, NH
June		
3 — 6	Southern California Business Show	Los Angeles, CA
24 — 26	IWP Syntopican VII	Minneapolis, MN

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WANG SYSTEMS NEWSLETTER SURVEY.

COMMENTS

SYSTEMS NEWSLETTER SURVEY

We want to improve the *Systems Newsletter* so that it better meets your needs. Please take a few minutes and tell Wang where you'd like to see the Newsletter go. Fill out this questionnaire and drop it in the mail today!

Date: _____

Title: _____

How long have you been part of Wang's Software Consultant Network?

Months _____ Years _____

How often do you read the *Systems Newsletter*?

_____ all the time

_____ some time

_____ once in a while

_____ almost never

If you read *Systems Newsletter*, do you find it contains:

_____ Information important to you as a Wang Software Consultant.

_____ Little information important to you as a Wang Software Consultant.

Comments: _____

_____

If *Systems Newsletter* provides useful information to you, what areas do you find most informative:

_____ Technical Notes

_____ New Product Announcements

_____ Trade Show and Exhibit Schedule

_____ Other

Comments: _____

_____

In general, do you find the articles in the *Systems Newsletter* to be:

_____ too long

_____ too short

_____ too few

_____ lacking substance

_____ uninteresting

_____ interesting and useful

_____ not applicable to your situation

_____ too technical

_____ not technical enough

_____ other

How would you like to see *Systems Newsletter* improved? _____

_____

_____

_____

What specifically would you like to see improved? eliminated? added?

_____

_____

From _____

_____

_____

_____

Comments: _____

_____

_____

_____

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THANK YOU.

From: _____

_____

_____

_____

_____

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Attention: Marianne Roy

Tape or Staple Here

To help us to provide you with the most useful information possible, please make your comments and suggestions concerning this publication of the form below. Then detach, fold, tape closed and mail to us. All comments and suggestions become the property of Wang Laboratories, Inc. For a reply, be sure to include your name and address. Your cooperation is appreciated.

TITLE: **Wang Systems Newsletter**

Comments, Criticisms, Suggestions, Etc.

Fold Fold

Fold Fold

FROM: NAME_____
ADDRESS_____
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NEWSLETTER NO. _____

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VENDOR: _____

CONTACT: _____ TELEPHONE: _____

INDUSTRY: _____

APPLICATION: _____

DESCRIPTION: _____

MINIMUM H/W CONFIGURATION: _____

INDUSTRY: _____

APPLICATION: _____

DESCRIPTION: _____

MINIMUM H/W CONFIGURATION: _____

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