

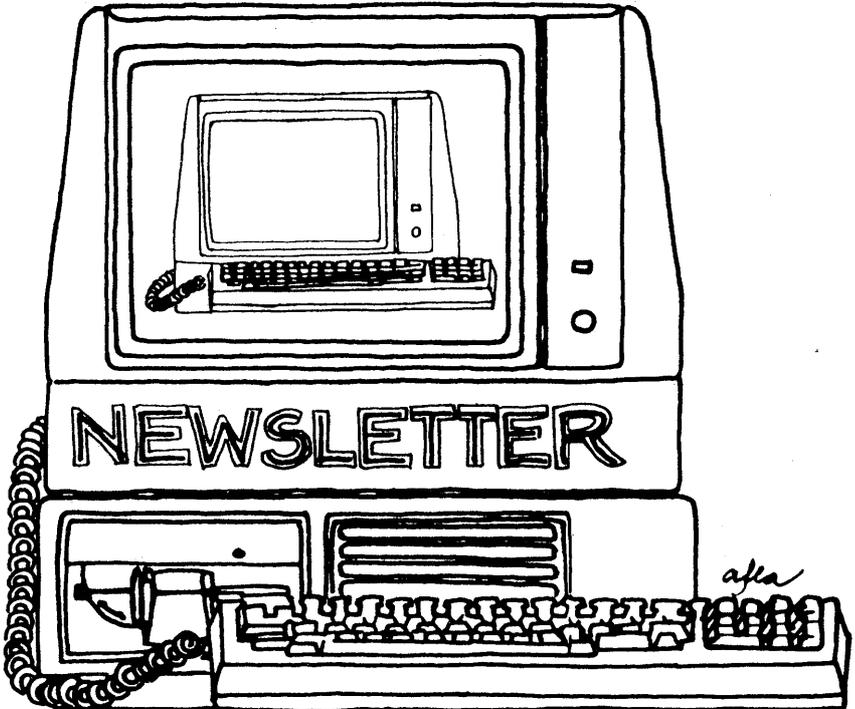
May 8, 1986

Volume 4

Issue #5

BAY AREA MICRO DECISION USERS ASSOCIATION

BAM DUA



A MUTUAL SUPPORT NETWORK FOR USERS OF
MORROWS' MICRO DECISION COMPUTERS -
P.O. BOX 5152, BERKELEY, CA. 94705
415: 644-2805

marinace resources group

Robert C. Marinace
President

Technical • Financial • Production • Marketing

• • ATTENTION • •

MD-3P's FOR SALE

Dear Morrow User,

We need your help. We have several new Morrow Portables surplus to our needs for sale and don't know what to ask for them. Several dealers in the Bay Area are selling them for \$895 and \$995.

We thought ~~\$695~~* for one and a discount for two or more would be fair. They come all sealed as from Morrow, complete with all software, such as NewWord, Correct-It, Smartkey, Personal Pearl, Super Calc, and MBasic, and all manuals.

Please call in your offers as soon as possible due to the limited quantities.

Cordially,



Bob Marinace

* \$645 - Call now to get yours!

(415) 490-4100 days

787 lippert avenue • fremont, ca 94539 • (408) 262-9722

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inside front cover
inside back cover

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Berkeley, CA. 94703, (415)843-8130.

NEWSLETTER

If you wish to submit material to the newsletter, please follow these guidelines:

- o Submit material before the 23 of each month
- o Submit hard copy along with a WordStar file on a SSDD or DSDD diskette; left margin, default; right margin, 68 and right justified. (NewWord files are acceptable).
- o Include your name, address and telephone number
Your disk will be returned to you.
- o Send newsletter materials to: Newsletter Editor
BAMDUA
P.O Box 5152
Berkeley, CA 94705

If you have questions about newsletter submissions, call me afternoons only on Wednesday or Friday (415-843-8167). If you have other questions about BAMDUA, call the BAMDUA Office, 415-644-2805. If you need technical help, use your DIRECTORY.

IMPORTANT: If you have something you especially want in the next Newsletter but are unsure you can get it in before the deadline, be sure to call me so that we can make special arrangements. If it doesn't matter to you when it is published, then you do not need to be concerned about the deadline; just send it in when you have it ready!

Please remember that the deadline is important in order to enable me to plan and produce the Newsletter.

If you have tried one (or more) of the utilities available on the library disks, write a review and send it in! If you know the answer (or think you do) to new or recurrent questions in the Notepad or Mailbox departments, write me so that I can make the information available to all.

We reserve the right to edit articles submitted for publication. In keeping with the spirit of "public domain" we grant permission for articles appearing in this Newsletter to be reprinted by other users' groups for the purpose of free dissemination of information as long as proper identification is made of author and source.

Thanks. --Georgia Babladelis, Ed.

BAY AREA MICRO DECISION USERS ASSOCIATION
A Morrow computer users' group

Monthly newsletter, Vol. 4, Issue 5 May, 1986

BAMDUA, P.O. Box 5152, Berkeley, Ca 94705
(415) 644- 2805

BAMDUA, the Bay Area Micro Decision Users Association, is open to all who are interested in Morrow's Micro Decision computers. Membership fee is currently \$16 per year and includes a subscription to our monthly newsletter. For information, membership application forms, etc., please send a self-addressed stamped envelope to the BAMDUA P.O. Box.

The BAMDUA office is open 8:30-4:30 weekdays; the answering machine or a call-forwarding BAMDUA volunteer will take your messages from 12:30 on. When Greg is in the office, he will answer the phone in the morning.

The main BAMDUA meeting is held the last Tuesday of each month.

+++ Next main BAMDUA meeting: ++++++
+
+ WHEN: Tuesday, May 27, 1986, 7:30 p.m. +
+ WHERE: West Branch, Berkeley Library +
+ 1125 University Avenue, Berkeley +
+ TOPIC: Demonstration: More "Special Deals" Software +
+ and others, with special guest speakers/demonstrators +
+ ++++++

PLANNING AHEAD: Information about future meetings.

When: Tuesday, June 24, 1986, 7:30 p.m.
Where: West Branch, Berkeley Library
1125 University Avenue, Berkeley
Topic: To be announced

LOCAL MORROW USER'S MEETINGS:

MUG/MARIN (Marin Users' Group) meets on the fourth Thursday of each month at 7:30 p.m. The address is P.O. Box 925, Mill Valley, Ca. 94942. For information, contact Susan Miller (415)383-6276 or Jim Kelly (415)472-1499. The group describes itself as a small but stimulating group which tries to diversify information for both novices and pros alike.

Stanford Morrow Users' Group, (S.M.U.G.) meets on the 2nd Wednesday of the month at 7:30 PM on the Stanford campus: Polya Hall (also known as Turing Auditorium), room 111. Info: Ed Gallaher (408) 749-9285 (H)

The CP/M Users of Santa Cruz County (formerly SCMDUG) will meet on the second Tuesday of the month at 7 p.m. at the Santa Cruz Public Library 224 Church St., Santa Cruz. This group is open to all users of Morrow, Kaypro, Osbourne, Televideo and other CP/M computers. There will be an open forum for questions, a public domain software demonstration, and public domain software for sale. Written inquiries should be sent to 376 Lucinda St., Scotts Valley, CA 95066. Since meeting places sometimes vary, for information call Marianne Russell, Sect., 408/438-0662 or Dave Kirk, 408/423-1462. (Note: The Morrow and Kaypro groups are joining forces and expanding)

PETMUG (Petaluma Users' Group) meets on the 4th Thursday of each month at Advanced Information Management, 245 North McDowell Blvd. (in Petaluma Plaza), Petaluma, CA. For info. contact: Don Waite, 707/763-6891 or Dick Hoffman, 707/762-8286 or mailing address: P.O. Box 948, Petaluma, CA. 94953.

CLASSES:

Until now, we have offered classes on MODEM7, INTERMEDIATE CP/M, a NOVICE EMERGENCY CLINIC for beginners, PERSONAL PEARL for beginners, PUBLIC DOMAIN SOFTWARE, QUEST ACCOUNTANT PROGRAM, and an ADVANCED CP/M and SYSTEMS class. Now it appears that there is not enough interest in them to continue offering these classes. However, if interest grows in the future, these classes will be made available again. Classes will then be scheduled when enough participants sign up for them. For information, call BAMDUA (415) 644-2805.

FLASH!! Lee McKusick is willing to start a Pascal Class. If you are interested in having a Pascal Class, please call the BAMDUA office (415/644-2805) and let Greg Smith know so he can start a list. What is needed is a Pascal expert! Are you one? Do you know of one? Ideas, suggestions, names are welcome.

BAMDUA OFFICERS

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FROM THE PRESIDENT'S DISK

by Sypko Andreae

Today I am going to write about how fast and how much. I am sure you would like to know. We all ponder about these things once in a while. Let me show you what I have found out.

First the question of how fast. After waiting long periods of time for WordStar to deliver a file to your printer while hogging your whole computer you might have taken steps to alleviate the problem. I tried several things but finally decided that the easiest, smoothest (and most expensive) way to solve the problem is using a printer buffer, which is basically a chunk of memory placed between the output port of the computer and the printer. The Microbuffer, made by Practical Peripherals is such a device. Mine has 64kB of memory and can be set to baud rates from 300 to 19,200. I prefer this solution over all the others.

Say you have been using the serial port for your printer. Following the instructions in your printer buffer manual you now hook it up between port and printer, while setting the baudrate rates all the way up to 19,200. WS output must be really zipping along now.

Does it?. No, it doesn't. WS is now the bottleneck. By measuring the time it takes for WS to transfer a file to the printer buffer you can calculate the average transfer speed in bits per second (bps). For WS with the internal printer driver installed it turns out to be only 3000 bps (which is roughly equivalent to a synchronous transfer of bytes at 3000 baud). So you may as well set your serial port and printer buffer for 9600 or even 4800 baud, it won't make any difference to WS. It is even worse if you use WS with the LST: device (internal printer NOT installed) because then WS slows down to about 2000 bps. NewWord does much better with about 7000 bps. PIP and SuperCalc are champions at around 15,000 bps. Unlike an MD2 or MD11, an MD3 Rev.2 serial port is limited to a 9,600 baud rate (due to a Morrow engineering oversight in the past). Now you know the limitations of WS and NW you may not feel so bad about that anymore.

Oh, yes, I was going to share with about how much. They say it is better to let your MD11 spinning all day, even when you use only for a few hours, because the start-up and shut-down is what causes most of the wear. Opinions differ about this, but one thing is clear: It will hurt your utility bill. But how much? When I took the trouble measuring it I was relieved to find the power consumption of my micro equipment is in a league with bright light bulbs. Here are some figures in Watts. Total 'm up and you'll know what applies to you. Power for printers varies between quietly sitting there or actually printing. A spinning floppy adds 20 Watts:

MD3 = 40-60	MD11 = 80-100	MT70 = 55	MP200 = 60-80
Modem = 25	PrinterBfr = 15	Okidata 92 = 55-100	

EDITOR'S: DOC

First, a couple of corrections regarding last month's Newsletter:

(1) The price for OUT-THINK was left out of the information in Special Deals. The company is making an introductory offer of \$49.95 and does not give a group discount at this time. That means that you can order it directly from KamaSoft, Inc. if you are interested in this powerful outlining program. Check the review of it in the Bamdua Newsletter, V.4, #3, April 1986, starting on p.10.

(2) In the article "From the President's Disk" Sypko said that members showed little interest in demonstrations of special deal software in contrast to their great interest in demonstrations of public domain utilities. That was an error. Sypko was unable to be at that meeting due to illness and got a report of the meeting from someone else. Apparently that person did not realize that the entire evening was devoted to demonstrations of public domain software only! There were no demonstrations of the special deals! Of course, all the members attending the meeting showed great interest in the public domain software! That is what it was all about! However, we have planned demonstrations of software from the Special Deals section for the April meeting, and again for the May meeting. By the time you receive this newsletter, the April meeting will have been held and the May meeting will be coming up, which leads me to the next topic, announcements.

Next, a few announcements:

ANNOUNCEMENT #1: At the May meeting we will have Barbara Valley of Valcon to describe and to demonstrate CHECKS & BALANCES. I had hoped to review it for you in this issue, but was not able to. You can get a first hand view of it and ask questions at the May meeting. A special price has been arranged for BAMDUA members. It is lower than an earlier offer (see June 1985 Newsletter) and lower than the price available from Spite Software.

CHECKS & BALANCES which retails at \$74, is being made available to our members for \$59.95 (plus CA tax and \$1.75 shipping). Send your check or money order to VALCON, 1260 Westwood St., Redwood City, CA 94061 or order on the spot from Barbara Valley at the May meeting. Specify your machine type and disk format.

I am not familiar with the program. It is described as "an excellent home budget management program that not only balances your checkbook but keeps track of all kinds of expenses and prints detailed reports for you and your tax preparer."

Some of the features listed are: (1) Unlimited categories and checkbooks. Up to 4,000 entries possible on a 390K disk. (2) Ready to run. No need for Basic or any other program. Compiled in PL/I

to run fast. (3) More powerful and easier to use than programs costing much more. (4) Disburse entries to five or more categories simply by filling in the blanks. No complicated procedure as with other programs. (5) Prints out all items flagged as tax deductible at year's end for easy tax preparation.

CHECKS & BALANCES offers an extensive set of printed reports. It can print many types of checks. Using the included Rolodex, all entries or a selected set may be printed as labels, rolodex cards or 3 x 5 cards. It is available for CP/M, MS-DOS AND IBM PC.

ANNOUNCEMENT #2: Making our MBBS the source for Turbo Pascal code

From the MBBS comes a note from Steve Torrence to all persons interested: "There seem to be several people interested in finding a source of include-able Turbo Pascal code; let's make this system into that source! I've made a modest contribution by uploading a library of procedures and functions...More important than the large, ambitious files that get widely distributed, ... are the little procedures that everybody writes to make their program easier to read or to rationalize its structure...Everyone who writes programs with Turbo can contribute things like (that) and all our programs will be the richer for it. Let's brew our own at home!"

(NB: See announcement of a possible Turbo class in "Classes." See announcement of special price for Turbo package in "Items.")

ANNOUNCEMENT #4: A press release came to me from Ed Niehaus summarized as follows: The Software Entrepreneurs' Forum is sponsoring an all day seminar "The Direct Marketing Approach" to selling software products; Saturday, May 17 at the Dunphy Hotel in San Mateo. Leading this "how-to" session will be Ray Jutkins, a twenty year direct marketing veteran. Featured will be Jutkins' "Eight-Point" recipe for the planning and execution of a direct marketing program. Plenty of time will be allowed for questions and discussion. Cost is \$60 for SEF members, \$95 for non-members. Lunch and materials are included.

And last, but not least, I want to thank all of you nice people who called or wrote a note saying you enjoyed the article about me in the recent MOR. It was truly enjoyable hearing from you. Of course, I want to take this opportunity once more to thank all the people who contribute articles and ideas to the Newsletter. Again, in this issue too, we have benefitted from your contributions.

--- Georgia Babladelis, Ed.

SPECIAL DEALS

If you are interested in any of the following, contact me directly and include SASE (G.B., Editor, 1064 Sterling Ave., Berkeley, CA 94708). Do not combine your order with member renewal or with any items listed as available from Bamdua, p. 31)

1. DATAPLOTTER

DATAPLOTTER: this unique program allows you to plot and print your data in a variety of ways without screen graphics. A review and cost information can be found in the BAMDUA NEWSLETTER, V.3, #6, JUNE 1965, p. 12-18. See also highly favorable review by Bruce Gale in Profiles, April 1985, p. 72.

STATUS REPORT: We qualify for the group discount of 20%.

2. PSYCHOSTAT-3

A powerful statistical program for CP/M (also other versions available). See description of the program in this issue of the Newsletter. Retail for \$99; a group order of 5 or more brings the cost to \$50 per copy!

All the special deals which follow this note include information about the appropriate person and/or address to contact.
Do not contact me nor the Bamdua office.

3. TWIST & SHOUT

This delightful and easy to use program allows you to print material (e.g., spreadsheet data) sideways in normal or condensed print; and to creat multiple-line banners in several type faces. A special price is available for 60 days only. See review, p.11.

TWIST & SHOUT! (CP/M or MS/DOS version); Combined versions
Regular price: \$34.95 \$49.95
Special price: \$30.00 \$45.00

NOTE: This offer is good only for a period of 60 days following the publication of this Newsletter. All orders at special prices must be made via mail and must include payment (check or credit card). No phone orders. No COD's. You MUST identify yourself as a member of BAMDUA. Order directly from the company. Add CA tax and \$4 for shipping and handling (e.g. \$30 + \$1.80 + \$4 = \$35.80).

4. OUT-THINK

OUT-THINK is a "compleat" outline processing program made by KamaSoft specifically for outlining. It allows you to see the "forest" and/or the "trees." It is available at a special introductory price of \$49.95 directly from the company. See review in last issue of the Newsletter, V.4, #4, 1986, p. 10.

5. PROPORTIONAL STAR

PROPORTIONAL STAR, created by Writing Consultants, is the software version of their popular book detailing how to patch WS in order to accomplish proportional printing. The patches are now available on disk with simple instructions for installing for your system and version of WS. See review, last issue of the Newsletter. A 20% discount on the \$75 price is available to persons who mention they are BAMDUA members and ask for the discount when ordering directly from the company.

6. REACHOUT

REACHOUT, a menu-driven telecommunications program that works with any modem, including the CTS MM-300 Modem System. A special version of ReachOut is available for all Micro-Decision computers. The price is \$125.00 (\$65.00 for the MM-300 version), plus 6% tax in California, shipping by UPS to a day time address included. Full end-user telephone support is provided by the manufacturer. Send \$132.50 (includes tax and shipping) to Applied Computer Techniques, 21 Cottonwood Drive, San Rafael, CA 94901; 415/459-3212. ReachOut is reviewed in Morrow Owners' Review #2 & #3.

7. EC-CATALOG

This is a fast, easy to use, powerful catalog program which vies successfully with more expensive ones. It is available to BAMDUA members directly from its creator for \$10 (includes manual). See the review in this issue of the Newsletter, p.13. To order, write Phil Hess, 917 N. 10th St., Lafayette, Indiana, 47904.

8. CHECKS & BALANCES

This program is described in this issue of the Newsletter and it will be demonstrated at our May 27 meeting. You may order it at that time, or by mail from the company. The program retails for \$74.95 and is available to BAMDUA members for \$59.95 plus tax and shipping charges: \$59.95 + \$3.60 + \$1.75 = \$65.30. Read the description and come to the meeting to see how it works!

9. TURBO PASCAL --- See "Items Available through Bamdua" on page 31.

SOFTWARE NON-REVIEW: PSYCHOSTAT-3

by Georgia Babladelis

Program: Psychostat-3

Company: StatSoft

2832 East 10th Street, Suite 4
Tulsa, OK 74104

System: CP/M (other systems available also); can run on 1 drive.

Price: \$99 (see special group rates for BAMDUA members)

This is not a review. The company does not provide review copies to other than "leading" software journals and newsletters. All along I thought I was editing a "leading" newsletter, so it is a little rough on my morale to learn that I do not! Before I jump off the bridge, let me tell you what the company says about its product. Why am I bothering? There are two reasons: (1) This is a statistical package which runs on CP/M, which many people probably (i.e., statistically speaking) want; (2) The company offers a handsome discount rate for group purchases; if we have 5 or more orders, the cost is \$50 per copy rather than \$99.

The description which follows is based on information supplied to me by the company and not on my first hand experience.

PSYCHOSTAT-3 handles basic statistics, advanced statistical analyses, graphics, and the editing of data files.

Basic Statistics: Descriptive statistics (means, standard deviations, etc.), t-tests for independent and correlated samples, one-way analysis of variance, Chi-square analysis, and correlation. All reported statistics are accompanied by the appropriate p-level; all tests allow the user to specify missing data values.

Advanced Statistical Analyses: General multiple regression -- up to 25 predictors in one regression equation, formatted correlation matrix, unlimited number of cases, R, R-Square, F, standardized and unstandardized regression weights, standard analysis of variance table with SS-regression, SS-residual and SS-total; all statistics are accompanied by the appropriate p-level. General analysis of variance/covariance -- up to five factors, repeated measures, simple effects, contrasts, unlimited number of cases, unbalanced designs, adjusted means, p-levels for all F's and t's.

Graphics: can produce bargraphs and scatterplots of the data on any dot matrix or letter quality printer.

Editing: a powerful, menu-driven data editor program is included, allowing the user to enter, edit, or transform data. You may create Statsoft system files that contain all the information about the size of the data file; these system files are accepted by all the procedures, thus the user does not have to remember the number of variables or cases in the datafile. The data editor also includes several options that allow the user to read data files created by spreadsheet programs and databases.

SOFTWARE REVIEW: TWIST & SHOUT

by Georgia Babladelis

Program: Twist & Shout
Company: Spectre Technologies, Inc.
22458 Ventura Blvd., Suite E
Woodland Hills, CA 91364
System: CP/M, Morrow Format (other systems, formats available)
Requires: dot matrix printer; several supported
Price: \$34.95 (See special group rates for BAMDUA members)

Although the names of these programs might conjure up visions of a rock disco dance, you really don't need to exert much effort to get a lot of use and fun with them. In fact, the name of each program is descriptive of what it does. TWIST lets you turn your print-out sideways; SHOUT lets you create banners with one or several lines in different fonts.

Installation is clear and simple for both programs. The file which holds the printer overlay for your specific printer is used by both TWIST & SHOUT. The printers currently supported are: Apple Dot-Matrix Printer, Imagewriter, Imagewriter II; BMC Micrographic; C.Itoh 8510, 8610 BPI, 8510 Prowriter, 1550, 8600B; CTI CT-80; DEC LA-50; Epson (all models with Graftrax) and compatibles; Gemini 10X, 15X, 10X-PC, 15X-PC, all SG series; HP ThinkerJet; IBM Graphics Printers, Prowriter and compatibles; IDS Prism 80/132 with Dot-Plot, Microprism and 480; Legend 880, 1385; Mannesmann Tally Spirit 80, MT160, MT180; MPI Sprinter, Printmate 99, Printmate 150; NEC 8023 AC; Okidata 82/83 with Okigraph or PC-Write ROM, 92, 93, 182, 192, 84. Versions of TWIST & SHOUT are available for all MS/DOS and all CP/M computers. The version reviewed here is CP/M, Morrow format.

To use TWIST, simply enter that command (assuming, of course, that you have made a working disk copy and have installed the program). A sample file is provided so that you can test right away to see if everything is working correctly for you. A few troubleshooting guides are presented, as well as a list of error messages describing possible problems and what to do about them. The user can control the way the final printout looks, including the margins, character size and spacing, form size, and print density. A menu of choices is available for you to choose the options desired. The manual explains clearly what the options are; of course, you can try out different ones until you find that combination of size, margins, etc. that pleases you.

My Gemini 10X has a small carriage and on occasion I want to print out a big spreadsheet of information. I usually do it in two stages, or if time is not pressing, I will print out the whole thing on my wide-carriage MP200. Now, with TWIST, I can print out the whole spreadsheet on one 8-1/2 x 11 sheet of paper using small print or across two sheets of paper using large print. I prefer the small print, which gives me a condensed spreadsheet of information. TWIST will work with virtually any text file (ASCII files). Almost every program one might use has a method for generating a compatible text

file. In the manual, descriptions for conversion to compatible files are given for: Lotus 1-2-3, Symphone, Multiplan, WordStar, CalcStar, SuperCalc, Perfect Writer, Perfect Calc, and MicroPlan. My files were done with SuperCalc. It was simple to convert the files to the .PRN format in SuperCalc and then to run TWIST and print out the spreadsheet information lengthwise on the paper in condensed print on one page.

SHOUT is similarly easily used. The command (SHOUT) will bring up a menu from which you make choices which will control almost all aspects of the banners you make. There is even a provision for cooling the printhead, if necessary. If you do not want to use one of the three typefaces provided (Times Roman, Olde English, and Sans Serif), you may opt for a quick output which prints the banner much more quickly using either an asterisk or, if you opt for "auto quick", the equivalent text character (e.g., if you print an A, then A's will be used in the printing of it). Otherwise, (i.e., not using "quick"), the full graphics method of printing is used. Several lines are possible for your banner message, depending on the size of your printer (a chart is provided in the manual for easy reference). For my Gemini 10X, the maximum number of lines is 4. The lines may be printed centered (i.e., each line is centered) or left justified, as you wish. The type face chosen can be different for different lines in the same banner or even mixed within the same line. It is easy to change the text and/or the typeface by making the appropriate menu selection. You can save your choices for future printings, or update them if you change your mind. Finally, you select "print" and the file is immediately twisted and printed out. Printing can be aborted at any time.

Clearly, these are easy to use and fun programs. I am delighted to have the capability for "twisting" the printout of data so that it goes across the page sideways. For my purposes, it is much more convenient to have all the information on one page of a standard size, rather than spread across several pages in segments or printed in one page on a large sized sheet. Personally, I do not make banners very often but I can say that if I want one in a pinch, this certainly is an easy and attractive way to do it. The makers of SHOUT promise even more type faces in the future. Already an inexpensive package at \$34.95, TWIST & SHOUT is particularly attractive at the special group discount rates for BAMDUA members:

TWIST & SHOUT! (CP/M or MS/DOS version);	Combined versions
Regular price:	\$34.95 \$49.95
Special price:	\$30.00 \$45.00

NOTE: This offer is good only for a period of 60 days following the publication of this Newsletter. All orders at special prices must be made via mail and must include payment (check or credit card). No phone orders. No COD's. You MUST identify yourself as a member of BAMDUA. Order directly from the company. Add CA tax and \$4 for shipping and handling (e.g. \$30 + \$1.80 + \$4 = \$35.80).

SOFTWARE REVIEW: EC-CATALOG

by Georgia Babladelis

Program: EC Catalog
Creator: Phil Hess
System: CP/M 2.2, 3.0; 50K TPA; 2 disk drives
Cost: \$29.95; Available to BAMDUA members for \$10

As you know, there are several catalog programs available now. There are two currently in our Bamdua library (NCAT, on Vol. 13; and YANC-23, on Vol. 28). Both programs were reviewed along with EUREKA! in the Bamdua Newsletter, V.3, #8, Sept., 1984, p. 11.

Phil Hess, whom many of you might recognize as the author of a splendid series of articles appearing in this Newsletter about various upgrades for the MD2, has created a speedy and useful catalog program called EC Catalog. It is a powerful, full-screen, disk and file catalog program with built in help screens and simple installation procedure. Its features are:

- Catalog a new disk or update a disk already in the catalog, appending comments to each disk and file entry during the process if desired.
- Remove a disk from the catalog.
- Display the file directory of any disk in the catalog.
- Print all disk directories.
- Labels printed for disks.
- Inventory of all disks in the catalog.
- File search on any disk in the catalog (wildcard also).
- Global file search on all disks in the catalog (wildcard also).
- Search all file names and file comments for a specified string of characters.
- Enter the current date.

File names in directory and search lists are always listed alphabetically, with file size and disk name included. Where appropriate, the current date and the disk's catalog date appear in the list. Listings of various sorts can be directed to the screen, to the printer, or to a disk file. Once the disk files are cataloged you can get information about any disk (e.g., file names, sizes, etc.) immediately from the catalog without the disk being physically present in the drive. Also, of course, you can find out exactly where one or more files are (i.e., on which disks), and you can make wildcard specifications to do a global search of the entire catalog for the names and whereabouts of files containing a specified string of characters. If you cannot remember the name you

have assigned to the disk, just display the list of disks in the catalog and "point" to the one whose directory you want to see by moving the cursor in the familiar wordprocessing manner.

Cataloging moves swiftly; the drive containing the disk to be cataloged is automatically reset for each new disk. Full information is provided during the process, such as which disk is being cataloged, how many files, etc. A summary is always provided across the top of the menu display, telling you how many files on how many disks have been processed so far. That summary, plus the date of the catalog, appear with the menu when you boot up again later. I found that to be a handy feature because so many catalog programs do not let you know where you left off cataloging unless you have made a print-out. For example, I tend to get bogged down and not update my catalog regularly; when I return to the cataloging project, I am hopelessly unable to recall which disk I last cataloged. Sound familiar? Well, just boot up EC Catalog and there is all the latest information, including dates.

More than one catalog can be made. There is a limit of 99 disks per catalog. A menu lists the choices described above (e.g., to update a catalog, delete a part of the catalog, search files, display directory, etc.). The steps are easy to follow and the directions are clear. Cataloging requires naming the disk to be cataloged. EC Catalog allows you to name it as you are cataloging it and to make any comments about the file or the disk in the process. You can list or print one disk directory or all of them. A unique feature of this program is that it permits you to make labels for your disks so that you can attach the label to the disk for future immediate visual identification. The program allows you to specify the length and width of the labels, and the size of the print on them (e.g., condensed print of 17 characters per inch with 8 lines per inch).

The only shortcoming, in my view, is the lack of an immediate way to see which particular files are on how many disks. If I know the name of the file ahead of time then a global search will reveal all I want to know. But sometimes for some reason relevant to an article in the Newsletter, I want to know what files are repeated on which disks in our Bamdua library and I don't know their names ahead of time. As you can see from my example, this is a minor quibble not apt to affect many people.

If you aren't quite impressed with this inexpensive, powerful catalog program, you will be when I tell you that two additional programs are on the distribution disk as a "bonus." Each program performs one of the list functions of EC itself, but does so from the CP/M command line! How's that for fast information?

This is a fast, powerful, and flexible catalog program. It is competitive with commercial programs with bigger price tags and it is easier and faster to use. It beats both public domain programs in overall features and speed and it is competitive with both of them in price. See Special Deals.

SOFTWARE REVIEW: CARDBOX-PLUS

by Daniel Mann

After I bought my MD-3, my needs for a data base could not be met with anything I could find. It had to be able to print out different fields on the same line, retrieve records interactively from the screen, be able to search for words if only part of the word is known. In my search for a fast and easy data base that could index multiple words per field, I read about CARDBOX in "Info World;" (rated excellent in all categories).

When I found it, the information retrieval system pleased me as much as it pleased "Info World." It is command driven by 1 or 2 key strokes. Possible options are displayed on lines 22-24. After a command is typed, the prompt lines changes to show the new alternatives. I catalogued movies and TV shows -- being able to find all COMEDIES directed by Woody ALLEN and starring Louise LASSER in a 92K data base of 225 movies in about the time it takes W.S. to change Help Screens on an MD3. I have used it for personal records, diary, abstracts, and slide catalogue. CARDBOX quickly converts portions of my personal records to MailMerge format for birthday cards and Holiday letters.

There is now an expanded version called CARDBOX-Plus. It was being distributed in England. The author promptly sent me a brochure detailing important new tools for data display and manipulation. Now, it can read, as well as, write MailMerge files or other data bases with coma-delimited fields; display and print records up to 132 columns by 18 rows; search ranges of numbers, dates, or letters; sort output based on any indexed field; tag records or groups for inclusion/exclusion. It will display all indexed words for a field upon request. It uses W.S.-like editing of multi-line fields. As mentioned previously, data takes up relatively little disk space. The program requires only 88K of disk space in operation! Control P will send the screen display to the printer at any time.

The prime goal for my trip England was to investigate CARDBOX-Plus with the hope of obtaining a dealership for the United States. In an afternoon of talks and inquiry, I learned the new features now available in the Plus. I was delighted with it's ease, speed and flexibility. I was granted a CARDBOX-Plus dealership in the U.S. and returned with 4 CP/M and MS/Dos programs and hopes of launching a new enterprise.

The name CARDBOX is possibly unfortunate because it does not reflect the great capabilities of this fast, friendly and flexible tool. It is fast because there are no menus after the opening menu and because the retrieval of records and display of command prompt options is astonishingly quick. It is friendly because of the clear prompts at the bottom; record number, file name and search levels at the top. The user assigns the field names and refers to them with the first two letters of the name. Error trapping and correction is bomb-proof. It is flexible because the format can be moved around;

fields added, deleted, lengthened or shortened without rebuilding the data base or index; words can be indexed or un-indexed at the touch of the TAB key. The data can be displayed and printed (whole or in part) in many optional formats that the user creates and keeps in format files. The screen and print out can be embellished with lines, boxes, descriptions, titles. Indexed words can be of unlimited number. The user can add or edit records while viewing and selecting.

There are limitations. It will accept 65,500 records; each record is limited to 18 rows by 132 columns in CPM80. The size of the data base is limited by the disk storage capacity. The number of fields is 26. While 26 is not as many as some, separate fields are not needed for dates, numbers, and words. (Separate ZIP code fields are not essential; dates are distinguished from ordinary numbers.) It cannot refer to other files. Phrases cannot be indexed as a whole. (Hyphenated words are indexed.) Its main limitation for some is the inability to do math. The data must be dumped to a file and fields summed with a basic program. It does not have capabilities to execute pre-selected retrieval routines. SmartKey works.

The PC/MSDos/CPM86 versions have more features but aren't faster on an 8088 machine running at 8 MHz. The 8 bit and 16 bit versions of CARDBOX-Plus can convert the data from the other version to it's own. Both are written in assembly language. Indexed words and key prompts are displayed bright and the remainder dimmed - terminal permitting.

< This is the way my screen looks while I'm looking at a movie record >

```
CARDBOX-Plus  File = A:FILMSTV.FIL          READY
Level  0 - RECORD 51 OF 230

The Godfather                512
Yr: 72  Min/Etc: 375
DIR: Francis F Coppola      WRTR: Mario Puzo
MUS: Nino Rota              PHOTO: Gordon Willis
SUB: drama biography        ACTS:
Al Pacino, Marlon Brando, James Caan, Robert Duvall, -
Diane Keaton, Sterling Hayden
```

```
Enter command: []
MASK; SElect, INclude, EXclude; HIStory, BAck, CLear; TAG; KEep;
ADD, DUPLICATE, EDit, DElete; REAd, WRite; FORMat, PRint; SAve,
QUIT
LIST:  ^R=1st ^C=last ^A=back ^F=fwd TAB=tag ENTRY: ESC=erase
^H=backspace
```

The list price of the CP/M version is \$210, 5.25" & 8"; the price for the IBM or generic MS/Dos version, 5.25" and 3.5," is \$320. I offer discounts to club members. Call me, 818-506-8822.

FAN NOTES: A LARGE QUIET FAN FOR THE MD3-P

by Lee McKusick

Here is one path to a quiet and cool MD3-P. I disliked the high whine of my Morrow. I eliminated the high whine. Only in the still of the night, now I hear the medium tone of the new big slow fan I installed.

The new fan has a few problems: The new big slow fan delivers so much air I now have a draft on my face from cold air mushrooming around the video screen. The new big slow fan has 5.8 times as much blade area as the old fan. The new fan runs on 110 volts only, so the 220 volt option is closed.

The fan installation was a 4-6 hour project requiring layout, sawing, drilling and a trip to an electronics store for hardware.

I did the project in a top down fashion. I measured case temperatures, talked with minor experts, evaluated options and hunted for the best parts.

Could I completely eliminate the fan by providing a big case with lots of air vent slots? For test, I removed the case and ran the computer. After 10 minutes of operation I switched off and unplugged the computer (and waited 3 minutes) and observed circuit temperatures by holding my fingers near and never touching any components.

Do not touch the display tube or the beige circuit board beside the display tube. Too many dangerous voltages for safe exploration there.

The fan off test revealed: The first fatal overheat item is the power supply. When the fan is off, the switch transistors in the switching type power supply overheat. Normally the switch transistors are warm. When the fan is off, they are hot. With the big fan described here, the switch transistors are only lukewarm.

An attractive no fan cooling strategy is to replace the entire power supply. Replace it with a non-switching non-fan cooled power supply mounted somewhere else. This approach requires examination of the Morrow circuits. I recollect that some memory integrated circuits use multiple voltages and the voltages must be applied in a particular sequence.

I installed a large quiet fan. This modification is more difficult than building a Heathkit.

The largest and quietest practical cooling fan I located is a Rotron Whisper WX2A1. Dimensions are 4 3/4" square by 1 1/2" thick, 115 volt a.c., 60 mA. current drain. Sold as surplus by Silicon Valley Surplus, Oakland, Ca. for \$9.99 each.

Here is a parts list:

1 fan, Rotron Whisper WX2A1	[Silicon Valley Surplus,]
1 inlet screen	[Electronics Etc., Berkeley]
1 fan power cord	[Electronics Etc.]
8 screws 6-32 x 3/4"	[electronics store]
4 nuts w/lock washer 6-32	[electronics store]
1 grommet, 5/16" drill hole	[electronics store]
8 wire ties 1/8" size	[electronics store]
- solder, tape	

I decided to attach the fan on the outside left of the back panel of the computer. I removed the original Pico Ace 25 fan. I sawed and drilled the back panel. Last, I sawed about 5" x 5" from the back of the fiberglass case.

Fan installation planning:

Plan so you have finger clearance all around the fan after it is installed. Consider- how will you turn the screws to remove the inlet screen when you clean the fan screen? Also, an inlet screen really is necessary. You bet, the fan will suck a curtain right up tight.

Plan so the fan mounting screw holes do not interfere with the power supply case rim. Use pencil to outline the case rim on the back panel. I used 6-32 x 3/4" long screws for mounting.

Plan so the fan power cord is not underneath the carrying handle. The cord must clear the power supply case rim. The cord must touch nothing inside the power supply. Pencil marks may help identify the interfering areas. I used a grommet sized for a 5/16" hole for the fan cord.

Study the wires inside the case and use 1/8" cable ties to tidy up and prevent wires from touching the fan blades. The key to reassembling your MD-3P without pinching a wire and risking a fire is to understand the paths of the wires.

Can you locate and specify a fan fuse? I omitted a fuse and I loathe doing half-safe work. Please advise me if you determine a good fan fuse.

Remember, the space shuttle computers were disabled once by a single solder speck. For this reason, shield the computer when working around it. For this reason, completely dismantle the back panel for layout, drilling, sawing and soldering.

NEWWORD AND USER AREAS

by Phil Hess

(ED.'S NOTE: Phil starts this article by referring to a previous one on CP/M user areas. We will print that one at a later time. This article is reprinted here with permission of the author).

Even if you made it all the way through the long article on CP/M user areas and MS-DOS subdirectories, you may still be wondering, "What can I do with user areas?" Well, if you have NewWord, you can do a lot. One of NewWord's unsung strengths is its ability to access other user areas. While this is mentioned at several places in the user's guide, there is no summarizing discussion of how useful this can be.

There are two ways you can use NewWord to access files in user areas other than user area 0 (the boot-up user area). One way is to switch to a different user area from the opening menu with the L command (change logged drive). For example, to switch to user area 2 on drive B, enter B2 in response to NewWord's prompt for the new logged-in disk drive. Now, when you next create a new document, the file will be created in user area 2.

Another way is simply to include the user number with the file name. For example, after selecting D (to create a document) from the opening menu, enter a file name like the following in response to NewWord's file prompt:

```
A2:SAMPLE.DOC
```

File SAMPLE.DOC will then be created on user area 2.

One way to think of this is as follows: With NewWord, all file references are made to the logged-in user area on the logged-in drive **unless** you specify otherwise in a file's name or change the logged-in drive or user area using the L command.

This rule applies to all files, not just to files you create or edit. To copy a file from one user area to another, simply select the copy command, then enter the name of the file to copy and the name of the file to create. Note that both file names may include a user number as in the example above, just as both may include a disk drive letter. (However, to specify a user number, you must also specify the drive, even if you only want to use the logged-in drive.)

Another place where this is useful is when running a program from within NewWord using the R command from the opening menu. For example, suppose you have logged into a different user area and have created a document there named SAMPLE.DOC. Now you want to count the number of words in the document. Simply select R from the opening menu, then enter the following:

If Robert Throckmorton's COUNT.COM program is in user area 0 of drive A, NewWord will find it and run in. Then, after COUNT has done its work, control returns to NewWord. What this all means is that with NewWord you can logically organize and maintain your files (all files, not just documents) on your disks by using more than one user area. Plus, all files and programs on the disk are accessible from within NewWord. While this is especially useful with hard disks and CP/M 3.0, it works well with floppy-based CP/M 2.2 systems too, with the following exceptions:

With CP/M 2.2, if you put files in other user areas, there's no simple way of knowing what's in another user area without actually logging in and having a look at the directory. With sixteen potential user areas, it could take a lot of time to locate a file by logging into each user area with the USER command and displaying any files with DIR. DIR and STAT don't tell you anything about the other user areas, just the logged-in area. A simple DIR-type program which simply lists the names and user numbers of all files on the disk would be useful. Perhaps there is a public-domain program which already performs this function. If not, someone could easily write one.

Another problem presents itself with CP/M 2.2 when you try to run a program which uses other files. For example, when you run CORRECT from a different logged-in user area, it looks for its dictionary file in the logged-in user area and can't find it. Logging back into the user area where CORRECT.COM and its files reside (usually user 0) doesn't help any either, since the document you created in the different user area is now inaccessible to CORRECT. The only solution is to copy the document file to CORRECT's user area and run CORRECT from that user area.

Note that when you change the logged-in drive or user area with NewWord's L command, this change is only in effect while you are within NewWord. Exiting NewWord to CP/M restores the logged-in drive and user area to what they were prior to running NewWord.

Also, note that NewWord allows you to select user areas in the range 0 through 31, even though CP/M only supports user areas 0 through 15. Why these extra user numbers are permitted with NewWord is not clear and their use should probably be avoided. The NewWord user guide doesn't say what happens to files created with user numbers 16-31.

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PROGRAMMING WITH SMARTKEY MACROS

by Herman Holtz

Inspired by a recent article in *Personal Computing* (September 1985), I have finally begun to find some useful applications for SmartKey. Since little of my work is repetitive, redefining keys per se is of limited use. However, I do have problems, and the magazine piece pointed out that macros created by redefining keys can be used as program modifications--that is, those of us who are not "computer literate" enough to do our own programming and reprogramming can use these macros as a shortcut method to do the same thing.

One of the great banes of my existence as a writer is the transposition--you know, that "hte" you typed when you meant to type "the." It's an especially frequent occurrence for a writer who types with two fingers, as I do, and word processing has aggravated the problem because the speedy electron makes it easier to make these transpositions. Moreover, the black-on-gray letters on the Morrow keyboard do not help the situation for those of us whose eyes have reached the bifocal stage.

With the aid of SmartKey I have eased the problem. Now I can fix transpositions with a single keystroke. I have redefined one little-used key as `^K^B ^D ^K^K ^D ^KV ^K^H` [Editor's note (R. Danca): to improve legibility, I have added spaces between the block move and cursor move commands; you don't need to do that to use SmartKey.] Placing the cursor on the first letter of the transposition and striking that redefined key makes the block move of the first letter to a position following the next letter, reversing their positions and correcting things nicely.

Another way to handle the problem with SmartKey is to redefine a key to `^G ^G`, which will delete those two letters, starting with the first one, and then retype the two letters in correct sequence. Or to `^H ^G ^H ^G`, which will erase those two letters, moving backward. Or, if you want to use the first method in reverse sequence, use `^K^K ^H ^K^B ^H ^K^V ^K^H`.

Of the methods, I prefer the first. And now that I have caught on, I will be searching for other ways to improve WordStar.

(Ed.'s note: And so he did. See the following article).

READY-MADE SMARTKEY MACROS

by Herman Holtz

Getting SmartKey (SK) macros right can be frustrating when they are macros for rather lengthy strings of keystrokes. If you go to the trouble of using WordStar for compiling the macro, you can make corrections, but you must then go through compiling it for SK. If you set it up in direct SK format, there is an excellent probability that you will do it several times over before you get it right. SK is unforgiving of mistakes; you have to start all over when you make one. And if you are anything like I am you hardly ever get it right on the first try. You wind up grinding your teeth or giving it up entirely.

Since I have already suffered the pain, I have managed to create some macros that work and serve me pretty well. I offer these to anyone who wants them as ready-made SK macros, some of which may be useful. (A couple are obviously not, since they are peculiar to my needs, but I include them because they might serve usefully as models for your own needs.)

One note before I list the macros: I use supershift for every macro because that requires me to set aside only a single key for SK, whereas I would otherwise have to give up a number of keys for SK macros. Here are the macros I have so far developed and use regularly:

<.K>	redefined to <^K^S>	Save
<.S>	redefined to <^K^S^Q^P>	Save and return
<.b>	redefined to <^A^P^B^F^P^B>	Boldface word
<.d>	redefined to <^O^D>	Suppress print commands on screen
<.h>	redefined to <^P^HERMAN HOLTZ^M P.O. BOX 6067^M SILVER SPRING, MD 20906^M (301) 460-1506^P^B>	Return address on letterheads when I am too lazy to change paper in printer!
<.o>	redefined to <^O^S2^O^T>	Double space copy and suppress ruler line
<.q>	redefined to <^Q^P>	Return after reformatting
<.s>	redefined to <^X ^Mb:spl -mb -db -a^] ^Ma:^Mws^M>	Load spooler and return to WordStar for printing
<.t>	redefined to <^K^B^D^K^D^K^V^K^H>	Transpose letters
<.u>	redefined to <^A^P^S^F^P^S>	Underline word

The spooler-loading macro <.s> was particularly difficult to get right because a complete series of commands and operations are involved--it's actually a mini-program--and I had to experiment to figure out the right number of spaces to insert to allow enough time

between steps. It's one of my most useful macros, however, because it saves me so many keystrokes. A number of commands are involved:

The macro orders the system to go from the WS No File menu to the command line, A>, opt for mode b (disk) as the buffer file, order the spooler to find that buffer file on drive b, and expect ^] as the attention character (used to address the spooler during printing, if necessary to halt it or order a pause), and then, after the spooler is loaded, go back to the WS No File menu and wait for the print command. The macro thus saves a lot of time and keystrokes. Moreover, it gets the series of commands right every time, something this human did not always do!

MORE ON SMARTKEY

[Copyright (C) 1986, Richard A. Danca]

New MUGW member Kevin Balfe recently let me look at the definitions he's made for SmartKey with WordStar on his Morrow MT-50 terminal. First, he uses the HOME key as his key definition key, and uses the backslash for his "super shift" key.

He's redefined ESC as his panic button--it now means: ^U (stop a command), a couple of breaks and ESC; using this new definition, he eliminates the interrupted message and stops the program in its tracks. Because he uses the colon more often than the semi-colon, the colon is now the bottom of the colon/semi-colon key.

Kevin has turned his numeric keypad into a cursor-control keypad: [check to see what the top lines of MT-50 keypad send!]

0	is redefined to	^X^X^X	(down three lines)
1	is redefined to	^S	(1 space left)
2	is redefined to	^X	(1 space down)
3	is redefined to	^D	(1 space right)
4	is redefined to	^A^S	(one word left, then one <u>space left</u> -- to the blank space)
5	is redefined to	^E^E^E^E...	(that many lines up)
6	is redefined to	^F	(one word right)
7	is redefined to	^Q^S	(to left margin)
8	is redefined to	^E	(up one line)
9	is redefined to	^QD	(to right margin)

COMPILERS AND INTERPRETERS

THE IMPORTANT DIFFERENCES

by Phil Hess

One of the reasons BASIC is supplied with so many microcomputer systems instead of FORTRAN or some other language is because BASIC is an interpreted language, meaning it's easy to learn, has its own built-in editor (of sorts), and since each line of a program is interpreted -- that is, examined for errors, among other things, before being executed -- mistakes are rarely catastrophic: BASIC simply points out (sort of) what you've done wrong and allows you to make changes and then run the program again. And since your program never runs without the BASIC interpreter, pressing CTRL-C at any time while your program is running returns you immediately to the BASIC editor (indicated by "Ok").

You can "see" the BASIC interpreter working with the following examples. First, type in and run this simple two-line program:

```
10 FOR I = 1 TO 10000
20 NEXT I
```

This is called an "empty loop" because it repeats, or loops through, lines 10 and 20 ten thousand times, but without doing anything else. Pretty useless, right? Right, except that it's a good test of how fast your computer and its BASIC are. On a Morrow Micro Decision, BASIC-80 takes about ten seconds to interpret those two lines ten thousand times.

Now type in this additional line and run the program again:

```
15 REM THIS IS A DO-NOTHING LINE.
```

Note that now it takes about twenty seconds to run through that empty loop ten thousand times with the addition of this comment line. Somehow we've slowed down BASIC considerably. This is because BASIC had to figure out what line 15 was, in fact had to figure out and then ignore this do-nothing line ten thousand times!

Also note that if you had typed in PRINT FRE(0) after running the first example, you would have seen that there were 32,790 bytes remaining (on a typical CP/M 2.2 Micro Decision), but after the second example the amount of free memory was only 32,755 bytes, or 35 bytes fewer. What's going on? Isn't line 15 only a remark, a do-nothing statement inserted simply to document and explain the surrounding statements? Well that's true, line 15 is a do-nothing statement, but it still takes up memory because the characters in line 15 have to be stored somewhere. (Note that there are exactly 35 characters in line 15, including spaces and the carriage return and line feed characters which end the line, requiring 35 additional bytes of memory.)

And so we've demonstrated the price paid for all the security and convenience of an interpreter: inefficiency. The more comments you insert and the longer you make your variable names, the slower the program runs and the more of that precious memory it takes up. In other words, an interpreter penalizes you for writing programs naturally, with lots of spaces and blank lines for readability and plenty of comments and long variable names for understandability.

Imagine writing a long letter to a friend in which you crammed several pages of news onto one sheet of stationary to save space, using all sorts of abbreviations throughout the letter to save time, substituting initials for peoples' names, and so on? Just think how difficult it would be for your friend to figure out what you were trying to say. Well, the same is true when you write a program in an interpreted language like BASIC: if you write it like this so that it takes up less memory and runs faster, the chances are no one else (including yourself in a few weeks' time) will ever be able to understand how that program works. Or care to understand how it works. The effort required would not be worth it.

Of course, a "clever" person might point out that there are "tricks" you can learn which save memory and speed up a BASIC program, such as appending comments to the ends of lines instead of allowing them their own line numbers, or putting comments outside of loops so they're only interpreted once. But my question would be: Why should we have to learn tricks to use a so-called "higher-level" language? Why should we be penalized for writing "natural" programs or for not knowing how to optimize our program code? Let's leave the tricks to assembly language programmers. They're especially good at that sort of thing, in fact even enjoy learning those tricks. The bulk of us users can do without the need for tricks, though, right? We turned to higher-level languages for the same reason that we use spoken or written English instead of Morse code to communicate our thoughts.

I think I've made a case for turning away from BASIC, except that traditionally there hasn't been much to turn to. Or rather, the alternatives (compiled languages) had their own dark sides. For example, compilers are usually more difficult to learn how to use and require a text editor, program development is slower, and good compilers can be expensive. Serious drawbacks. A few words about compilers then.

With an interpreter, the lines of your program don't do most of the work during execution, the interpreter does. If you have a line which contains the statement $A = A + B$, the interpreter has to check the statement for errors (i.e., whether it's a valid BASIC statement), then it has to chase down the current values of variables A and B, add them together, then save the result as A. And if you execute this statement more than once, for example in a loop, the interpreter has to repeat all of that for each execution.

Now a compiler still has to do something similar to this. It still has to check the statement for errors, then look up what memory locations it assigned to variables A and B, then construct a series of machine-level instructions which will ultimately retrieve the contents of those memory locations, add them together, then store the result in A's memory locations. But instead of executing those instructions immediately like an interpreter, the compiler stores or "compiles" the instructions in a file which later can be loaded into the computer and executed independent of the compiler.

The result is a program which generally runs significantly faster than an interpreted program. For example, the compiled instructions which resulted from your statement to add A to B and assign the result to A do not need to be interpreted each time they're encountered in the program flow, just executed. Plus, there's generally more memory available for a compiled program since an interpreter doesn't need to be present in memory to run the program as with BASIC.

Of course, I've simplified this compilation process, but essentially a compiler only "interprets" a program once, when it saves the results to disk, whereas an interpreter has to re-interpret a statement every time it is encountered during execution. In addition, with a compiler you can use all the comments and long variable names you want in your source code since the compiler simply throws out all the comments and reduces variable names (no matter how long they are) to simple memory locations. The comments and variable names are still there in your source code (the program you actually typed in), but not in the executable form of that program (the file with a .COM extension generated by the compiler).

The drawbacks to using a traditional compiler are legion, though. As you might have guessed, program development is a multiple-step operation with a compiler. You type in your program using a text editor program or word processor and save it as an ASCII (non-document) disk file. Then you run the compiler, which reads in your program file, "interprets" it, and, ideally, generates an executable version of it as an output file. However, if there are any syntax errors (invalid statements) in the program, the compiler has no choice but to generate a listing of those errors instead. Then it's back to the editor to find the mistakes and make corrections, send the program through the compiler again, and so on until the compiler finally produces the executable program.

However, the resulting program may not run correctly. The results may not be what you wanted or, worse, since the compiled program takes over your system just like any .COM program (unlike a BASIC program, where MBASIC.COM is always in charge), your computer may lock up and refuse to acknowledge your frantic CTRL-C, forcing you to reset the system to wrench control from this program run amock.

Then it's back to the editor to try to figure out what's wrong. Maybe it will be necessary for you to insert some output statements in the program to display the values of certain variables to give you a clue as to where you went wrong in your programming. And of course before you can see those values, you have to compile the program again, and so on. In BASIC, you only had to enter PRINT A, for example, in response to the Ok prompt to see what the last value of A was.

Traditionally, this has been enough to turn most users back to BASIC, and no wonder. Developing even a simple program with a compiler could take the inexperienced programmer a long time with all the steps involved, especially with a floppy-disk based system (think of all that reading and writing the editor and compiler need to do). Plus, a good compiler frequently costs several hundred dollars, not counting the editor. BASIC probably came free with your system. Still, BASIC can be very slow and inefficient. What to do!

Enter triumphant Borland International's Turbo Pascal, which instantly silences most of the above complaints about traditional compilers. First, it has its own built-in editor, which uses WordStar commands. If you've used WordStar or NewWord, you already know how to use the Turbo editor to enter and edit your programs.

Second, the editor and compiler are all together in one program, so you can type in your program, then press CTRL-K-D to exit the editing mode (just like WordStar), then press C to initiate Turbo's high-speed compiler.

While compiling, if Turbo finds a syntax error, it displays an error message and, once the ESC key has been pressed, automatically enters the editor and positions the cursor in the line where it found the error, which can then be easily corrected. These two steps -- editing and compiling -- are then repeated until all syntax errors have been corrected. In this sense Turbo is like traditional compilers. However, you don't have to switch between the editor and compiler programs. This is a big time-saver.

Once a program has compiled correctly, you can try running it immediately, without leaving Turbo. That's because unless instructed otherwise (with a compiler option), Turbo saves the compiled instructions in memory instead of in a .COM file. These instructions in memory can be executed without exiting Turbo. If an error is encountered while running the program, Turbo is right there just like an interpreter to step in, take charge, and return control to the editor where, once again, the cursor is positioned in the line where the execution or "run-time" error occurred. Pretty nifty, eh? There's more.

Once your program is running properly, you can select the Turbo option to compile the program but this time generate a .COM file. This .COM file can then be executed from CP/M just like any program, without requiring either Turbo or the source code on the disk.

With Turbo Pascal, you get the advantages of both an interpreter (convenience, ease of use, built-in editor, quick program development, security) and a compiler (power, speed, efficiency, and special features only compilers can provide), all for \$49.95. It's no wonder that Borland sold 150,000 copies of Turbo in the first year, surely an all-time record of some sort.

Plus, consider the extras that Turbo Pascal gives you if you should get serious about programming. First, there's a version of Turbo for almost all microcomputers running CP/M, MS-DOS, or PC-DOS. If you can transfer your source file (via a program like Uniform) to another system that has Turbo, you'll probably be able to compile it easily with few if any changes.

Second, Borland offers another great \$49.95 package for the serious Turbo programmer: the Turbo Toolbox. These programming "tools" allow you to do superfast sorting in your programs, for example, but without needing to write the sorting routine yourself. You can also write your own database programs, without needing to write the actual file management routines. In addition, you can generate installation programs for the programs you write, allowing computers with the same operating system but different terminals to run your programs without needing to recompile them on the new systems. There are also some sample programs that come with the Toolbox which show you how these "tools" can be used. (Turbo itself includes the source code to a simple spreadsheet program which you can compile and run, even modify. You can look through the thirty-odd pages of code for examples and illustrations of how the "pros" do it.)

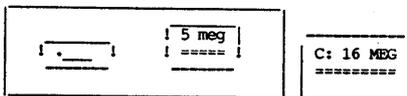
In summary, Turbo Pascal offers nearly everyone the potential to write powerful programs. Turbo runs swell on the entire Micro Decision line.

(Ed.'s note: This article is reprinted here with the permission of the author. Readers interested in Turbo Pascal should take note of the special price offer available through Bamdua, see page 31 of this issue).



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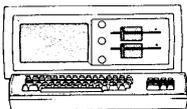
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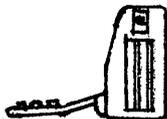
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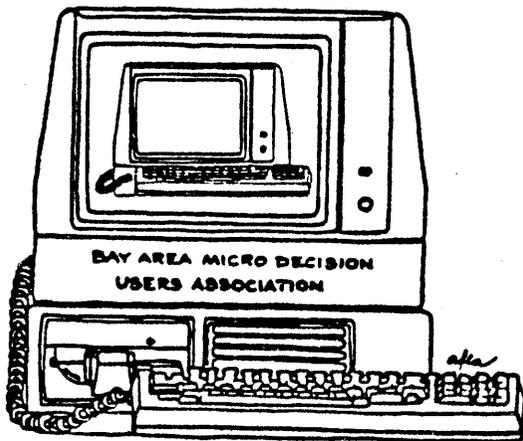
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