

ABU \$10.00

# MEDIA

## Pascal & JLAB



*Computer Graphic Design by  
Catherine Del Tito*

Number  
**27**  
November 83

ISSN 0739-1900

# SUBVERSIVE SOFTWARE

*So cheap and useful  
it's...dangerous!*



A radical idea in software development.  
Useful Pascal programs, with:

- Complete annotated source listings;
- Disk(s) with source code and compiled code;
- User manual;
- Complete programmer documentation describing data structures and algorithms; and giving suggestions for modification.

Modify them, include them in your own systems, or simply use them.

A growing library of software tools you'll find hard to resist.

## SUBVERSIVE SOFTWARE

### TPL

The Text Processing Language. A text-file runoff program consisting of a set of text-processing primitive commands from which more complex commands (macros) can be built (as in Logo). Features include:

- Complete customization of text processing through macro definition and expansion, looping structures, and conditional statements;
- Adapts to any printer;
- Pagination;
- Text justification and centering;
- Indexing and tables of contents;
- Superscripts and subscripts;
- Bold and underlining;
- Multiple headers and footers;
- End notes and footnotes;
- Widow and orphan suppression;
- Floating tables and 'keeps.'

**\$50**

## SUBVERSIVE SOFTWARE

### DBX

Blocked Keyed Data Access Module. Maintains disk files of keyed data. Can be used for bibliographies, glossaries, multi-key data base construction, and many other applications.

- Variable-length keys;
- Variable-length data;
- Sequential access and rapid keyed access;
- Single disk access per operation (store, find, delete) in most cases;
- Multiple files;
- Dynamic memory allocation for RAM-resident index and current "page" of entries;
- Includes demonstration program and testbed program.

**\$50**

## SUBVERSIVE SOFTWARE

### PDMS

The Pascal Data Management System. A user-oriented data management system in which numeric and alphanumeric data are stored in tables with named columns and numbered rows. Currently being used for dozens of different kinds of business and scientific applications, from inventory management to laboratory data analysis. Includes over 20 Pascal programs; more than 10,000 lines of code. Main features include:

- Maximum of 32,767 rows per file;
- Maximum of 400 characters per row, and 40 columns per table;
- Full-screen editing of rows and columns, with scrolling, windowing, global search replace, and other editing features;
- Sorting, copying, merging, and reducing routines;
- Mailing label program;
- Reporting program generates reports with control breaks, totals and subtotals, and selects rows by field value; many other reporting features;
- Cross-tabulation, correlations, and multiple regression;
- Video-display-handling module;
- Disk-file-handling module.

Many other features. UCSD formats only.

**\$250**

## SUBVERSIVE SOFTWARE

### ZED

Full-screen text editor; designed to be used either with TPL or by itself.

- Full cursor control;
- Insert mode with word wrap;
- 'Paint' mode;
- Single-keystroke or dual-keystroke commands;
- Command synonyms;
- Global search and replace;
- Block move, block copy, and block delete.

**\$50**

## SUBVERSIVE SOFTWARE

### SCINTILLA

A log logit curve fitting program for radio-immunologic data; must be used with PDMS (described above).

- Multiple protocol files;
- Quality control files;
- Four-parameter non-linear curve fit.

UCSD formats only.

**\$250**

## SUBVERSIVE SOFTWARE

### CHROME

Chromatography data analysis program:

- Graphic display of analog data;
- Panning and zooming;
- Automatic peak-finding and baseline calculation;
- Full interactive peak editing;
- Computation of peak areas;
- Strip charts on C. Itoh and EPSON printers.

**\$100**

## SUBVERSIVE SOFTWARE

### PLANE

Planimetry program:

- Bit-pad entry of cross sections;
- Real-time turtlegraphics display;
- Calculation of areas;
- Saves calculations to text file.

**\$100**

## SUBVERSIVE SOFTWARE

### MINT

A terminal emulation program for communication between computers of any size.

- User-configurable uploading and downloading of files;
- X-ON/X-OFF and EOB/ACK protocols;
- Interrupt-driven serial input (for Prometheus Versacard in Apple II);
- Printer-logging.

**\$50**

For more information, call 919-942-1411. To order, use form below or call our toll-free number: 1-800-X-PASCAL.

Check appropriate boxes:

(In N.C. use 1-800-642-0949)

RMAT	PRODUCT	PRICE
8" UCSD SSSD	DBX	\$ 50
5 1/4" Apple Pascal	PDMS	\$250
5 1/4" UCSD IBM PC 320k	TPL	\$ 50
8" CP/M SSSD	ZED	\$ 50
5 1/4" IBM MS-DOS	MINT	\$ 50
5 1/4" CP/M Osborne	SCINTILLA	\$250
	CHROME	\$100
	PLANE	\$100

Name \_\_\_\_\_

Address \_\_\_\_\_

MasterCard

VISA

Check

C.O.D.

(Please include card # and expiration date)



**SUBVERSIVE SOFTWARE**

A division of Pascal & Associates.

135 East Rosemary St., Chapel Hill, NC 27514

---

---

# MODULA-2 Pascal & Modula-2

Formerly *Pascal News*

---

---

Serving Pascal Users Group and the Modula-2 Users Group

---

November 1983

Number 27

3 — EDITORIAL

5 — OPEN FORUM

8 — Two Pascal Devices

*by Harley Flanders, Florida Atlantic University*

9 — Zuse User's Manual

*By Arthur Pyster, University of California*

33 — ANNOUNCEMENTS

37 — MODULA-2 ANNOUNCEMENTS

41 — ORDER FORMS

**About the cover:**

The cover computer graphics were created by computer artist Catherine Del Tito. The program was written for an Apple IIe and a Vectrix computer system.

---

---

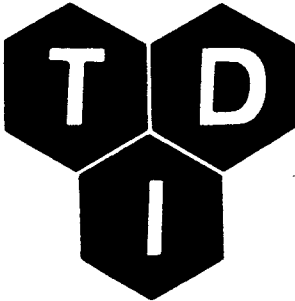
# UCSD p-SYSTEM™ with UCSD PASCAL™ FOR THE VICTOR 9000™

## Standard Features

- **System Foundation:**
  - Operating System - Single key commands
  - Filer - For file management
  - Screen Editor - Powerful text editor
  - Utility Library - Fast development tools
- **UCSD PASCAL Compiler** - Only requires 128K
- **Utilities for the Victor:**
  - Keyboard Editor - Define your own keyboard
  - Character Editor - Design character sets
  - Config - Define machine parameters
  - Diskutil - Disk copy/format
  - Remote - File porting
- **Native Code Generator** - For faster execution
- **Turtlegraphics** - 800 x 400 pixel access
- **RAMDISK Capability** - For RAM above 128K
- **Assembler** - 8086 with macros
- **Documentation:**
  - Owner's Manual
  - User Manual/Supplement
  - Architecture Guide
  - Installation Guide Excerpts
  - DEMODOC diskette - On line tutorial for p-System overview

## Optional Features

- **Hard Disk Support Software** - For internal hard disk
- **FORTRAN 77 Compiler** - Only requires 128K
- **BASIC Compiler**
- **8087 Support Software**
- **Advanced Systems Editor**
- **Xenofile™** - Convert CP/M files
- **Applications Software** (call for information)



### TDI SYSTEMS, INC.

620 Hungerford Drive  
Suite 33  
Rockville, Maryland 20850  
(301) 340-8700

### TDI LIMITED

29 Alma Vale Road  
Bristol, U.K. BS8 2HL  
0272 742 796

UCSD p-SYSTEM and UCSD Pascal are trademarks of the Regents of the University of California  
Universal Operating System and Xenofile are trademarks of SofTech Microsystems, Inc.  
Victor 9000 is a trademark of Victor Technologies, Inc.

# Editor's Notes

## Announcing a \$10,000 Contest for the Best Article or Application Voted by the Members

Dear Member:

By now those of you in the United States have received a questionnaire and announcement concerning "Pascal News." The reader survey is a very important element in our ability to contain the cost of this newsletter. When we solicit advertisers, they want to know about the members: Who we are, What we do, How much we spend. I realize these are very probing questions and you may feel they are too personal. To separate your name from your information, the subscription card is a self mailer and the return envelope for the survey will assure your anonymity. Thank you in advance for your help.

Let me explain the announcement of our name change from "Pascal News" to "Pascal & Modula2." Pascal has encouraged and endorsed rational programming. The language aids in the segmentation of a job into small parts through procedures and functions. I have enjoyed learning and using this language, but Pascal does have limitations.

Many limitations are part of the design of a teaching language. Pascal is a very nice base, a core, to which extensions have been added by every implementor. We have accepted this and published reports of large extension packages, UCSD Pascal, Concurrent Pascal and Path Pascal.

These extensions were added to a language created for teaching programming principles. This design goal allows a general purpose language, but not an all purpose language. Nicklaus Wirth recognized these limitations and created a language that would contain Pascal's good features and satisfy the goal of an all purpose language.

Modula-2, created in 1977, is that language. In this issue, you will read Modula-2 product announcements. In these announcements, and in other articles, claims are made that Pascal is finished, that Modula-2 should replace Pascal in all cases. Maybe. I believe Pascal can and should remain in the position for which it was designed. The premier teaching language is

Pascal. The easy transition from Pascal to Modula-2 makes Modula-2 an excellent second year language. Restrictions are necessary in the introduction to programming and Modula-2's flexibility does not focus a student to basic principles.

Of course I may be "all wet," but I believe Pascal should remain.

Pascal's teaching tool strength, Modula-2's all purpose ability, and the relatively painless transition between them make Pascal and Modula-2 proper subjects for the Pascal Users Group. Pascal News should reflect this wider interest in content and name. The new name, "Pascal & Modula2," keeps Pascal as the first name and can be found in the same place in periodical indices as "Pascal News." This should make the libraries happy.

The new logo places Pascal within Modula2, a reference to Modula-2's ability for operating system programming, above Pascal, and its ability for machine specific programming, below Pascal. I hope you welcome the change and contribute to the discussion and promotion.

This brings me to the contest for \$10,000. It really is a promotion. There are many ways to promote this newsletter and I have tried a few. One way is to keep the members we have now. I have promised four issues per year and this is the fourth of 1983. A renewal notice was sent out in January and I thank you for your subscription. In October the reader survey and subscription card were mailed and I hope you renew promptly. I placed a small ad in "PC" magazine. It is in their Blue Book section and will run from September 1983 through March 1984 and should attract new members. Announcement of our name change and subscription information was sent to fifteen magazines. Unfortunately there are many Pascalers who do not know of the Pascal Users Group.

I am now very familiar with the costs of this newsletter and can say that income closely matches costs. I also know that if membership exceeds 5,000, we will have a surplus. What would we do with this money? Well, I propose that it be used for a promotion, and I cannot

think of a better promotion than to vote for the best article or application published in "Pascal & Modula2."

I do not know whether the prize will be winner take all or first, second and third place division of the money. Your letters will help me form the rules.

The first rule is we must have 5000 members. Fewer members and we cannot afford this contest.

Now, you may recognize a little circularity here. The promotion attracts members and increased membership allows the promotion. Because of my other responsibilities (wife, home, job and country) I need your help to announce this contest in all quarters. If all 4000 members will send one letter (i.e. to friends, to users groups, to fellow students, to magazines) to announce this contest and one new member joins per letter, well, I think you get the idea.

Rule number two—all contestants must be members.

One more idea. If this contest generates enough material and money the newsletter will be published more often. Please send your ideas.

# Editor's Notes

## Pascal at Work

## This Issue

A typesetting program called TeX, created by Donald Knuth, is available for the cost of distribution. 15,000 lines of Pascal code puts TeX in the nontrivial category.

Basic information is available from two sources. The book *"TeX and METAFONT"* is available for \$12. Digital Press, 12A Esquire Road, North Billerica, MA 01862. A new book, *"TeX Book,"* should be in print by the end of 1983 from Addison-Wesley.

Continuing information is provided by the TeX Users Group (TUG). Membership is \$30. TeX Users Group, c/o American Mathematical Society, PO Box 1571 Annex Station, Providence, Rhode Island 02901, USA.

"Small Talk," a language from the Xerox Palo Alto Research Center was revealed in the August 1981 issue of *"Byte"* magazine. The Small Talk virtual machine, a software interface to the real machine, was given to four companies. They agreed to debug the virtual machine and share information.

I found it interesting that Tektronics implemented the virtual machine in Pascal. I understand that Tektronics internal programming uses Pascal or Modula-2. The papers regarding the Small Talk research are assembled in the book *"Small Talk-80 Bits of History, Words of Advice."* This book and *"Small Talk-80 The Language and its Implementation"* are available from Addison-Wesley.

Andy Michel informs me of a version of "C," the Bell Labs language implemented in Pascal. Very interesting.

A large part of this issue is devoted to a compiler creator. With a language specification this program will write the compiler. I have been told this program is very valuable. Using it, a contract for a compiler was satisfied and a handsome profit gained. (Sounds good to me.)

Robert Gustafson in a letter complains about the typesetting of this newsletter. Expense, time and typographical errors are his concern. When printing more than 2500 copies, typesetting reduces overall expenses. Typesetting consumes 3 weeks' time, not an unreasonable amount for a quarterly.

Typographical errors are a problem and programs are photographed from originals to avoid them. A better way to assure correct information and dark, clean type is to capture the author's original keystrokes. Floppy disks and mag tape will do the job, but I would have to convert the many magnetic formats to one the typesetter could use.

Computer networks may be a better solution. Networks force all submissions to a common format. From this, the typesetter will make only one conversion to his format. If there is a consensus, I will establish a bulletin board and file system on the most popular network.

Please send your ideas. This is a one-man operation and I appreciate and need your help. I hope you enjoy this issue.

Charlie



2903 Huntington Road  
Cleveland, Ohio 44120

Publisher and Editor:  
Charles Gaffney

General Consultants:  
Studio Graphics Advertising

Production Manager:  
Spence Coghlan

National Sales Representative:  
John Bachmann

The *Pascal & Modula-2* is published for the Pascal Users Group and Modula-2 Users Group, 2903 Huntington Rd., Cleveland, Ohio 44120. *Pascal & Modula 2* is a direct benefit of membership.

Membership dues are \$25.00 U.S. regular, other forms of membership please inquire. Inquiries regarding membership should be sent to the above address. Magazine correspondence and advertising should be sent to the editor at the aforementioned address. Advertising rates are also available from the above address.

July 5, 1983

# Open Forum

August 22, 1983

Dear Charlie:

I have been a subscriber to *Pascal News* for a long time. According to the date on my mailing label, it looks like I will continue to be a subscriber well into the distant (85) future.

I agree with many of the notes published in *PN #26* concerning your contributions to the well being of *Pascal News*, particularly the general management and timely publication.

However, I believe that *PN* is doomed to die because of one change you have made. Previously, the magazine was printed using the original letters submitted by *PN* correspondents. This was an inexpensive method of getting the information out to the readers. Your current system of rekeyboarding all of the correspondence can only be costing you dollars without increasing the utility of the information. Also, as people decide they can do without *PN* for \$25/year, your circulation will decrease. One of the previous attractions of *PN* was that since it was so cheap, it reached everyone. A reduced circulation will cause contributors to look for other distribution media. I realize you are saving money on postage, but since *PN* is sent out bulk rate, the savings are only a small fraction of the cost of typesetting. Since these typesetting costs are the same whether you send out 1 copy or 3000 copies, I predict that you will not be able to compete with other publications in the field and *PN* will die.

If you return to direct printing of correspondent copy you will be in good company. The DECUS special interest group newsletters (RSX SIG for example) are printed from yechy LA36 printer copy. I read them cover to cover as soon as they arrive. There are also a lot of expensive stock market newsletters which are printed from typewriter copy. These sell for big bucks because the buyers are interested in TIMELY information, not typography and art work suitable only for decorating a coffee table.

By concentrating on quick publication, I believe you will find advertisers willing to pay for space in *PN*. Also, when it comes to selling advertising space, 3000 subscribers are much better than 300! Another important criterion for an advertiser is knowing that what is sent to you will appear unchanged in the publication.

I have noticed that there are a number of typographical errors in the typeset issues of *PN*. These are inevitable in a keyed-once, proof-read-once publication (I know the statistics, one of our programming systems typesets approximately 40% of the municipal bond issues in the U.S. Errors here are a no-no. As a consequence, we have done quite a bit with automatic proofreading and word processor telecommunications). If you use advertiser copy directly, there can be no problems later with omissions of important parts of the copy or inadvertent changes to prices, etc.

You might consider including a questionnaire in the next issue of *PN*. I'm sure that the majority of your current subscribers would be much more enthusiastic about paying \$9/year for the latest information from your correspondents and advertisers printed "as is" than \$25/year for the present "remassaged" format. If you choose an even lower price, advertisers will pay more for the resulting increased circulation. Simple economics!

Sincerely,

Robert D. Gustafson  
President  
Simulation Specialists Inc.  
609 West Stratford Place  
Chicago, IL 60657

June 29, 1983

Dear Editor:

I enclose a short article, *Two Pascal Devices*, for publication in *Pascal News*. I shall appreciate your acknowledgement and, if you use the article, a copy of the issue in which it is printed.

Sincerely yours,

Harley Flanders  
Professor of Mathematics  
Florida Atlantic University  
Boca Raton, FL 33431

P.S. May I humbly suggest that you do not print the output of line printers or dot matrix printers. It is just too hard to read.

Dear Mr. News:

This is to request address correction from that found on the label:

Jeff Davis [81]  
135 Turtle Creek  
#1 Roper Mt. Rd.  
Greenville, SC 29603  
to the following:  
Jeff Davis  
6549 Quiet Hours Apt. #201  
Columbia, MD 21045

I am entering this using an editor found in "Software Tools in Pascal," one of the best books on toolbuilding I've ever read, and printing out using a copy of "Prose" from an early copy of *Pascal News* recompiled on an Apple III! As you see, my interest is in learning by building tools in Pascal.

By the way, there is a local bulletin Board system (my next tool may be a spelling checker!) called Magus which is actually an operating system written in Pascal by Craig Vaughn that is worthy of note. I'll suggest that he submit an article describing it and see what his reaction is.

As a last comment, I had been out of the country for a few years and only recently re-subscribed. How's Modula-2 doing in the states? I've ordered their documentation but version for my computer (Apple III) somewhat tardy.

Thanks and it's great to be back in touch with Pascal reality again!

Sincerely,  
Jeff Davis

May 31, 1983

Dear Mr. Gaffney:

We have purchased a Motorola EXORciser development system for developing 6809 based products. We contracted to an outside vendor for the initial software development on a new product. All software was written in HP64000 Pascal. We will be doing all software maintenance and enhancement in house and we are reluctant to do this in assembly language. Therefore, I am attempting to find a Pascal compiler to run on the 6809 EXORciser which is as compatible as possible with the HP Pascal. I would appreciate any help you can give me on this.

We also have a Texas Instruments DS 990 minicomputer with a Pascal compiler which we would like to use for electrical and electronic engineering support and development. Any information on available Pascal electronics packages would be helpful.

Very truly yours,

MILLER Electric Mfg. Co.  
Bruce A. Casner  
Project Engineer  
P.O. Box 1079  
Appleton, WI 54912

