

# Pascal News

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

COMMUNICATIONS ABOUT THE PROGRAMMING LANGUAGE PASCAL BY PASCALERS

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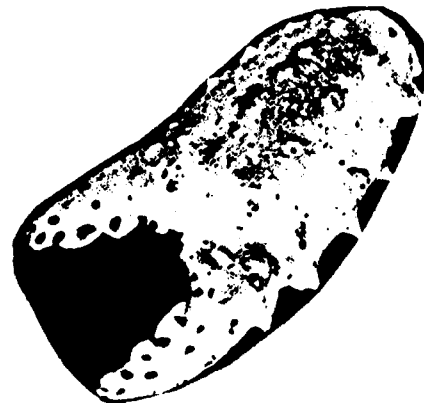
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## POLICY: PASCAL NEWS (78/10/01)

- \* 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 <sup>address</sup> <sub>phone</sub> 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 <sup>address</sup> <sub>phone</sub>. 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 Beauregard 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.

## TIDBITS

Ole Anderson, Corvallis, OR 97330: "I have a LISP interpreter that runs under the UCSD Pascal system- Would anyone be interested?" (\*78/05/19\*)

David A. Beers, Santa Ana, CA 92701: "I very much enjoy reading Pascal News. It is a refreshing exposure to rationality when compared to my job as a business systems programmer. ... I have talked to Joseph Mezzaroba of Villanova University concerning his DOS/VS version of the AAEC Pascal 8000, and will be attempting to convert it to DOS unless I hear of someone else's successful endeavors in this area." (\*78/10/25\*)

C. Y. Begandy, Aluminum Company of America, Alcoa Center, PA 15069: "I recently obtained the Pascal compiler from the DECUS library. Because of daytime core usage restrictions at our installation, it is necessary to decrease the size of the executable program. Any information you might have on other users' experiences in implementing either a smaller version of this compiler, or a segmented version would be greatly appreciated." (\*78/05/26\*)

Gerd Blanke, Eschborn, Germany: "... MODULA will be running on a Zilog MCS with 64K under Rio near the end of this year!" (\*78/10/27\*)

John H. Bolstad, Department of Mathematics, Florida State Univ, Tallahassee, FL 32306: "We use Pascal here for almost all computer science courses. The system programmers also use it." (\*78/07/11\*)

R. T. Boute, Francis Wellesplein 1, B-2000 Antwerpen Belgie: "We are interested in a special hardware support for standard and concurrent Pascal, for example microprogrammed implementations of the P machine." (\*78/10/17\*)

Robert Boylan, Metromation, Princeton, NJ 08540: "I know a PDP-11 version of Pascal is in existence, but has anyone done one for a Modcomp mini?" (\*78/07/26\*)

David C. Cline, Westboro, Mass 01581: "Pascal is attracting a lot of attention here at Data General as a takeoff point for a SIL." (\*78/05/11\*)

Dennis R. Ellis, Cray Research, Boulder, CO 80303: "I have a COPYSF (copy shifted file) implemented on a CRAY-1 written in Pascal using 11 lines of code." (\*78/08/07\*)

Larry Ellison, Computer Assisted Bible Study, Willingboro, NJ 08046: "I am serving as coordinator for a group of Bible students who are going to use Pascal on various micro-computers to assist in the study of the Bible." (\*78/08/09\*)

John Fitzsimmons, Edina, MN 55436: "It seems that every issue of PUGN has a few pleas for insertions, deletions, or things they don't like about Pascal. Did it ever occur to those of you who complain that the rest of us like the language as it is?" (\*78/06/30\*)

Lee Frank, BTI Computer Systems, Cherry Hill, NJ 08002: "... our Pascal is the systems programming language for our new BTI-8000 and all our compilers are written in it." (\*78/06/16\*)

Glen Fullmer, Tektronix Inc., Beaverton, OR 97099: "Dear Lord, won't you buy me a new programming language/ My friends all write Pascal/ I must make ammends./ P. S. We could call it 'LACSAP'." (\*78/10/31\*)

Steven J. Greenfield, Unicorn Systems Company, Los Angeles, CA 90010: "I have been using Pascal for the last six months to write an Assembler designed to generate code for any object computer. Pascal has provided a powerful method of writing a transportable piece of software." (\*78/04/25\*)

Dale H. Grit, Department of Computer Science, Colorado State University., Ft. Collins, CO 80523: "At CSU, we're using Pascal in all upper level courses... next year, the 2nd course will be Pascal." (\*78/08/10\*)

Marc Hanson, Hermosa Beach, CA 90254: "... I would appreciate learning about anyone's experiences with running Pascal on either Xerox or Honeywell equipment." (\*78/05/04\*)

Sam Hills, New Orleans, LA 70125: "I am implementing AUGMENT (from the last PN) on the DEC-10." (\*78/08/14\*)

G. Steve Hirst, Iowa City, Iowa 52240: "CONDUIT (a consortium distributing computer-based curriculum materials) is currently investigating including Pascal as a distribution language for new materials." (\*78/08/07\*)

Claes Hoienberg, University of Uppsala, Sweden: "UDAC is the computer center for the Univ. of Upsala, Sweden's biggest university, and we hope to be able to use {UCSD} Pascal for implementing a data-base management system on microcomputers." (\*78/10/06\*)

K. B. Howard, College of the Sequoias, Visalia, CA 93277: "We're interested in looking into the possibility of using Pascal (in instucting beginning programming course) for students aiming toward engineering and computer science fields, and are particularly interested in learning of sources for compilers for the language, for PDP-11, HP-3000, and/or Altair 8800 micro if possible." (\*78/09/29\*)

L. C. Hutchinson, Mentor, OH 44060: "... I would appreciate knowing if there are any Modcomp Pascal users..." (\*78/05/15\*)

Jose I. Icaza, Universidad Autonoma Metropolitana - Azcapotzalco, Mexico D.F., Mexico: "At this University, we are just starting to use Pascal and giving some optional mini-courses about it. People seem to love the language. Hopefully, soon it will replace FORTRAN as the first language students learn." (\*78/10/24\*)

Dennis Kalthofer, Philadelphia, PA 19103: "I am starting a workshop in computer science stressing the social aspects of the field. ... I plan to use Pascal as the basis for these systems and any further systems we develop, to organize our programming technique and understanding, and for teaching people about computers and programming in general, as it illustrates many important computer concepts." (\*78/07/11\*)

Richard H. Karpinski, San Francisco, CA 94114: "Request that software tools' or 'applications' solicit Pascal program modification tools, such as macro generators and programs to make names unique among the first N characters, etc. Praise for UCSD system." (\*78/04/18\*)

Tom Kelly, Downingtown, PA 19335: "With regard to 'improvements', 'extensions', etc, I wish people would engage brain before putting mouth in gear'. My (substantial) work with several Pascal compilers over past year has shown me what a fantastic job Wirth did!" (\*78/07/07\*)

Neb Lafert, Hewlett-Packard (Schweiz) AG, Geneva, Switzerland: "... we think that a good relationship should be established between our two organizations, enabling us to help every new request for Pascal in our country." (\*78/09/25\*)

Jerry LeVan, Dept Math Sc, Eastern Ky Univ, Richmond, KY 40475: "All of our CS majors will be started on Pascal. We are using OMSI's Pascal. I am reasonably happy with the implementation (it will compile and run Pascal-S)." (\*78/07/11\*)

Stephen A. Locke, Beloit Corporation/Paper Machinery Division, Beloit, WI 53511: "I am interested in Pascal for real-time control of an industrial process... Is there anyone you know working in such a direction?" (\*78/06/05\*)

Richard C. Lound, San Francisco, CA 94114: "I am an independent software consultant, primarily in communications systems. My interest in Pascal is in its applicability to use for generation of specialized message switching and front-end software." (\*78/08/02\*)

Wilf Overgaard, Worldwide Evangelization Crusade, Fort Washington, PA 19034: "Where could I locate a general ledger-bookkeeping program, in Pascal, for non-profit organization? ... Where can one find a good word processing program in Pascal?" (\*78/08/31\*)

Bill Marshall, Sanders Associates Inc., Nashua, NH 03060: "I had hoped to be the first one on my world to implement Pascal on the VAX-11/780, but discovered a group at Univ.

## Here and There With Pascal

# Here and There With Pascal

of Washington already well along toward that goal." (\*78/08/28\*)

Jim McCord, Goleta, CA 93017: "I am acting as the distributor for UCSD Pascal for hobby users of the LSI-11. Cost is \$50, of which \$35 goes to UCSD for continued work. Other \$15 pays for documentation and postage, if user sends me four floppies. (Else I will provide for \$3 each). This includes all source code for everything, including the interpreter. Anybody interested should get in touch with me (we already have 7 users)." (\*78/07/17\*)

Michael Robert Meissner, University of Minnesota, Minneapolis, MN 55455: "Everybody talks about portability of programs. This summer I ran into the portability of programmers. I found that we can all get locked into thinking and depending on special features of Pascal compilers, and have to 'relearn' Pascal whenever we switch computer systems or compilers." (\*78/10/20\*)

Anne Montgomery, Lowry AFB, CO 80230: "McDonnell Douglas has developed a CMI/CAI system here on Lowry Air Force Base called the Advanced Instructional System (AIS). The AIS, as its name implies, is used primarily for technical training. ... The system currently manages approximately 1500 students in four courses over a 12-hour production shift." (\*78/10/16\*)

Roderick Montgomery, Somerville, NJ 08876: "I am coordinating distribution of UCSD Pascal to amateurs in the Amateur Computer Group of New Jersey, largest surviving hobbyist club in U. S. September meeting of ACG-NJ will be devoted to Pascal." (\*78/07/20\*)

William Moskowitz, The California State University and Colleges, Los Angeles, CA 90036: "I might add that Pascal at CSUC has been tremendously successful. During the past twelve months we have had 68,603 accesses and usage continues to grow." (\*78/07/17\*)

David Mundie, 104-B Oakhurst Circle, Charlottesville VA 22903: "I would like to correspond with anyone having first-hand experience with the S-100 bus TI 9900 Pascal system being offered by Marinchip Systems." (\*78/10/06\*)

John E. Newton, Randolph AFB, TX 78148: "I am specifically interested in identifying members that have implemented Pascal on Burroughs 6700 hardware." (\*78/07/20\*)

Dave Peercy, BDM Corp., Albuquerque, NM 87106: "We at BDM are becoming a very interested group of Pascal users." (\*78/08/28\*)

Sergi Pokrovsky, USSR Acad. Sci., Novosibirsk, USSR: "I hope that S. Pitin of the Moscow Computing Center will shortly report to you on his (not so recent) implementation of Pascal for the BESM-6 computer." (\*78/10/31\*)

Darrell Preble, Georgia State University, Atlanta GA 30303: "GA State Univ. has converted a Pascal compiler from SUNY at Stony Brook. Originally written in XPL, it uses either of two monitors to support interactive or batch use." (\*78/09/05\*)

David Rosenboom, York University, Downsview, Toronto, Canada M3J 1P3: "My particular interest in Pascal is in obtaining or developing a compiler for use on the 16-bit Interdata machine... Do you know of anyone who has developed a Pascal system for Interdata 16-bit machines?" (\*78/09/01\*)

Axel Schreiner, University of Ulm, W-Germany: "Using (in Ulm) Torstendahl's RSX-11 Pascal (love it) and Petersen's TR440 Pascal (not quite as stable) in beginner's courses." (\*78/06/19\*)

Joseph C. Sharp, Varian, Palo Alto, CA 94303: "I will introduce Pascal to the North Star Users Group this month. A 30 minute talk is scheduled." (\*78/10/30\*)

Robert J. Siegel, Brooklyn, NY 11215: "Would like to see an article on the relationship of Pascal to ALGOL." (\*78/06/23\*)

Seymour Singer, Hughes Aircraft Co., Fullerton, CA 92634: "We have installed the SLAC-Stanford Pascal compiler on our twin Amdahl 470 computers." (\*78/07/09\*)

Jim Smith, Computer Science Dept., School of the Ozarks, Ft. Lookout, MO 65726: "We have recently implemented a Computer Science Department here at the School of the Ozarks, and there is a need to increase the software library in the computer center. We feel that Pascal would be an important language to present in the curriculum." (\*78/09/08\*)

Craig A. Snow, TRW Communications Systems and Services, San Diego, CA 92121: "We are very interested in using Pascal to implement our future software products." (\*78/05/09\*)

James A. Stark, Oakland, CA 94609: "Interactive Pascal via UNIX is way ahead of a batch compiler on UCSF's 370/148 but I have no comparison on routine production jobs on either." (\*78/07/17\*)

Ed Thorland/Walt Will, Computer Center, Luther College, Decorah, IA, 52101: "We are still looking for information on an HP3000 implementation of P-code Pascal. Also need documentation of P-code instruction-format and functions." (\*78/07/11\*)

P. J. Vanderhoff, Berkel En Rodenrijs, The Netherlands, "What happened to Stony Brook Pascal release 2?" (\*78/10/27\*)

Eiiti Wada, Division of Engineering, University of Tokyo Graduate School: "In my class, all the examples were switched to Pascal since the fall semester of 1972, and the first Pascal compiler became available in the summer of 1974. Since then at the University of Tokyo, three versions of Pascal compilers have been installed, and all the compilers are intensively used." (\*78/09/08\*)

Anna Watson, Panama City, FL 32407: "Very fascinating reading in News - must obtain magnifying glass before I go blind though." (\*78/05/15\*)

Anna Watson, Panama City, FL 32407: "Is there a Pascal for a SEL 32/75?" (\*78/10/07\*)

John West, Digital Systems Design Group, Atlanta, GA 30327: "Would like any information about latest Pascal-P implementations on Interdata 7/16, 7/32, NCR 8100, 8200." (\*78/05/01\*)

James A. Woods, Berkeley, CA 94703: "What's wrong with C?" (\*78/08/24\*)

## PASCAL IN THE NEWS

Byte, May, 1978: "Comments on Pascal, Learning How to Program, and Small Systems"; A short article by Gary A. Ford, Arizona State University, which talks about Pascal's advantages and drawbacks with regards to personal computing. "I have used Pascal for at least 95% of my own programming and I cannot recommend it too strongly."

Byte, August, 1978: "Pascal: A Structurally Strong Language"; A 6-page article describing Pascal. Procedures for infix to Polish conversion, and subsequent code generation for a hypothetical micro are listed and explained.

Byte, August, 1978: "In Praise of Pascal"; A quick survey of Pascal, with descriptions of user-defined scalar types, sets, and pointer type variables. A comparison of a Pascal program and a BASIC program to its corresponding Warnier-Orr logic diagram is given.

Byte, August, 1978: "Pascal Versus COBOL"; Ken Bowles shows how Pascal can be applied to the traditionally COBOL-infested business environment.

Byte, August, 1978: "Pascal Versus BASIC"; A comparison of a program 'MASTERMIND Codebreaker' written in both BASIC and Pascal. Mastermind is similar to the number guessing game 'BAGELS', using colored pegs instead of digits.

Byte, September, 1978: "A 'tiny' Pascal Compiler, Part 1: The P-code Interpreter"; The first in a series of articles describing a Pascal compiler written for an 8080. The first talks about parsing, and grammars, etc. Parts of the P-code interpreter are listed.

Byte, October, 1978: "A 'tiny' Pascal Compiler, Part 2: The P-compiler"; The second part of the previous, this describes the compiler portion.



Byte, November, 1978: The third part of the 'tiny' Pascal series is to be on generating executable 8080 machine code.

Computer Week, May 12, 1978: "Pascal- Everybodys Language?"; A short description of What, Where, and Why of Pascal. "Pascal is named after the 17th century French philosopher, Blaise Pascal. It is not an acronym and is written in lower case."

Computer Weekly, August 24, 1978: "GEC's Pascal"; "A Pascal compiler is being developed by General Electric Computers (GEC) for its 4000 series machines. ... will be available in 1979."

Computer Weekly, September 9, 1978: "Motorola to offer Pascal on MACS"; "Giving further credence to the view that Pascal could become the dominant high level language of microcomputing, Motorola Semiconductor has revealed that this software will be the prime language supported on its new microprocessor MACS, due to be unveiled early next year."

Computerworld, April 17, 1978: "TI adds Pascal to Mini's Repertoire"; "A Pascal software package said to be suitable for systems applications because its compiler and several software modules are themselves written in Pascal has been introduced by Texas Instruments Inc. for the firm's DS990 packaged disk-based minicomputer systems." 1 year software subscription costs \$1,500 to \$2,000.

Computerworld, April 24, 1978: "Growth in Use of Pascal called Revolutionary"; A short report, by Richard Cichelli, mentioning that Pascal is available "for the Zilog, Inc. Z80 micro to the Cray Research, Inc. Cray-1 supercomputer and for nearly everything in between." Also, it gives the addresses of the PUG and DECUS/Pascal groups.

Computerworld, May 8, 1978: "Pascal Attractive Anyway"; A Letter to the Editor from Saul Rosen, Purdue University, "Pascal is a very attractive language. Here and at many other colleges and universities, it is used extensively in computer science and computer engineering courses."

Computerworld, May 15, 1978: "Standard Pascal Compiler Runs on PDP-11's"; A description of Oregon Minicomputer Software, Inc. Pascal compiler, known as OMSI Pascal-1, which generates assembly code that can be assembled and linked with DEC system utilities. RT-11 can support this compiler.

Computerworld, May 22, 1978: "Pascal ready for DG users"; An announcement of Rhintek, Inc.'s Pascal compiler for Data General Corp. minicomputers running RDOS. Cost is approximately \$1,000.

Computerworld, May 22, 1978: "Northwest Melds 8085A, Pascal"; "Northwest Microcomputer Systems, Inc. has announced a 'programmers workbench' that reportedly combines the throughput of the 3 MHz Intel Corp. 8085A and the power of Pascal." "The 85/P provides the 'full Pascal environment,' according to the spokesman, including random and sequential files, a screen-oriented editor, interactive source-linked debugger and full documentation plus a 90-day warranty." Cost is about \$7500.

Computerworld, September 4, 1978: "University Working To Adapt Pascal For MDC-100 Use"; "Programmers here at the University of California are presently under contract to adapt Pascal for use on the American Microsystems, Inc (AMI) MDC-100 microprocessor development center, according to an AMI spokesman."

Computerworld, September 29, 1978: "The Waves of Change", "Implementation languages and the case for Pascal"; one section of the multi-part excerpt of Charles P. Lecht's book, The Waves of Change is devoted to a background of why Pascal is a successful language, and where it is being used. "Pascal is more interesting than other influential, new development languages such as Algol 68, because it is apparent that it was designed for software engineering purposes. (italics in original).

Computerworld, September 25, 1978: "Isam Logic, Disk Space Control Included in Micro-Based Pascal/Q"; An announcement of Pascal/Q, which is an enhanced version of Pascal which "includes support for Qsam, Queue's enhanced Isam file access method, and for automatic disk file storage allocation". Available for \$300 plus \$19/month for updates from Queue Computer Corp.

Computerworld, October 2, 1978: "DOD Expects Standard Compiler by 1981"; The U. S. Department of Defense's new compiler is planned to be based upon Pascal. There is a plethora of articles on this language (see July Sigplan Notices).

Computerworld, November 20, 1978: "Work on Pascal Progressing"; "A technical committee from the American National Standards Institute (ANSI) ON Pascal has been approved to work under the X3 committee on computers and information processing. Identified as X3J9, the new groups' initial task is to prepare a proposal for standardization of Pascal and to obtain approval of the proposal ..." Justin Walker of the NBS will convene the first meeting at the CBEMA offices on Tuesday, December 19. "Interested people and organizational representatives are invited to contact Cathy A. Kachurik at Cbema/Standards, 1828 L St. N. W., Washington, DC 20036.

Computerworld, November 20, 1978: "DOD Language named"; "'ADA' has been chosen as the name for the forthcoming Department of Defense (DOD) computer programming language. The language was named after the first programmer in history, according to Lt. Col. William A. Whitaker of the DARPA. Ada Augusta, Countess of Lovelace, was one of the few contemporaries of computing pioneer Charles Babbage who understood his work on calculating machines. ... the first funded compiler, produced for the Army is expected in May 1981."

Computing Europe, September 1978: "Steelman ready next April ..."; More on the DoD's new language. Some background on what has been happening, plus some comments by Edsger Dijkstra, who is a critic of the DoD's plans.

Electronic Design 19, September 13, 1978: "Pascal isn't just one more computer language. It promises to be simple, flexible and fast."; "This introduction to the Pascal programming language is the first part of a series, based on ESI's Pascal Instruction Manual. Future parts will deal in detail with Pascal statements, structured data, I/O procedures, advanced programming techniques and real-world applications." This is a good primer to the language. About 5 pages in length.

Electronic Products, July 1978: "As IC it"; bylined by Jerry Metzger. He mentions that several IC houses and minicomputer companies have announced intentions towards using Pascal. "But standards need to be established. The time is right to do this with Pascal."

Electronic Engineering Times, October 16, 1978: "Pascal Implemented in Code of WD's First Computer Offering"; "Pascal has been implemented in the microcode of a new computer from Western Digital Corp., the first in a line of system products to be announced soon, according to the company." "This new system includes a complete Pascal operating system-Pascal compiler, BASIC compiler, file manager, screen-oriented editor, debug program and graphics package- all written in {UCSD} Pascal." Price is about \$2,500.

Electronics, October 12, 1978: "Pascal becomes software superstar"; "From the mountain fastness of Switzerland there came 10 years ago a programming language called Pascal. For the first few years of its life it created little stir, but then it began to gain popularity in academia and eventually industry. Today, Pascal is finding its way into machines of all shapes and sizes around the world." This is a good article which gives a brief history, and the current usages of Pascal, from micro's to maxi's and small applications programs to operating systems.

Scientific-Technical Book & Copy Center, Letter to Andy Mickel; "Pascal is our best seller ... We would very much like to see a copy of Pascal News".

Silicon Gulch Gazette, Volume 3, Number 3: "UCSD Pascal On An S-100 System"; "Dr. Jim Gagne of Los Angeles, CA, will ... explain the joys and sorrows of implementing UCSD Pascal on his small computer and the difficulties involved in the project." This is a report on scheduled lectures during The Third West Coast Computer Faire, which took place November 3rd and 4th.

From the preceding: "A Portable Compiler for a Pascal-like Language"; "... will be described by Mark Green. He will treat the problem of program portability. Three solutions to the problem will be presented. As well, a particular piece of portable software developed for the Micro Pascal Compiler will be examined."

Communications of the ACM, October 1978, back cover: An advertisement for jobs with the Software Technology Company; "develop a compiler for a sophisticated, Pascal-based communications language with real-time multiprocessing features, extensive exception-handling facilities, global data modules, and other state-of-the-art characteristics." "(Softechs) compiler was produced on the UNIX system and later moved to RSX-11."

TimeShare, open letter to PUG members: "TSC has adopted Pascal as the primary implementation language for its LSI11 based products. ... It is, however, difficult to find programmers experienced with Pascal and RT11 (or RSX) and RSTS." TSC is looking for applicants with these qualifications (plus 2-4 years experience).

**ATRA**

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P.O. BOX 456, MINNEAPOLIS, MN 55440



(612) 374-1293 or  
PUG member Eric Hand, 2633 Dupont Ave S., Minneapolis, MN 55408 (612) 377-7387, informed us that if you are tired of cumbersome COBOL, obsolete FORTRAN, or Brontosaurian PL/1, you can show your support for the best general-purpose language now available by acquiring a Pascal-POWER T-shirt for \$5.95 postpaid from ATRA. Sizes are S, M, L, and XL for a lite-blue shirt with an artistic portrait of a smirking Blaise Pascal.

## PASCAL IN TEACHING

This new section will report on experiences with Pascal used for teaching in computer science. The first report is a nice survey done in Australian Universities by Jan Hext from the University of Sydney. Following that is a report from Japan, and one on a CAI system developed at ETH Zurich. Judy Bishop at the University of Witwatersrand in Johannesburg, South Africa, promised to send a description of a Pascal programming contest held for undergraduates. Substantial prizes were given.



## The University of Tasmania

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11th October, 1978

Dear Andy,

I enclose some information which should be of interest to Pascallers. A friend of mine, Jan Hext from the University of Sydney, has been polling Australian Universities to measure the extent of Pascal's penetration into the teaching area. The sampling is very selective (ie. by membership of PUG!), but many of the institutions not polled would either not teach computer science, or would contribute insignificantly. There are exceptions, of course, notably Monash University - I am reliably informed they are switching over in 1979.

Yours sincerely,

Arthur Sale,  
Department of Information Science.

### TEACHING PASCAL IN 1979

In order to survey the market for Pascal textbooks in 1979, a questionnaire was sent to the universities and colleges listed in the Pascal Users Group mailing list. Three questions were asked:

1. How many students would be learning Pascal in 1979?
2. Would they have learned any other language previously? If so, which one?
3. What textbook would be recommended?

The answers are summarized in the table below. Allowing for a few self-taught students, etc., the main conclusion is that at least 2500 people in Australia will be learning Pascal in 1979, of whom 1900 will be learning it as their first language.

Also listed below are thirteen textbooks on Pascal which are either available or else in press.

The enthusiasm for Pascal may be reflected in the fact that all of the questionnaires were returned without any extra prompting. I would like to express my appreciation to the people who so helpfully answered them.

J.B. Hext

Replies to questionnaires

University or Institute	Introductory Students	As a Second Language: students, first language
Adelaide	350	40, Fortran
A.N.U.	250	-
Melbourne	200 (?)	100, Fortran
Newcastle	-	35, Fortran
N.S.W.	320	-
Queensland	400	100, Fortran
R.M.I.T.	150	-
S.A.I.T	-	100, Cobol
Sydney	-	200, Fortran
Tasmania	120	-
W.A.	100	-
Wollongong	-	60, Basic
Total	1890	595

Textbooks

The following textbooks are either introductions to Pascal or more advanced books that make use of Pascal. Reviews of them are cited from the Pascal Newsletter (PN) and the ACM Computing Reviews (CR).

- Addyman and Wilson: "A Practical Introduction to Pascal", MacMillan, 1978, 140 pp.
- Alagic and Arbib: "The Design of Well-Structured and Correct Programs", Springer, 1978, 292 pp. (PN#11).
- Bowles: "Microcomputer Problem Solving Using Pascal", Springer, 1977, 563 pp. (PN#11).
- Conway, Gries and Zimmerman: "A Primer on Pascal", Winthrop, 1976, 448 pp. (PN#12).
- Findlay and Watt: "An Introduction to Programming in Pascal", Pitman, 1978.
- Grogono: "Programming in Pascal", Addison-Wesley, 1978, 350 pp. (PN#12).
- Jensen and Wirth: "Pascal Users Manual and Report", Springer, 1978, 167 pp.
- Kieburz: "Structured Programming and Problem Solving with Pascal", Prentice-Hall, 1977, 320 pp. (PN#10).
- Rohl and Barrett: "A First Course in Programming in Pascal", Cambridge University Press, in press.
- Schneider, Weingart and Perlman: "An Introduction to Programming and Problem Solving with Pascal", Wiley, 1978, (PN#12).
- Webster: "Introduction to Pascal", Heyden, 1976, 129 pp. (PN#8).

Wirth: "Systematic Programming: An Introduction", Prentice-Hall, 1973.

Wirth: "Algorithms and Data Structures = Programs", Prentice-Hall, 1976.

NIHON UNIVERSITY

COLLEGE OF INDUSTRIAL TECHNOLOGY

Izumicho Narashino Shi  
Chiba 275 Japan

A Report from College of Industrial Technology  
Nihon University, Japan

78/08/03

Prof.H.Shima feel strongly the fruitful effect of utilizing the Pascal language in computer science education, and so he utilize that language in his class. The year Prof.H.Shima started to introduce the language to the computer science course of the department of mathematical engineering was 1976' academic year and 30 students attended' to it's seminar. The first semester of 1977, he utilized Pascal for 110 students of junior enroll to the department in computer science class, and all these times they used "Systematic Programming: An Introduction"(Prentice Hall'71:-Translated to Japanese Edition) as a text.

Now, in 1978' academic year, on both former term and later term he use mainly Pascal in his class for computer science education, referring "Algorithm + Data Structures = Programs"(Prentice Hall'76) and using a text note which Prof.H.Shima himself edited for his junior level students and they belong to the department of mathematical engineering.

Students are served to use concurrent Pascal compiler for their practice and it is implemented by Assistant Prof.J.Ohshima on his laboratory minicomputer(Facom U-mate).

XS-0

In the Apr/May/June 1978 issue of the AEDS Monitor, an article appeared entitled XS-0 "XS-0: A Self-Explanatory School Computer" by J. Nievergelt. The paper was presented at the NAUGAL 1977 Fall Computer Conference in Dearborn, MI. Nievergelt is with the Institut fuer Informatik, ETH Zurich and also with the Department of Computer Science at the University of Illinois. Other people involved in the project are H. P. Frei, H. Burkhart, Chris Jacobi, B. Pattner, H. Sugaya, B. Weibel, and J. Weydert also of ETH. The project, begun in Fall, 1975, was intended to develop an interactive system that should serve as a self-explanatory school computer so that a user should be able to learn programming without further help. An extended version of Pascal-S was used both as an author language and as the programming language for teaching purposes. The hardware consisted of a PDP 11/03 with 28K words and dual floppys, 2 graphics terminals with TV monitors and 8080 micros with 8K bytes of RAM. The system software was written in MODULA. The 8080 was programmed in assembler.

Latest News About DOD-1 (ADA or DOD0)

- Andy Mickel

As we've told you in previous issues of Pascal News, the U. S. Department of Defense (DOD) has endeavored to procure a common programming language based on Pascal for all "embedded" computer applications--computer systems attached to weaponry. Reliable software should kill people reliably! A series of proposals were drawn up under the names Strawman, Woodenman, Tinman, Ironman, and now Steelman (June, 1978) which are alternatively titled "Department of Defense Requirements for High Order Computer Programming Languages." The DOD awarded 4 contracts to 4 software houses from those who had responded to the Ironman specifications in July, 1977. They formulated actual language designs in documents which are known by colors: BLUE-SoftTech; GREEN-Honeywell Bull; RED-Intermetrics; and YELLOW-SRI International.

Basically, the designs consist of Pascal extended for concurrent processed and time-dependent ("real-time") programming. Because a projected \$3.0 x 10<sup>9</sup> will be spent each year by the DOD on software written in this language, the stakes are high. This fact alone has stimulated much manufacturer interest in Pascal over the last two years. We were always worried that this new language (formerly referred to as "DOD-1" and which has now been dubbed "ADA"--see Pascal In the News--or DODO) would swamp Pascal if it were too similar in form. Manufacturers then simply would not support Pascal but instead supply the new, extended language.

In February, 1978 the DOD narrowed the field to 2 by selecting GREEN and RED for actual implementation efforts. More than 50 groups of academic, military, and industrial people were hired to review and comment on the proposals. Niklaus Wirth and Tony Hoare consulted for YELLOW (the least ambitious of the proposals) and Henry Ledgard for GREEN. It is reassuring that none other than Edsger Dijkstra wrote caustic comments which appeared in SIGPLAN Notices: EWD663 in July and EWD659-662 in October. ADA is safely going off the rails, and the threat to the integrity of Pascal is over, I believe. To quote Dijkstra:

BLUE - "unacceptably complex"; GREEN - "the mixture between sense and nonsense remains baffling"; RED - "both advanced and backward in such an incongruous manner that I am baffled"; YELLOW - "an unsalvagable mess."

He stated in EWD663:

"...It makes also quite clear why the new programming language cannot be expected to be an improvement over Pascal, on which the new language should be 'based'. (I am pretty sure that the new language--if it ever gets designed at all--will be much, much worse than Pascal if they proceed in this fashion.) You cannot improve a design like Pascal significantly by only shifting the 'centre of gravity' of the compromises embodied in it: such shifts never result in a significant improvement, in the particular case of Pascal it will be extra hard to achieve any improvement at all, as most of its compromises have been chosen very wisely..."

Please see Ed Reid's letter in the Open Forum section.

## BOOKS AND ARTICLES

Please submit all notices of Pascal books, articles, abstracts, etc. to Rich Stevens at the address below:



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Tuesday evening, Nov. 21, 1978

Andy,

Here is the Books and Articles section for #13. Thank the world for self correcting typewriters. I promise to have things better organized so that my secretary can do the typing for #14.

After going through the previous Newsletters I decided to break the Books and Articles section into:

- Articles
- Books
- Book Reviews.

I did not include any abstracts with each article reference and only included a comment when I felt one was needed for clarification as to the papers relevance to PUG. This should cut down on the size of the section a little. I expanded the book section and gave as much information on the book as possible (table of contents when available) as this is the kind of stuff that I look at when initially inspecting a book.

I just received your UCC Computer User's Manual today and am initially very impressed (especially with the introduction to computing).. I'll send more detailed comments shortly.

*Red*

### ARTICLES

Amman, Urs, "Error Recovery in Recursive Descent Parsers", ETH Zurich, Berichte des Instituts fur Informatik, No. 25, May 1978.

Berry, R. E., "Experience with the Pascal P-Compiler", Software - Practice and Experience, Vol. 8, 617-627 (1978).

Burger, Wilhelm F., "Parser Generation for Micro-Computers", Dept. of Computer Sciences, U. of Texas at Austin, TR-77, March 1978.  
(\* A parser for the language Pascal can be accommodated in less than 4K of 8-bit bytes \*)

Erkio, Hannu and Sajanienu, Jorma and Salava, Autti, "An Implementation of Pascal on the Burroughs B6700", Dept. of Computer Science, U. of Helsinki, Finland, Report A-1977-1.

Krouse, Tim, Electronic Design, Vols. 19 thru 23, 1978.  
(\* A continuing series of tutorials on Pascal \*)

Lawrence, A. R. and Schofield, D., "SFS - A File System Supporting Pascal Files, Design and Implementation", National Physics Laboratory, NPL Report NAC 88, Feb. 1978.

LeBlanc, Richard J., "Extensions to Pascal for Separate Compilation", SIGPLAN Notices, Vol. 13, No. 9, Sept. 1978.

Lecarme, Olivier and Peyrolle-Thomas, Marie-Claude, "Self-compiling Compilers: An Appraisal of their Implementation and Portability", Software - Practice and Experience, Vol. 8, 149-170 (1978).  
(\* The study is centered around a specific case, the programming language Pascal and its many compilers \*)

Marlin, Chris D., "A Model for Data Control in the Programming Language Pascal" Proceedings of the Australian Colleges of Advanced Education Computing Conference, Aug. 1977, A. K. Duncan (Ed.), pp. 293-306. Available from author at Dept. of Computing Science, U. of Adelaide, Adelaide, South Australia 5001.

Marlin, Chris D., "A Heap-based Implementation of the Programming Language Pascal," Software - Practice and Experience, to appear. Also available from the author, see above.

