

Pascal News

December, 1978 **NUMBER 13** (oh, how unlucky...)

COMMUNICATIONS ABOUT THE PROGRAMMING LANGUAGE PASCAL BY PASCALERS

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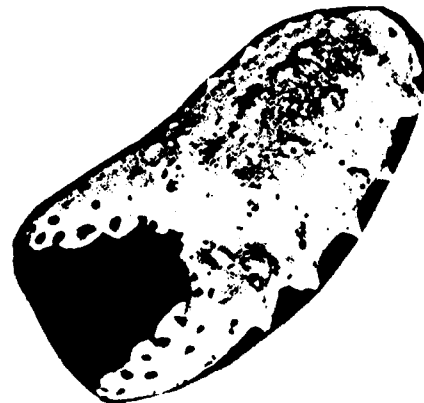
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POLICY: PASCAL NEWS (78/10/01)

- * Pascal News is the official but informal publication of the User's Group.

Pascal News contains all we (the editors) know about Pascal; we use it as the vehicle to answer all inquiries because our physical energy and resources for answering individual requests are finite. As PUG grows, we unfortunately succumb to the reality of (1) having to insist that people who need to know "about Pascal" join PUG and read Pascal News - that is why we spend time to produce it! and (2) refusing to return phone calls or answer letters full of questions - we will pass the questions on to the readership of Pascal News. Please understand what the collective effect of individual inquiries has at the "concentrators" (our phones and mailboxes). We are trying honestly to say: "we cannot promise more than we can do."

- * An attempt is made to produce Pascal News 3 or 4 times during an academic year from July 1 to June 30; usually September, November, February, and May.
- * ALL THE NEWS THAT FITS, WE PRINT. Please send material (brevity is a virtue) for Pascal News single-spaced and camera-ready (use dark ribbon and 18.5 cm lines!
- * Remember: ALL LETTERS TO US WILL BE PRINTED UNLESS THEY CONTAIN A REQUEST TO THE CONTRARY.
- * Pascal News is divided into flexible sections:

POLICY - tries to explain the way we do things (ALL PURPOSE COUPON, etc.).

EDITOR'S CONTRIBUTION - passes along the opinion and point of view of the editor together with changes in the mechanics of PUG operation, etc.

HERE AND THERE WITH PASCAL - presents news from people, conference announcements and reports, new books and articles (including reviews), notices of Pascal in the news, history, membership rosters, etc.

APPLICATIONS - presents and documents source programs written in Pascal for various algorithms, and software tools for a Pascal environment; news of significant applications programs. Also critiques regarding program/algorithm certification, performance, standards conformance, style, output convenience, and general design.

ARTICLES - contains formal, submitted contributions (such as Pascal philosophy, use of Pascal as a teaching tool, use of Pascal at different computer installations, how to promote Pascal, etc.)

OPEN FORUM FOR MEMBERS - contains short, informal correspondence among members which is of interest to the readership of Pascal News.

IMPLEMENTATION NOTES - reports news of Pascal implementations: contacts for maintainers, implementors, distributors, and documentors of various implementations as well as where to send bug reports. Qualitative and quantitative descriptions and comparisons of various implementations are publicized. Sections contain information about Portable Pascals, Pascal Variants, Feature-Implementation Notes, and Machine-Dependent Implementations.

- * Volunteer editors are (addresses in the respective sections of Pascal News):

Andy Mickel - editor

Jim Miner, Tim Bonham, and Scott Jameson - Implementation Notes editors

Sara Graffunder and Tim Hoffmann - Here and There editors

Rich Stevens - Books and Articles editor

Rich Cichelli - Applications editor

Tony Addyman and Rick Shaw - Standards editors

Scott Bertilson, John Easton, Steve Reisman, and Kay Holleman - Tasks editors

PASCAL USER'S GROUP

USER'S
GROUP

ALL-PURPOSE COUPON

(78/10/01)

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// Please enter me as a new member of the PASCAL USER'S GROUP for ___ Academic year(s) ending June 30, _____ (not past 1982). I shall receive all the issues of Pascal News for each year. Enclosed please find _____. (* Please see the POLICY section on the reverse side for prices and if you are joining from overseas, check for a PUG "regional representative." *)

// Please renew my membership in PASCAL USER'S GROUP for ___ Academic year(s) ending June 30, _____ (not past 1982). Enclosed please find _____.

// Please send a copy of Pascal News Number(s) _____. (* See the Pascal News POLICY section on the reverse side for prices and issues available. *)

// My new ^{address} _{phone} is printed below. Please use it from now on. I'll enclose an old mailing label if I can find one.

(* The U.S. Postal Service does not

// You messed up my ^{address} _{phone}. See below. forward Pascal News. *)

// Enclosed please find a contribution (such as what we are doing with Pascal at our computer installation), idea, article, or opinion which I wish to submit for publication in the next issue of Pascal News. (* Please send bug reports to the maintainer of the appropriate implementation listed in the Pascal News IMPLEMENTATION NOTES section. *)

// None of the above. _____

Other comments: From: name _____

mailing address _____

phone _____

computer system(s) _____

date _____

(* Your phone number aids communication with other PUG members. *)

JOINING PASCAL USER'S GROUP?

- membership is open to anyone: particularly the Pascal user, teacher, maintainer, implementor, distributor, or just plain fan.
- please enclose the proper prepayment (checks payable to "Pascal User's Group"); we will not bill you.
- please do not send us purchase orders; we cannot endure the paper work! (If you are trying to get your organization to pay for your membership, think of the cost of paperwork involved for such a small sum as a PUG membership!)
- when you join PUG anytime within an academic year: July 1 to June 30, you will receive all issues of Pascal News for that year unless you request otherwise.
- please remember that PUG is run by volunteers who don't consider themselves in the "publishing business." We produce Pascal News as a means toward the end of promoting Pascal and communicating news of events surrounding Pascal to persons interested in Pascal. We are simply interested in the news ourselves and prefer to share it through Pascal News, rather than having to answer individually every letter and phone call. We desire to minimize paperwork, because we have other work to do.

- American Region (North and South America): Join through PUG(USA). Send \$6.00 per year to the address on the reverse side. International telephone: 1-612-376-7290.

- European Region (Europe, North Africa, Western and Central Asia): Join through PUG(UK). Send £4.00 per year to: Pascal Users' Group/ c/o Computer Studies Group/ Mathematics Department/ The University/ Southampton SO9 5NH/ United Kingdom. International telephone: 44-703-559122 x700.

- Australasian Region (Australia, East Asia -incl. Japan): Join through PUG(AUS). Send \$A8.00 per year to: Pascal Users Group/ c/o Arthur Sale/ Dept. of Information Science/ University of Tasmania/ Box 252C GPO/ Hobart, Tasmania 7001/ Australia. International Telephone: 61-02-23 0561.

PUG(USA) produces Pascal News and keeps all mailing addresses on a common list. Regional representatives collect memberships from their regions as a service, and they reprint and distribute Pascal News using a proof copy and mailing labels sent from PUG(USA). Persons in the Australasian and European Regions must join through their regional representatives. People in other places can join through PUG(USA).

RENEWING? (Costs the same as joining.)

- please renew early (before August) and please write us a line or two to tell us what you are doing with Pascal, and tell us what you think of PUG and Pascal News to help keep us honest. Renewing for more than one year saves us time.

ORDERING BACKISSUES OR EXTRA ISSUES?

- our unusual policy of automatically sending all issues of Pascal News to anyone who joins within an academic year (July 1 to June 30) means that we eliminate many requests for backissues ahead of time, and we don't have to reprint important information in every issue--especially about Pascal implementations!
- Issues 1, 2, 3, and 4 (January, 1974 - August, 1976) are out of print.
- Issues 5, 6, 7, and 8 (September, 1976 - May, 1977) are out of print.
(A few copies of issue 8 remain at PUG(UK) available for £2 each.)
- Issues 9, 10, 11, and 12 (September, 1977 - June, 1978) are available from PUG(USA) all for \$10 and from PUG(AUS) all for \$A10.
- extra single copies of new issues (current academic year) are:
\$3 each - PUG(USA); £2 each - PUG(UK); and \$A3 each - PUG(AUS).

SENDING MATERIAL FOR PUBLICATION?

- check the addresses for specific editors in Pascal News. Your experiences with Pascal (teaching and otherwise), ideas, letters, opinions, notices, news, articles, conference announcements, reports, implementation information, applications, etc. are welcome. "All The News That Fits, We Print." Please send material single-spaced and in camera-ready (use a dark ribbon and lines 18.5 cm wide) form.
- remember: All letters to us will be printed unless they contain a request to the contrary.

MISCELLANEOUS INQUIRIES?

- Please remember that we will use Pascal News as the medium to answer all inquiries, and we regret to be unable to answer individual requests.



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(* This is going to be a long column. I apologize, but many important things need to be said. The future of PUG is one of them! *)

I would like to thank everyone who has helped with Pascal User's Group and Pascal News. Three far-sighted individuals to whom we owe special thanks are close by (at the University of Minnesota). Pete Patton is our Computer Center director and Larry Liddiard is our associate director for systems. Phil Voxland is the director of the Social Science Research Facilities Center. Their encouragement and moral support gave us the chance to see Pascal through to its widespread acceptance through the medium of Pascal News.

O. FORTRAN

Being a member (just joking) of ACS and SHAFT (American COBOL Society--dedicated to the elimination of COBOL in our lifetime--and the Society to Help Abolish FORTRAN Teaching, see PUGN #5) I've always wanted to write a short essay like David Barron wrote below. I'd like to add that if the new FORTRAN compilers are written in assembler like most of the old ones, then we should see instability as well. Pascal may make its move on the large machines especially at Universities!

FORTRAN - The End at Last?

D.W. Barron

The apparent indestructibility of FORTRAN as the preferred programming language of users in the physical sciences has long been a discouragement to those of us who try to spread the use of Pascal. We have thought long and hard about ways to convert the FORTRAN faithful, and concluded regretfully that it can't be done. Readers of Pascal News probably don't follow the activities of the FORTRAN Standards Committee, and so will be unaware of recent developments which indicate that the Standards Committee is doing the job for us.

The specification of FORTRAN 77 has recently been published - a hotpotch of "features" heaped indiscriminately on the existing FORTRAN language in a way that is not downwards compatible. The Committee has already started work on FORTRAN 82 and has published a draft list of features of the "central module". Since such sacred things as C in column 1 for comments, continuation in column 6 and statements starting in column 7 are apparently to go, the result will not even bear a superficial resemblance to the FORTRAN that present day users know and love.

If you ask a scientist why he uses FORTRAN, his answer will include some or all of the following reasons

- i) it is efficient
- ii) it is simple
- iii) it is universal.

Editor's Contribution

The first reason is a red-herring - Pascal is probably more efficient than FORTRAN on many computers, but the typical FORTRAN user has been brainwashed into believing that nothing can be more efficient than FORTRAN. The simplicity of FORTRAN is superficial - true simplicity comes from logical cohesion. Certainly, FORTRAN 77 can't be described as simple: "feature-oriented" designs rarely are. The really strong card in the FORTRAN pack is its universality. Every computer centre has a FORTRAN compiler, they are reasonably compatible, and the scientist can move his FORTRAN programs from place to place with relative ease. The reason for this is that FORTRAN has been around for a long time, and has been stable for a long time. It is this stability that the new Standards are destroying. Now, FORTRAN may be ANSI or '77. '82 lurks in the wings. These new versions are appreciably different from the old, so FORTRAN loses its identity. What gives a language an identity? Partly its structure, mainly its stability. The FORTRAN philosophy seems to be that FORTRAN is anything to which a particular committee chooses to give that name: at a stroke they have destroyed FORTRAN's most valuable asset.

Whilst rejoicing over this development, we should not lose sight of the moral for Pascal. When it comes to determining the usage of a language, having a good language helps, but most important is to have a stable, widely available language. That way we can reach the situation where everyone knows Pascal and everyone can use Pascal. If we want Pascal to become a universal language, then we must deny ourselves the indulgence of changing it.

I. Recent Events (at least since PUGN #12)

A lot of people responded positively to the new Applications section started in #12. I hope this issue's Applications section is just as worthy. There were also a few comments in favor of regularly featuring "Pascal in Teaching."

It's been quite a while since #12 appeared and even though we have been flooded with renewals and the enthusiastic remarks of "keep-up-the-good-work!", here I am putting #13 out very late. I'm sorry. "13" is turning out to be unlucky indeed. Please see part II.

Part of the reason we're late is that it is hard to keep up with the swirl of events surrounding Pascal. So...

case ImportantEvent of

Employment:

Please see the letter from Chuck Beaugard in the Open Forum section. People have been calling me constantly on the phone for 6 months now trying to find Pascal people to fill jobs they offer. So get the word out: IF YOU KNOW Pascal YOU CAN EASILY FIND A JOB. Down goes another myth! (But, wow, it has been a struggle!)

ConcurrentPascal:

Per Brinch Hansen is trying to survey Concurrent Pascal users. Please respond to his letter in the Implementation Notes section before February 28.

NASA:

The United States National Aeronautics and Space Administration (NASA) is making a strong commitment to Pascal. NASA Langley, NASA Ames, and NASA in Houston are all concerned with reliable software in deep-space probes (such as the upcoming Galileo project). PUG member John Knight (who is the CDC-Star Pascal implementor and convenor of the joint SIGPLAN/PUG session at ACM--see below) has been keeping us informed. Thanks, John!

ConventionalizedExtensions:

In #12 we described the formation of an International Working Group on Pascal Extensions which is supposed to decide on a handful of conventionalized extensions. Please see the section in Open Forum on Standards.

Editor's Contribution

Standards:

The British Standards Institute Working Group (DPS/13/4) work on a Pascal standard (see PUGN #14 for a working draft) should help lay to rest much of the standards controversy. A revised version of the document will be accepted by ISO (and therefore ANSI in the United States) in mid-1979. Politics with standards unfortunately keeps growing as knowledge and use of Pascal grows. And unfortunately ANSI has decided to refer Pascal standards business to a subcommittee called X3J9. See Standards in Open Forum.

PascalMachines:

One of our fondest wishes has been that hardware manufacturers help bridge the gap to Pascal by building machines with friendlier architectures. In fact, long-time PUG member Judy Mullins Bishop wrote her PhD thesis under Prof. David Barron investigating just such a Pascal architecture, which among other things, would require minimal storage requirements for object code. Some people keep saying that BASIC (BASICK) exists on small personal computers and that Pascal implementations are too big. The fact is that the popular small personal computers are now based on microprocessors such as the 8080, Z-80, 6800, and 6502 with dinosaur architectures (and with memories too small to do much useful anyway!). Thus a Pascal implementation is at a disadvantage having to emulate actions that should be performed in the hardware to begin with, and therefore consuming more code space. The significant aspect of the widely-known UCSD (University of Calif. at San Diego) Pascal project was to dispel the myth that Pascal couldn't run on a micro. However, in order to be small, this implementation had to be kept interpretive (there exist several cross-compilers of "hard code" for these micros from other sources). Also because UCSD Pascal is a Pascal-P derivative, the P-code had to be modified and packed (frequency-encoded). The result is slower execution.

But, recently, Western Digital built an inexpensive chip-set expressly for running the modified UCSD P-code, and a speedup of 5 or 10 is being realized. National Semiconductor will probably do the job even better in a few months by building something closer to standard P-code that will execute much faster. They have had something similar under wraps for over two years! After being disappointed by Zilog and the Z-8000 a year ago, it is good to see Western Digital take the courageous first step, made possible by the people at UCSD. (Unfortunately we have been receiving altogether too many reports from users that UCSD Pascal is not as stable as it should be, and that its non-standard extensions are particularly lacking in robustness. For an example, see the Implementation Notes section.)

PascalUsage:

The Western Digital product brochure for its Pascal "Microengine" apparently misquoted Ken Bowles of UCSD concerning: "there are more users of UCSD's Pascal today than users of all other versions combined." This patently false statement has caused Ken some embarrassment, and although it's hard to get an exact figure, I'd estimate that nearly 8% (1 in 12) of all Pascal usage is on UCSD Pascal. Most usage is on PDP-11's (non-UCSD) followed by IBM 370's followed by CDC machines and DEC 10's and 20's. To give a specific example, the venerable CDC-6000 implementation is running at over 300 (very large) sites, and at just one of them (our University of Minnesota computer center) the compiler was accessed over 272,000 times from 77/07/01 to 78/06/30 which represented a 68% increase over the previous 12 months. We have been trying to collect usage data through the checklists in the Implementation Notes section and will try to summarize them in one place in a future issue.

ExplosionInIndustryLiterature:

Byte, Electronics, Creative Computing (ROM), and others have run full-length articles on Pascal. In fact the August, 1978 Byte was almost entirely devoted to Pascal! This phenomenon is most encouraging because eventually the mainstream computer literature will have to help carry news about Pascal if it is to supplant BASIC and other crummy languages. Other computer journals (Computer World, for example) have kept Pascal in the news this last six months and we appreciate it. The only bad side effect is that the publicity has literally swamped us here at PUG central with mail and phone calls.

end (* case *) This leads to....

II. Pascal User's Group / Pascal News status

Running Out of Time

Just at the time when the mail was starting to build up last May, (it now runs between 10 and 30 pieces a day), our usually smooth-running operation became short-handed. Jim Miner started going to school full-time. Sara Graffunder delivered a 2.81 kg baby boy named David. (As an aside, Rich Stevens got married two days after Thanksgiving in November!) Not just that, but standards politics, conventionalized-extensions politics, and UCSD workshop politics all began to consume our time with very little in return (just working very hard to stay still). The cover of this issue depicts the situation.

As if that weren't all, I do have my own full-time job to do here at the University of Minnesota computer center. This summer we changed operating systems and character sets. Because I am also involved with the project to produce a new release of CDC-6000 Pascal, I was unable to work on PUG much at all this summer. Our mail went unanswered, and I apologize.

New Members

This is the first academic year (July, 1978 to June, 1979) for almost 1000 new members, and I wanted to assure them good service and information which would tell them what our style is like. But after catching up with the mail in October (and returning all \$4 renewals arriving after August 1 thus allowing a 1-month grace period) and falling behind again, I think I have disappointed quite a few people and I'm sorry. We have stated that we are all-volunteer, and that we have little or no secretarial help, but you new members have yet to read this sentence because you have received nothing from us until now! I urge new members to get back issues from last year--see the section on back issues in Here and There.

Deadlines

We have received some sharp criticism from overseas PUG members (who, by the way contribute most of the material for publication!) about the publications deadlines for Pascal News. The fact is that we had no deadlines during 76-77 (issues 5-8) and everything went well. When we began setting deadlines in the first line of the Editor's Contribution (issues 8-12) we never actually met a single one. Because we were always late in producing an issue, overseas members often received issues after the deadline for the next issue.

Solution: let's go back to no deadlines. If you have material, simply send it in.

Confusion

Our mailing list has never been sold or given out. Any PUG members with issues of Pascal News from #9/10 onward has the mailing list, because we print the roster. We have however sent out a notice last month for the jointly-sponsored ACM SIGPLAN (Association for Computing Machinery Special Interest Group on Programming Languages)-PUG session at the national ACM '78 conference this December, and it is already causing confusion. We didn't bring all the renewals up to date, and for many people, this is the first thing to be received from us. If I were on the receiving end I would be confused too! We knew we were going to be late with this issue, and that is why we sent the notice out.

Summary

I hate to paraphrase someone like Winston Churchill, but he said that sometimes doing your best is not enough--sometimes you have to do what is required. Please read on in my open letter in the Open Forum section.

Andy
78/12/01.

