

May 1988

FOCUS

The Magazine of the North American Data General Users Group



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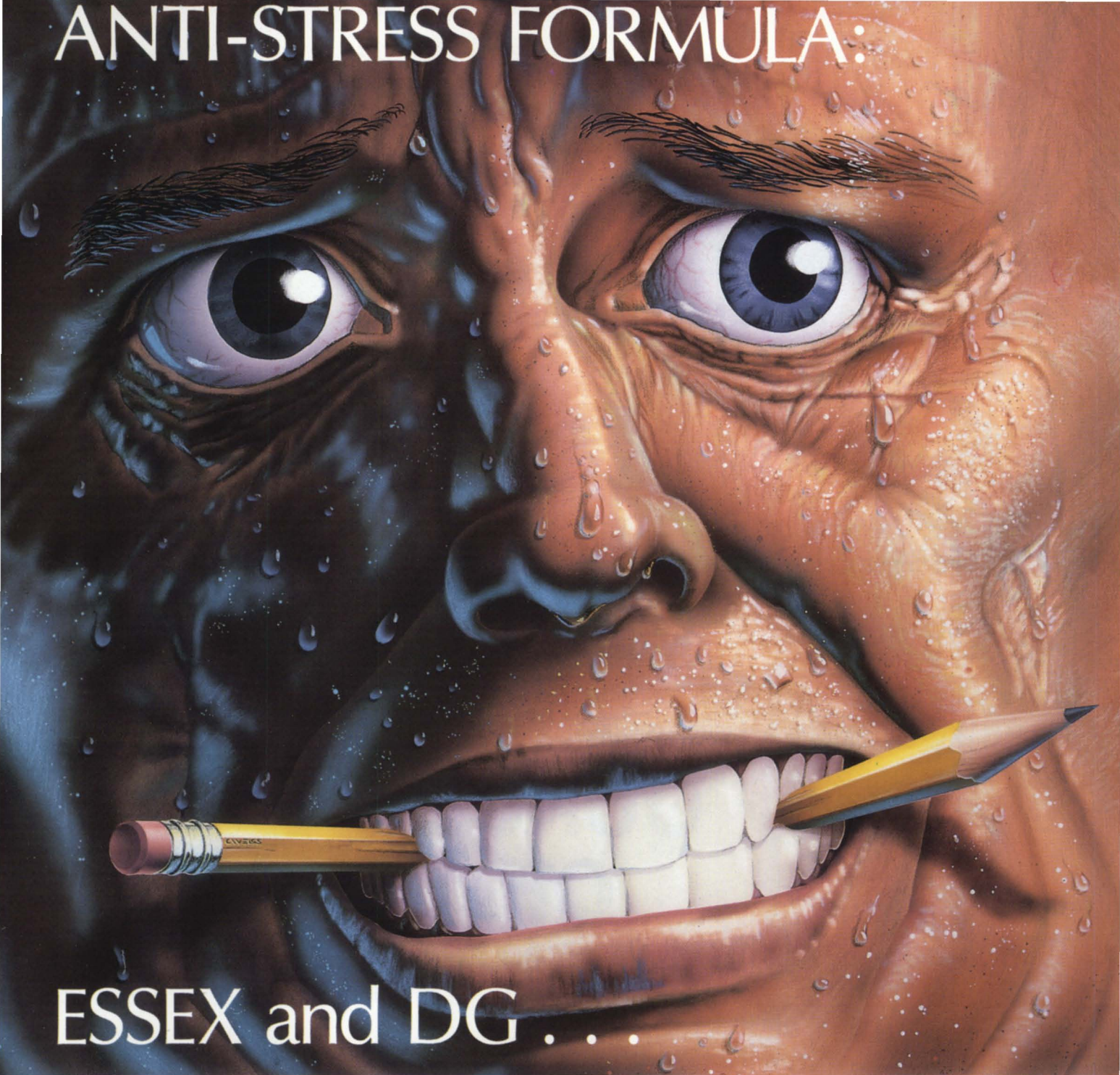


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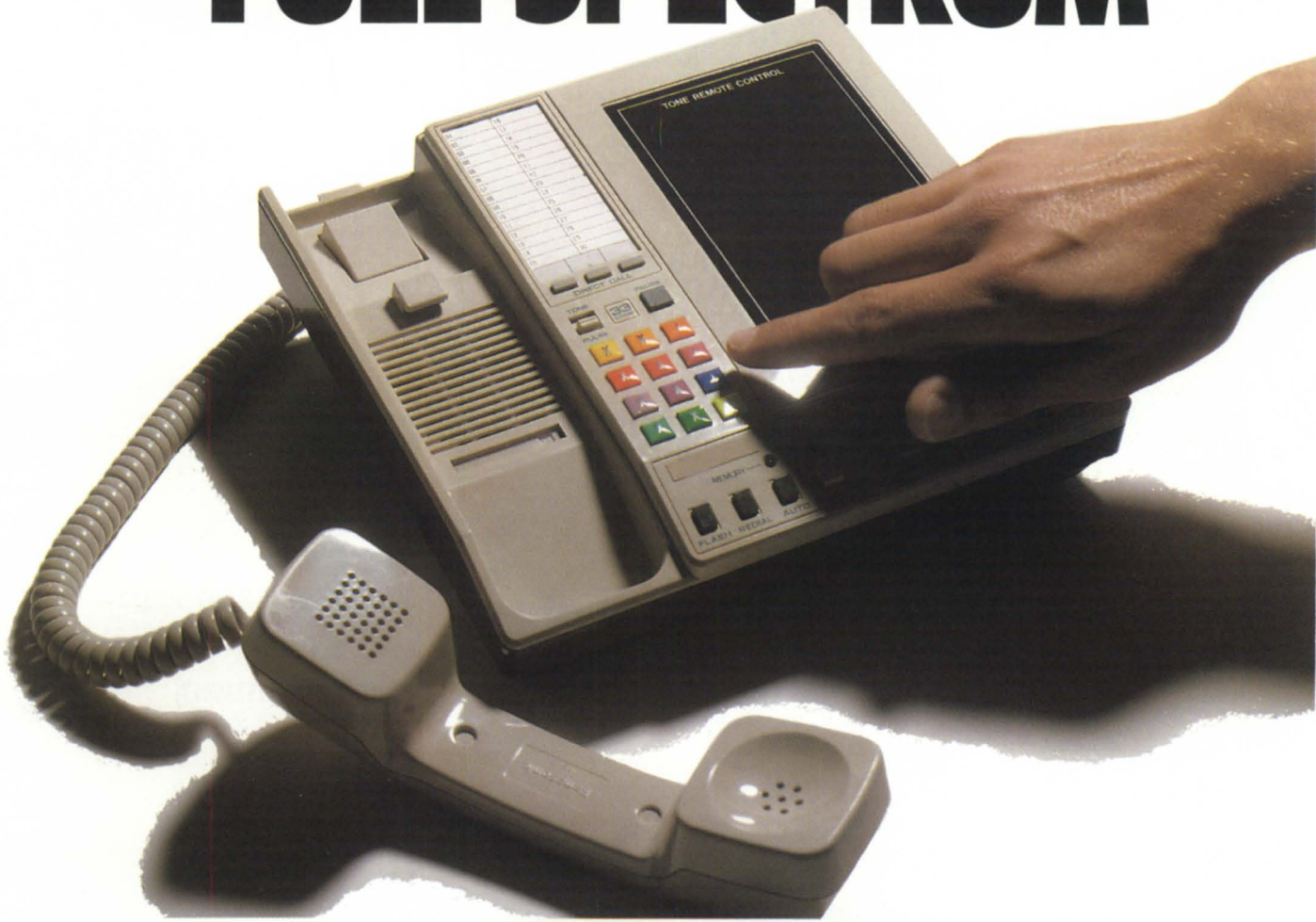
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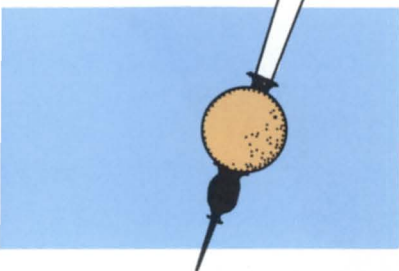
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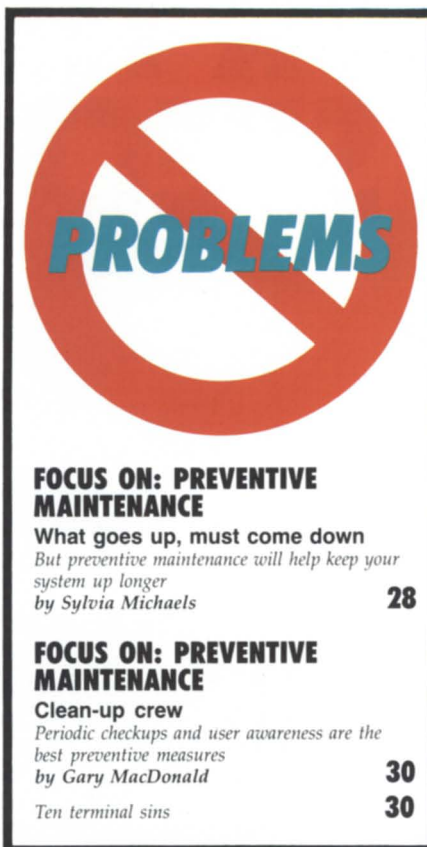


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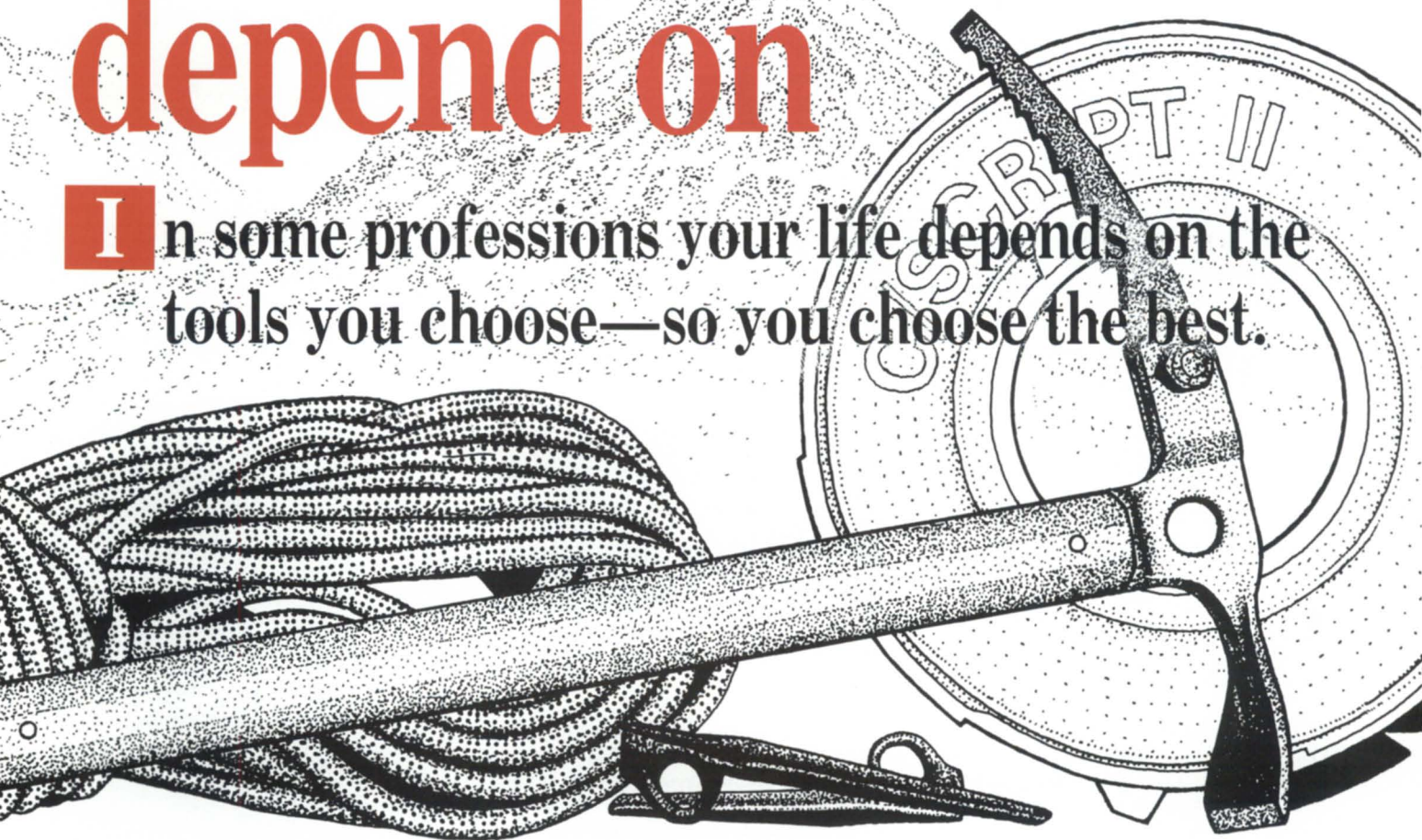
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B.J. chaired the AOS/VS open forum while DG experts fielded questions from the floor.



Spring flowers were only minutes away in St. James Park.

London Bridges

Signs of progress were everywhere at the DGUG annual meeting

by Greg Farman
Focus editor

The old London Bridge was torn down years ago. Dismantled and shipped to Arizona, it's now little more than an oddball tourist attraction. The Londoners I talked to recently don't seem to miss it, though—perhaps they've been busy building new bridges of their own.

Although "bridges" in this case is only a metaphor, the effort and the benefits are quite real. The fact is that both DG users and Data General employees throughout the United Kingdom have expended a remarkable amount of effort during the last year to rebuild relationships that had fallen into disrepair. The results speak for themselves.

I just returned from this year's annual general meeting of the U.K. Data General Users Group (DGUG). The contrast between this year's and last year's meetings couldn't have been more sharply drawn. Last year's meeting, which was held in Birmingham, attracted barely 70 attendees; this year's filled the distinguished St. Ermin's Hotel in downtown London. Last year's meeting resulted in a substantial financial loss for the group; this year, the DGUG is once again on solid financial ground. Last year, only a few representatives from DG management were on the

program; this year, the entire complement of top-level managers from Data General Ltd. (DGL) attended—along with several big names from Westboro.

But probably the biggest contrast from last year to this was in the tone of the discussions. Last year's meeting was marked by rancorous exchanges, both among users and between users and Data General. This year, there was much more of a sense of shared goals and common interests.

Why the big change? Perhaps it's part of a natural evolution as DG and the users groups have grown and matured. Certainly, there has been a parallel improvement in relations between users and Data General in North America during the past several years.

In the U.K., the push for better relations came both from Data General and from the users. On DG's side, the bulk of the work was done by Ivor Coleman, DGL's product marketing manager, who had the full support of management. The users were fortunate to have strong leadership from Chris Everett (chairman), Hugh Ross (deputy chairman), Richard Finmore (treasurer), Neal Clements (sec-

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retary), Michael Hunt, Graham Perry, Ron Burns, and Dan Milosevic.

Chris Everett, who chaired the committee during the year of transition, put it this way in his report to the members: "The main objectives of the year have been to develop the group's membership and consequently to strengthen

ingly successful selling to larger companies and government. Lyons said that DG's strategy in the U.K. and Europe—as in the U.S.—will build on the revitalized value-added reseller program and will target specific high-growth vertical markets.

Lyons also announced that DG would



Incoming chairman Hugh Ross relaxes with fellow Scots.



Outgoing chairman Chris Everett receives a well-aged gift.

its finances, and to start rebuilding the right relationship with Data General. I see these objectives as being complementary, since a credible, businesslike exchange of views with Data General should result in an improved image of the user group and hence more users joining it. We have been anxious to achieve some visible and tangible benefits for the members."

And achieve they did:

* Taking up the interests of those AOS/VS users who were hard-pressed to cope with the increased main memory required by rev 7.5x, the DGUG gained a commitment that DG will continue to provide support for rev 6 indefinitely.

* Meanwhile, DGUG members are working with DG's development and support staff in the U.K. to see if they can find solutions to the memory problem.

* In addition, DGUG has negotiated with DG Direct to get substantial discounts on memory boards for users who need additional memory before they can upgrade to AOS/VS 7.5x.

DG also had good news to report. David Lyons, who only seven weeks earlier became vice president and general manager for DG's European operations, said that Europe represented 30 percent of DG's worldwide revenues last year—up from 20 percent in 1985. The U.K. represented more than 30 percent of DG's European business, and has been growing at an annual rate of about 25 percent. Lyons added that, in addition to the greater volume of business, DGL has been increas-

continue for the third year as a major sponsor of Team Tyrell, the Formula One auto racing team.

Other program highlights:

* Robin Mathieson and Angus McKellar, both of Peat Marwick McClintock in Scotland, described causes and potential solutions for security breaches and computer fraud.

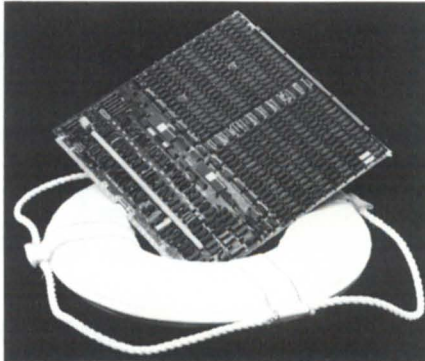
* Chris Everett, of Hamlet Computer Group, spoke from personal experience on the subject of computer disasters and how to recover from one.

* Brian Johnson, of B.J., Inc., explained some of the theory and provided some practical guidelines for performance monitoring and system tuning.



NADGUG president Joyce Carter brought greetings from North America.

* Chris Stone, DG's corporate product marketing manager for office systems, and Ivor Coleman, product marketing manager for DGL, teamed up to discuss



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DG's strategy and plans for CEO and related office systems.

* Brian Johnston, known as "Mr. Cricket," entertained banqueters with jokes, anecdotes, and reminiscences from his long career as a radio sportscaster

* Ron Skates, DG's senior vice president for finance and administration, spoke on the company's current finances and prospects.

* Joyce Carter, president of NADGUG, brought greetings from the North American group and invited DGUG members to attend the 1988 NADGUG conference in Philadelphia.

* Peter Griffiths, of the consulting firm The Instruction Set, predicted that Unix



St. Ermin's Hotel was the scene of DGUG's Conference 88.

will eclipse proprietary operating systems for minicomputers during the next few years.

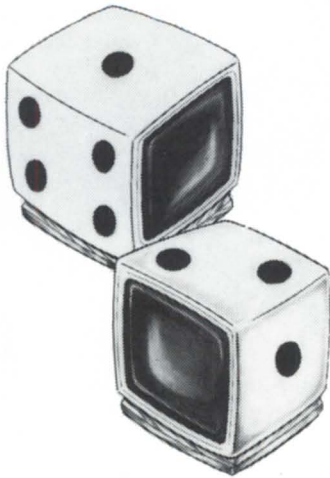
* Herb Osher, corporate director for VAR product marketing, described Data General's products and strategy for the Unix market.

* Senior managers from DGL, including Iain Davidson (area director and general manager), Mike Harrison (area sales and marketing manager), Mike Glover (customer support center manager), Eddie Cunningham (area systems engineering manager), and Ray Ursell (area customer support manager), described their operations and plans, and fielded questions from the audience.

* Brian Johnson moderated an AOS/VS open forum.

It was a full program for the two days of the meeting. However, as is so often the case, the value of the meeting came not only from the events on the program, but also from the informal discussions that blossomed in the lobby, the bar, and the banquet hall. Any NADGUG member who has come away from a conference or RIG meeting with new friends and contacts to call on when the need arises would have felt right at home. Δ

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ROUNDUP



Executive Board members enjoy each other's company after daylong meetings.



News from NADGUG and its affiliates

NADGUG's spring board meeting attracted a crowd

by Frank Perry
NADGUG treasurer

The Executive Board of the North American Data General Users Group held its spring meeting in Philadelphia on February 25 and 26. The Executive Board is the governing body of NADGUG and consists of the elected officers of NADGUG, the chairs of all standing committees, and the presidents of all regional interest groups (RIGs) and special interest groups (SIGs). My unofficial count indicates that all national officers and chairs were present, as well as representatives from 10 SIGs and 19 RIGs, making a total of about 50 people in attendance, including Data General and NADGUG staff.

A number of significant actions were taken at the meeting, and the purpose of this article is to inform you, the members, of what happened. These aren't the official minutes of the meeting, but rather an overview.

One of the first items on the agenda was the matter of incorporation, which has been a concern for the past several years. No actions have been taken until now for fear that anything we did might affect our application for status

as a nonprofit organization, which has been pending since 1984. During the past year, both our legal counsel and an accountant have advised us to proceed with incorporation separately from our tax status. Therefore, we voted to prepare an amendment to the NADGUG bylaws to allow incorporation. This amendment, along with several others, will be submitted to the membership at the NADGUG business meeting in August.

The Executive Board also voted to authorize the Executive Committee to retain professional services necessary to resolve the status of our application to the Internal Revenue Service as a nonprofit organization.

Joyce Carter and legal counsel Peter Marx also discussed an upcoming meeting of the heads of all the major users groups to talk about their common needs and the possible formation of an umbrella group to help coordinate our joint needs. More information on this will be forthcoming from Joyce at our fall meeting and in *Focus*.

It was agreed that the group should fund the trip for our president to go to the United Kingdom users group annual meeting, and that the U.K. group will send their president to our annual meeting.

The treasurer's report showed a balance of \$102,200.00 as of February 1, 1988. There are pending expenditures of more than \$60,000 to cover the remaining costs of the 1987 conference

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and the spring meeting. Discussion brought out that many of our cash position reports are confusing because of our accrued expenses for conferences. Our fiscal year (from October 1 to September 30) causes many of these problems, because conference expenses sometimes occur in a different year than the revenue, and sometimes two conferences fall in a single year. A recommendation by the Audit Committee that we change our fiscal year was referred to the Planning Committee for study.

Jim Siegman of the Audit Committee recommended acceptance of the 1987 fiscal year treasurer's report, and suggested that the bookkeeping system be modified to eliminate the confusion noted above. There were several offers of software to the treasurer for this purpose. The report must more clearly show our cash position by showing accrued and actual expenses.

We have encountered several problems in our attempt to combine billing for the RIGs and SIGs with the NADGUG dues. One limitation is in our membership software package, and another more significant limitation is the wide variety of dues structures among the various RIGs and SIGs. Most groups also do not require NADGUG membership, so the potential benefits of this service are lost. There is a need for further study of these problems, and the Executive Committee will undertake that study.

Several new groups petitioned for recognition at the meeting, including the TEO 3-D SIG and the Performance Evaluation and Capacity Planning SIG formed in Las Vegas. The IRDOS SIG is changing its name to the ICOBOL SIG in order to more accurately reflect its role. A complete RIG/SIG roster will be published in *Focus* on a semiannual basis.

Greg Farman, publisher of *Focus*, gave a presentation on the status of *Focus* and the need for continued growth of membership. Several suggestions for the use of *Focus* to promote NADGUG membership were made. He also cited the need for expanded coverage in *Focus*, including more opinion articles, both pro and con, as long as they are constructive. Need for more cost-performance analyses regarding upgrades and new software and hardware were outlined. These suggestions raised some good commentary, some of which continued well into the evening. I look forward to seeing the results in

future issues.

It was also decided to sell subscriptions to *Focus* at \$36 per year in an effort to expand our base. It is believed that many firms that already belong to NADGUG would buy additional subscriptions for their employees.

Wes Thomas, chairman of the Publications Committee, had several other suggestions that were approved for using our publication to promote membership. He also noted that the tape library is growing, as are requests for copies. This is a useful promotional tool, and the board reaffirmed the policy that the library is a benefit of membership.

Rene Dominguez reported on the newly formed Executive User Council, which had a very successful organizational meeting recently. This group of senior data processing executives is intended to interface with Data General management on items of concern to users at higher policy levels. They are planning a session at the next conference.

Lee Jones of the Meetings Committee reported on the arrangements for the conference this August. Everything seems to be going well, and Philadelphia is a very interesting city with a lot to see. (I could see the steps filmed in the famous scene from *Rocky* from my window.) Planning for the 1989 conference is well under way. In future years, we will be using a convention center because of the growing number of attendees and the large exhibit area necessary to meet our needs.

The responsibility for the site selection of future meetings has been transferred to the Planning Committee, and Calvin Durden described the need to extend our site selection planning from three years in the future to five years. The 1990 meeting is set for Seattle. Possible regions and cities were discussed for the next three years, and they are 1991—Northeast/Midwest, 1992—Southeast/Southwest, and 1993—Far West.

The formation of a Bylaws Committee was authorized in order to review the changes necessary to implement a single class of membership with annual dues of \$40, rather than the present system of two classes, \$100 for an organizational membership and \$30 for an individual. All members would then have the right to vote, rather than just organizational members. They will also develop an amendment to change the advance notice for amendments from

90 days to 30 days. The present 90-day notification requirement is difficult to meet because of the *Focus* printing schedule, and could result in expensive separate mailings.

A proposed budget of \$391,300 was submitted for review and discussion. Based on the comments, it will be finalized for adoption at the fall board meeting and the annual meeting. Δ

RIG/SIG Committee at work

by Paul Duck
RIG/SIG chairman

Note: The following update on the RIGs and SIGs comes from the committee report



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given at the Executive Board meeting held in Philadelphia recently.

With the addition of two members to the RIG/SIG committee, we will see a strengthening of the committee. In 1987, Data General divided its sales territories into eastern and western units. Following DG's lead, I felt we should expand the committee by adding two

people to cover the RIG, SIG, and NADGUG members in each of these areas.

The addition of these two people was ratified at the conference in Las Vegas. Jan Grossman is coordinating in the eastern part of the U.S. and working with DG vice president Bob Tway, and Dave Angulo is covering the western

territory and working with DG vice president Brian Mellon.

Since the last Executive Board meeting, the committee has met once in St. Louis. The main issue discussed was improving the quality of the RIGs and SIGs. Also, it is our intent to resurrect inactive groups and give them a fresh start.

The committee devised the following ideas for improving quality and growth.

1. Renew Data General's executive commitment and use it to enhance the strength of the interest groups. For example, we will attempt to get Frank Keaney, DG's vice president of North American Sales, to send another letter to the sales force encouraging them to support and get involved in RIG activities.

2. Begin running advertisements in *Focus* for RIGs or SIGs, at no cost to the group. *Focus* has allotted space for this purpose.

3. Collect names of individuals at the NADGUG booth at our annual conferences that have no RIG in their area.

4. Insert a letter from the area RIG/SIG coordinator in the start-up kit.

5. Use OIS as a communicator to groups.

6. Get some added benefit from Data General's Educational Services via special pricing (more on that later).

7. Interview a well-run RIG and document all of their procedures and techniques. Have *Focus* run an article on them.

8. Discuss regional representation with the Executive Board.

9. Target prime cities to establish new RIGs. We came up with Philadelphia (already started), Atlanta (revive), Birmingham, Toronto, North Carolina (a separate group from SEARIG to serve a different area), Phoenix, Austin, and northern California (revive).

10. Establish a banking procedure for the start-up kit.

At this time, two new RIGs have petitioned for recognition—Milwaukee and St. Louis, and two new SIGs have petitioned and received recognition. They are Lion's Gate and TEO 3-D.

Another idea discussed at the board meeting was having regional meetings of the RIG/SIG representatives at a separate time and place from the twice-a-year board meetings. The traditional luncheon is no longer sufficient to cover all the necessary topics. Others at the board meeting suggested holding interest group workshops to show people how to start up and maintain a

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successful group. The consensus was that this would be a valuable tool and an appropriate service to offer.

Also, the issue of combining the dues for both NADGUG and RIG/SIGs brought about many good ideas; however, a single, viable solution was not settled. At present, the NADGUG software isn't set up to handle dual billing, but several offers came from board members to change the software to suit these needs. Others felt that the software was purchased to administer this function, and this lack of functionality should be investigated.

Additionally, a provision was made in the 1988 NADGUG budget to hire a part-time intern working out of the *Focus* office. This person will help coordinate interest group meetings with the group chairperson; set up speakers, dates, and meeting places; get out mailings; and report on the above in *Focus*.

The **RIG/SIG Committee** with the help of Elaine Karis has also been working on another service for members: joint training in local areas at reduced rates in conjunction with Data General's Educational Services. The contact within the local sales offices and SEs would also be a benefit to members. A minimum class size of eight students will be required for a class to be held. For a class of 8 to 10 students, a 10 percent discount is available to NADGUG members. For classes with 11 to 15 students, a 15 percent discount would be made available. Payments must be received by Educational Services prior to the first day of class; therefore, we need to know the exact number of attendees at least two weeks in advance, so the correct discounted price can be quoted.

Educational Services will offer two types of classes: sales office classes and dedicated center classes.

For classes held at local sales offices, Educational Services will provide a list of sales offices that have the necessary space and equipment needed for training. They will also provide the name of the consultant to contact to request a class. Interest group presidents should get in touch with the appropriate consultant and request a class. The consultant will check with the sales office to see when training can be held and check with Educational Services operations staff to see when an instructor is available. At that point, the consultant will book the class with Educational Services' telemarketing group.

The dedicated center classes would be held in Los Angeles and Chicago where NADGUG is very strong. These classes should also be requested and scheduled through the consultants.

The following is a list of cities with DG sales offices and consultants that are already willing to participate in this program:

Midwest—Deborah Turkot

Minneapolis, MN

Cleveland, OH

Kansas City, MO

St. Louis, MO

Detroit, MI

Northwest/Southwest—Liz Schroeder

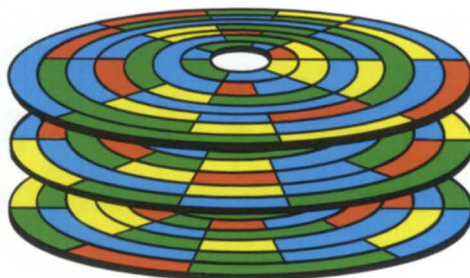
Englewood, CO

Northeast—Penny Mills

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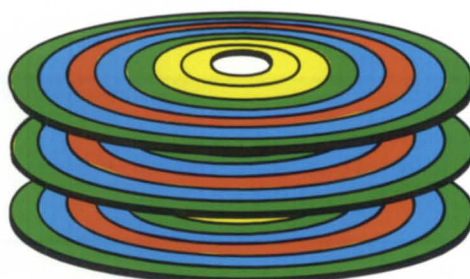
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 Memphis, TN

L.A. EDGE offers new membership

The Los Angeles End-users of Data General Equipment (L.A. EDGE) has announced a new type of membership, primarily for individuals who can't attend meetings because of distance. A

Long Distance Associate (LDA) membership offers the following benefits:

- a mailed copy of the monthly meeting program packet with speaker handouts and brochures
- a subscription to the "On The EDGE" newsletter
- access to club software
- the directory list of group membership and their equipment configuration.

If you would like to become a member or an LDA member, contact Carolyn Naber at Creative Data Concepts, Inc., P.O. Box 50107, Pasadena, California 91105; 818/244-4634. Δ

RIG/SIGs report to Executive Board

The following news items come from the RIG/SIG reports given at the board meeting in Philadelphia.

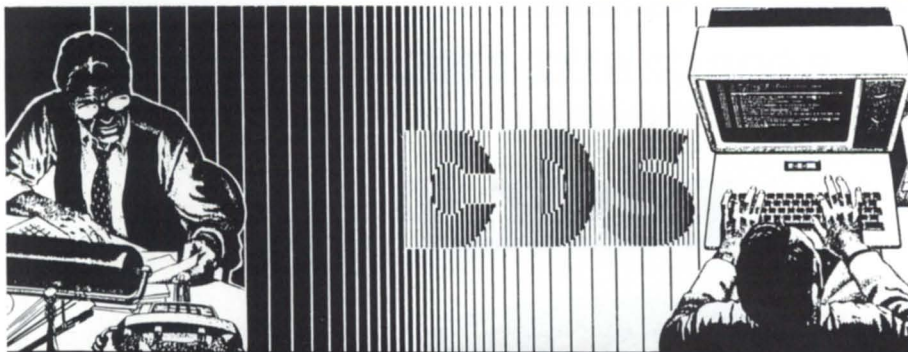
■
 The Chicago Area Data General Users Group semiannual report shows a current budget with \$6,000 income, \$7,000 expenses, and a \$1,900 balance. Major expenses included sending a representative to the fall Executive Board meeting, the dinner meeting, and the NADGUG membership dues.

Our current membership numbers are 21 corporate memberships, 55 associate memberships, 40 individual memberships, 4 officers, 41 DG employees, and 39 prospective members—for a total of 161 paid members, up from 160 last year.

Our biggest concern is access to the NADGUG computer. We think that all RIG/SIG chairs should have access to the NADGUG computer for electronic mail. We also think that the RIG/SIG chairs, NADGUG committee chairs, and the NADGUG officers should have read access to the NADGUG membership list. We still don't have access to the OIS board (more than one year after applying), so that is not yet an alternative for RIG/SIG communications.

We would also like to point out that for the first time in our existence, we are now getting good support from our local DG office. We thank them for this change in attitude.

Our current officers are: Don Mungoven of QST, president; Paul Gibson of First United Leasing, vice president; Dave Angulo of Angulo Consulting, secretary; and Jim Siegman of Data-mark, treasurer. ■



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Membership for the Law Enforcement Data General Users Group (LEDGUG) now has approximately 33 people from 17 criminal justice agencies from 12 different states. These members represent law enforcement, court, and correctional agencies on municipal, county, state, and federal levels.

As of February 23, 1988, the treasurer's report indicated an unencumbered balance of \$2,720.

The next major event for LEDGUG is the annual training conference that is set for May 8-11 in Richmond, Virginia. During this meeting, LEDGUG's Executive Board will take steps to formally incorporate as a nonprofit organization.

Current officers are: Capt. Joe Hanna of the Richardson Police Department, president; Maj. James Wallace of the Mississippi Bureau of Narcotics, vice president; Sgt. Steve Moore of the Cedar Falls Police Department, treasurer; and Charles Thibault of the Petersburg Police Department, secretary.

The Houston Area Data General Users Group (HADGUG) had its most successful meeting last year on the topic of SCADA (System Control and Data Acquisition) in an oil industry environment. Approximately 40 people attended. A meeting covering CEO rev 3.0 was also very popular, pulling in about 20 members. Two of our upcoming meetings will cover power systems (both backup and conditioning) and the NADGUG software library. We are asking NADGUG for assistance with meeting topics. Finding topics that appeal to a wide range of people is sometimes difficult.

Houston probably has some of the best DG support in the country. The support from the local DG office, especially that of Marty Robbins, SE manager, and his SEs has been outstanding.

Last year's membership was between 20 and 25 people. Statements for this year haven't yet been sent out, so we don't have current figures. After accounting for invoices to be paid, our current balance is approximately \$700.

Our new slate of officers are: Jeff Campbell of Philadelphia Life Insurance, president; Lee Jones of Gulf Coast Systems, vice president; and Randy Berndt of the American Urological Association, treasurer. The position of secretary is open. Δ

from the desk of the president. . . .

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- Q. How do you optimize the allocation of users across multiple CPUs?
- Q. How do you track the resources used by one user for multiple projects?
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BULLETIN BOARD

Bits and bytes from the bulletin board

NADGUG supports not just one, but two, electronic bulletin boards. According to Doug Kaye, who operates the older of the two boards from his company's offices in Corte Madera, California, usage of the boards is increasing significantly—several new members sign on each week. As usage goes up, so does the quantity and quality of the dialogue, as members share problems and solutions.

Each month, *Focus* will excerpt portions of the ongoing bulletin board conversation to give those who haven't tried it yet an idea of the topics that are being discussed. For more information about logging on, see the "On-line Help" listing on page 74.

From: Charles Hammond
To: All
Subject: FOO

Why is FOO often used as a filename?

From: Jeff Campbell

My guess is that a lot of the /VS developers are a bunch of closet Adventure players. There is a magic phrase in adventure that goes "FEE FIE FOE FOO," or something like that. Who knows?

From: Dell Setzer

FOO is a corruption of FOOBAR (which you'll also see used a lot as a junk name), which is a corruption of FUBAR. I think it comes from the same source as SNAFU, maybe during World War II sometime. Loosely translated, FUBAR means "Fouled Up Beyond All Recognition," only the original first word was not "Fouled." SNAFU means "Situation Normal, All Fouled Up," but again, in the original version, the next-to-last word wasn't "Fouled." Anyone else know any FU acronyms?

From: Dave Angulo

Yes, I understand the same thing. DEC and IBM use the same names and have used them for a long, long time.

From: Bill Cary

In my navy days (many, many years ago), we recognized three FU acronyms. The two just cited (SNAFU and FUBAR) and also TARFU, meaning "Things Are Really Fouled Up." Incidentally, there was a movie named SNAFU made right after World War II.

From: Bill Benedetto
To: All

Subject: Tail program for AOS

Does anyone know of a program that would function as the tail command does under Unix? I would like to have such a program for my AOS system. I have written a tail program for my AOS/VS system, and it is fast. For those of you not familiar with tail, it prints out the tail end of a disk file. We use it to check completion of programs that write out to files. We check for the proper stuff at the end of the disk file. It is a pain on AOS to have to type out the whole file (and wait for it) just to see the last few records. Thanks for any help that anyone can provide.

From: Brian Johnson

A TAIL program called EPYT is available for AOS/VS on the :SYSMGR BBS as item AOSVS:UTILS:EPYT. The phone is 415/391-6531.

From: Randy Berndt

The AOS/VS goodies tape from the AOS/VS SIG has the software tools on it. One of the tools is REV, which does what you want. (I think it's REV, maybe it's BACKW.) Check with the SIG to get the tape. David Novy with 3M is the head of the SIG. His address should be in a *Focus* somewhere. If you aren't a member, dues are only \$30.

From: Bill Benedetto

Thanks, Randy. I will have to look up the address and see what I can. And no, I'm not a member, but it would certainly be worth it to get a nice TAIL prog.

From: Ron Ralston

I think it's actually called TAIL. What it does is read the file from the tail toward the head (from back to front? right to left?). However you want to think of it, you get the file displayed last part first.

From: Bill Benedetto

Randy or whomever, I cannot seem to find a reference anywhere for the AOS/VS SIG or David Novy. If someone could give me an address of where I could write for information, I would appreciate it. Also, are you sure that I want the AOS/VS SIG and not the AOS SIG (if one exists), since the program that I want is for my AOS system. Any replies?

Editor's note: David Novy can be reached at 3M, 3M Center, Building 235-1D-19, St. Paul, Minnesota 55144-1000; 612/733-3320. The official name for the group is the AOS and AOS/VS SIG. The complete roster of regional and special interest groups was last listed in the April 1988 issue of Focus. Δ

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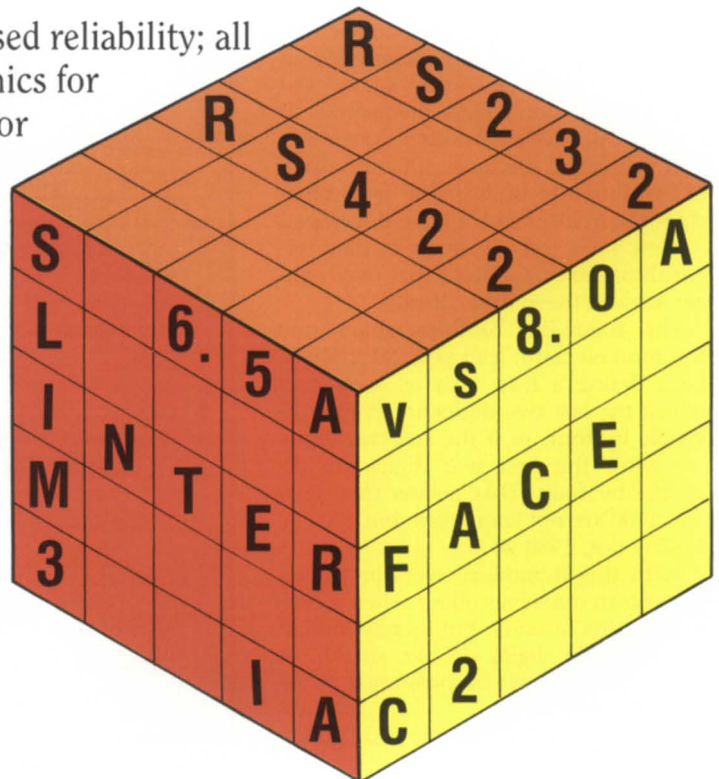
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Father Time

He will always know what day it is

by Phillip W. Paxton
Special to Focus

Computer people seem to be fascinated with dates—witness all the space that *Focus* has devoted to day-of-week algorithms recently. And if you look in any of the *1,000,001 Ideas For Your New Computer* books, you'll see the subject treated at length. However, many of the published algorithms for handling dates fail, either because they don't handle leap years properly, or because they stumble when they encounter a year that doesn't begin with 19.

Many of the published date algorithms use tables in some fashion, which is desirable to the extent that tables are easier to comprehend than formulas. However, not all environments readily lend themselves to handling tables (e.g., CLI).

An alternative approach is to use system calls. This is quite acceptable in high-level languages, but again, CLI and Present don't lend themselves to system call access. Another consideration is speed, because time-intensive CLI macros are undesirable in a time-sharing environment. I have developed a simplified set of generic date algorithms for our system that may help get around these difficulties.

The following routines share one common element: leap year calculation. Let's define a leap year as a year in which the last two digits are evenly divisible by four, or if the last two digits are zero, the first two digits are divisible by four. This means that 1800 and 1900 are not leap years, but 2000 is; 1987 is not, 1988 is.

With this definition, we won't need to concern ourselves about when a century begins or ends, but merely look at the first two digits (18, 19, or 20). A two-digit year will be presumed to be prefixed by 19.

I have included pseudo-code along

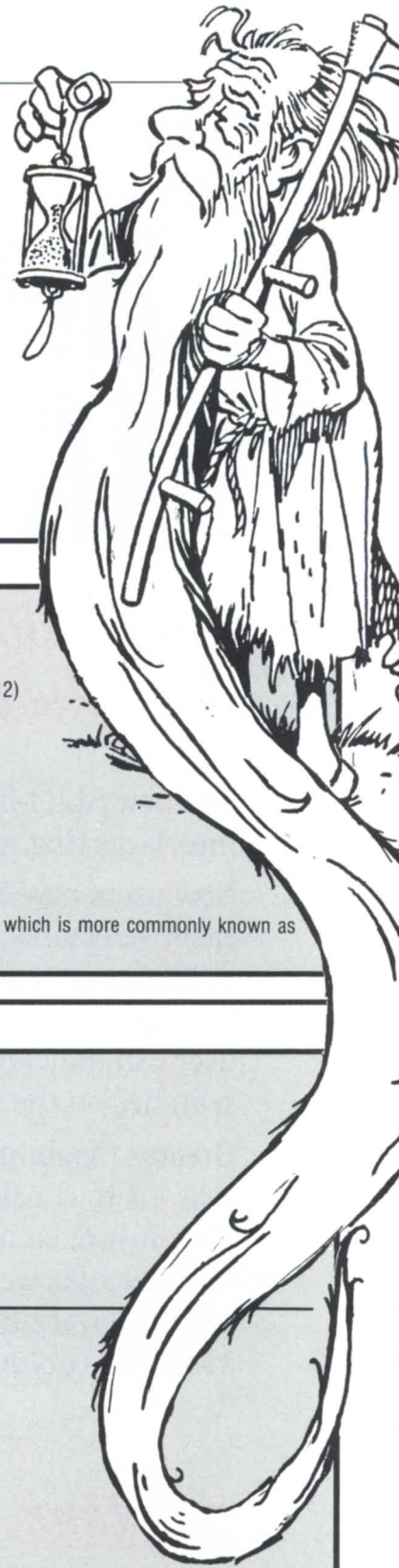


Figure 1: Variables and CLI equivalents

pseudo-code	CLI	Description
D	var0	Day of the month (1-28/30/31)
M	var1	Month (January = 1, . . . , December = 12)
Y	var2	Year
J	var3	Julian Date (1-365/366)
L	var4	Leap year (1=Yes; 0=No)
W	var5	Weekday (0=Sunday, . . . , 6=Saturday)
M1	var6	temporary value.
M2	var7	temporary value.
LD	var8	Last 2 digits of the year.
C	var9	Century.

“[. . .]” is the mathematical GIF (Greatest Integer Function), which is more commonly known as “INT(. . .).”

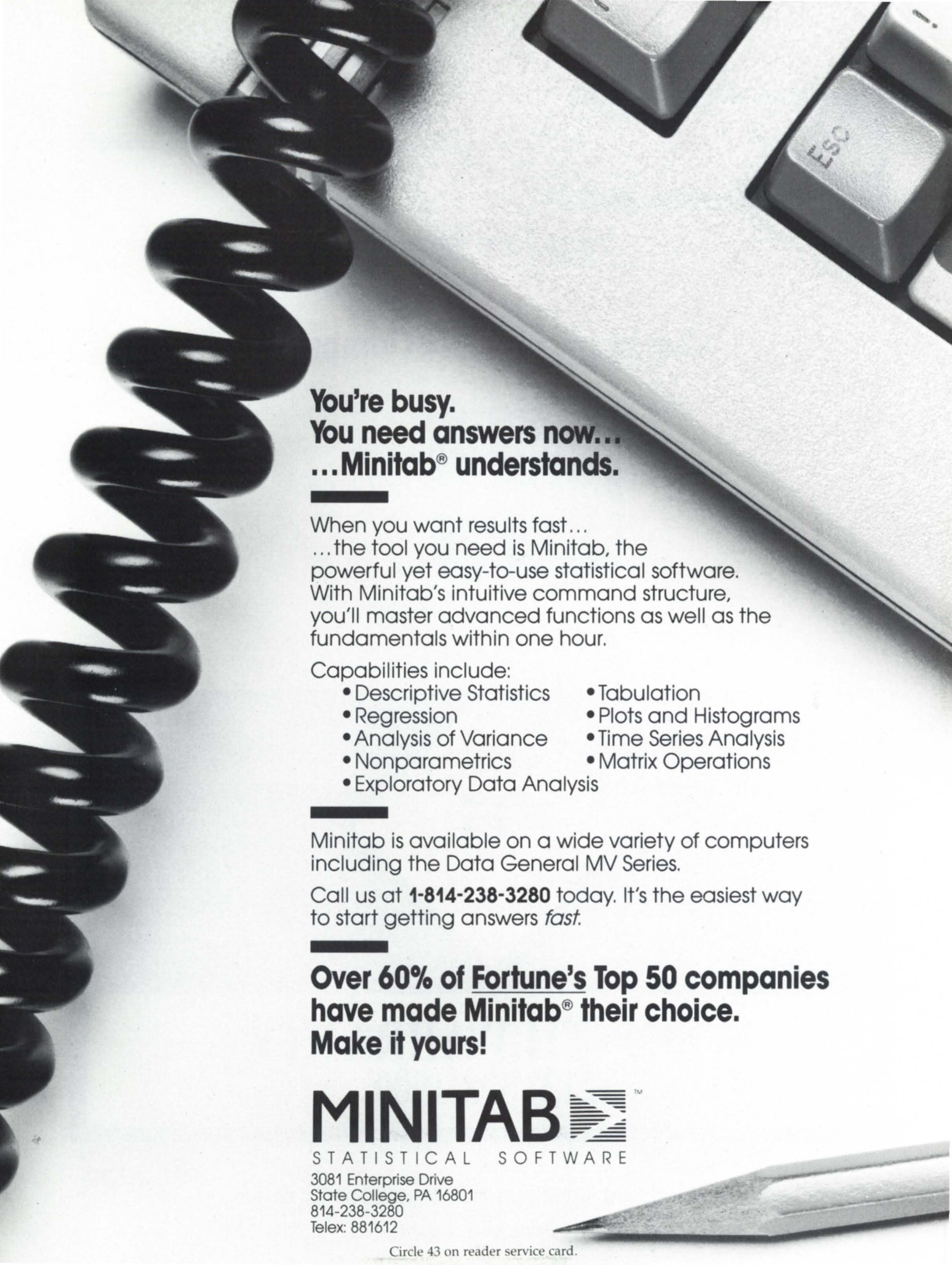
Figure 2: Leap year algorithm and macro

```

1  if Y < 100
    then Y = 1900 + Y
2  let LD = mod(Y, 100)
3  let C = [Y/100]
4  if mod(LD, 4) = 0 and
(mod(C, 4) = 0 or LD < 0)
    then L = 1
    else L = 0
end if

leap_year?.cli
comment parm1 is the year
var2 %1%
1  [!ult [!var2], 100]
    var2 [!uadd 1900, [!var2]]
    [!end]
2  var8 [!umod [!var2], 100]
3  var9 [!udiv [!var2], 100]
4  [!ueq [!umod [!var8], 4], 0]
    [!ueq [!umod [!var9], 4], 0]
    var4 1
    [!else][!une [!var8], 0]
    var4 1
    [!else]
    var4 0
    [!end][!end]
[!else]
var4 0
[!end]

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Figure 3: Converting Gregorian to Julian

```

1 let J = [(M + 2) * 30.55] + D—91
2 if J > 60
  then J = J—2 + L

```

```

julian.cli
comment parm1 is the month
comment parm2 is the day
comment parm3 is the year
var1 %1%
var0 %2%
var2 %3%
leap_year? [!var2]
1 var3 [!usub [!uadd [!udiv [!umult [!uadd [!var1], 2], 3055],
  100], [!var0]], 91]
2 [!ugt [!var3], 60]
  var3 [!uadd [!usub [!var3], 2], [!var4]]
  [!end]
write The Julian Date for [!var1]/[!var0]/[!var2] is
  [!var3]/[!var2]

```

Figure 4: Converting Julian to Gregorian

```

1 let D = J
2 if D > (59 + L)
  then D = D + 2—L
3 let D = D + 91
4 let M = [D / 30.55]
5 let D = D—[(M * 30.55)]
6 let M = M—2

```

```

gregor.cli
comment parm1 is the julian date
comment parm2 is the year
var3 %1%
var2 %2%
leap_year? [!var2]
1 var0 [!var3]
2 [!ugt [!var0], [!uadd 59, [!var4]]]
  var0 [!usub [!uadd [!var0], 2], [!var4]]
  [!end]
3 var0 [!uadd [!var0], 91]
4 var1 [!udiv [!umult [!var0], 100], 3055]
5 var0 [!usub [!var0], [!udiv [!umult [!var1], 3055], 100]]
6 var1 [!usub [!var1], 2]
write The Gregorian date for [!var3]/[!var2] is
  [!var1]/[!var0]/[!var2]

```

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FOCUS ON: DOW MACRO

Figure 5: Day of the week

```
1 let M1 = mod( mod( M+9, 12) + 1, 11)
2 let M2 = 0.8 * (2 * M1 + 1) + M1
3 let M2 = M2 - L * [(mod( M+9, 12) + 1)/11]
4 let W = mod( LD + [LD/4] + D + M2, 7)

dow.cli
comment parm1 is the month
comment parm2 is the day
comment parm3 is the year
var1 %1%
var0 %2%
var2 %3%
leap_year? [!var2]
1 var6 [!umod [!uadd [!umod [!uadd [!var1], 9], 12], 1], 11]
2 var7 [!uadd [!udiv [!umult 8, [!uadd [!umult 2, [!var6]], 1]], 10], [!var6]]
3 var7 [!usub [!var7], [!umult [!var4], [!udiv [!uadd [!umod
[!uadd [!var1], 9], 12], 1], 11]]]
4 var5 [!umod [!uadd [!var8], [!uadd [!udiv [!var8], 4],
[!uadd [!var0], [!var7]]]], 7]
str [dow.data.[!var5]]
write [!var1]/[!var0]/[!var2] is/was/will be a [!str]
```

Figure 6: Two forms of century offset

```
3.5 if C = 18          3.5 [!eq [!var9], 18]
    then CO = 2        var6 2
    else if C = 19     [!else][!eq [!var9], 19]
    then CO = 0        var6 0
    else if C = 20     [!else]
    then CO = 6        var6 6
    else {error}       [!end][!end]end if

or:
3.5 let CO = 2( 2( [C/2]-9) + 1-mod(C, 2))

3.5 [!umult 2, [!usub [!uadd [!umult 2, [!usub [!udiv [!var9],
2], 9]], 1], [!umod [!var9], 2]]]
```

with the actual CLI macro, so you can follow what is actually being done in the macro, as well as quickly use the algorithms in an HLL environment. My examples use the variables listed in Figure 1, along with their CLI equivalents. Figure 2 shows how leap years are calculated, Figure 3 shows the conversion from Gregorian to Julian dates, Figure 4 shows the conversion from Julian back to Gregorian, and Figure 5 shows the calculation for the day of the week.

Before executing the day-of-week macro, create seven files with the following naming format: dow.data.0, dow.data.1, . . . dow.data.6. Then enter the values that you want for Sunday, Monday, . . . Saturday, respectively.

To allow for dates in the 1800s or 2000s, you need to make an offset to your values. January 1, 1900, was a Monday. This means that December 31, 1899, had to be a Sunday. According to our calculations, however, it would have been a Friday. To make it come

out right, you need an offset of two for the 1800s. Applying similar logic, December 31, 1999, will be a Friday, so January 1, 2000, has to be a Saturday. However, these calculations indicate a Sunday, so the offset for the 2000s is six.

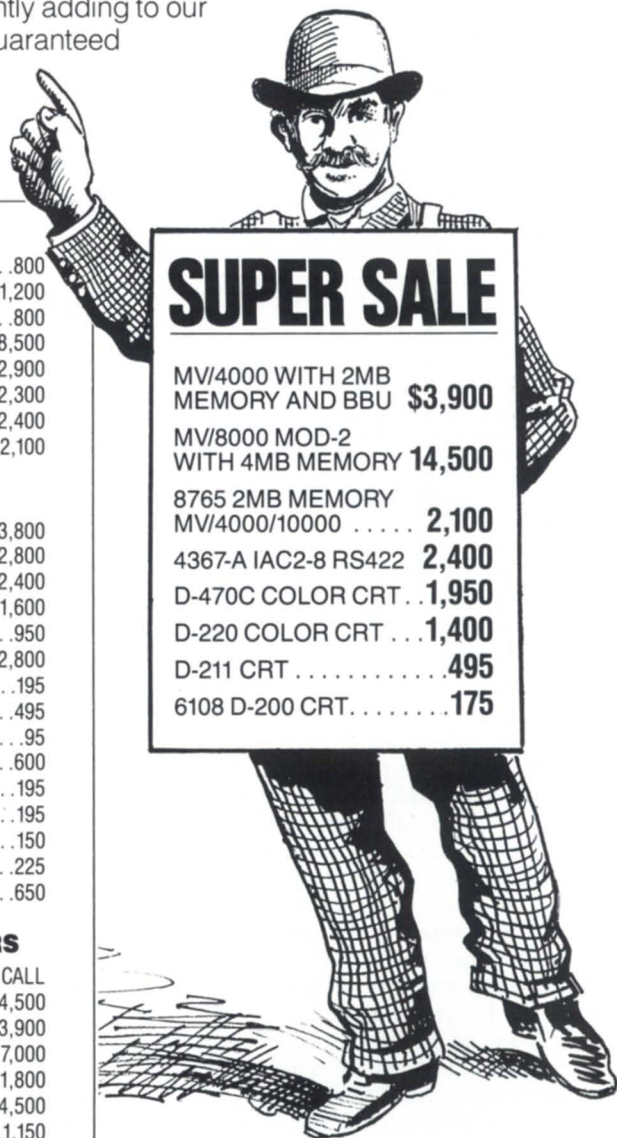
The correction factor should be computed prior to line 4 in the day-of-week algorithm in one of the forms shown in Figure 6.

Line 4 should then read: let W = mod(LD + [LD/4] + D + M2 + CO, 7); CO can be considered the century offset. (I have reused var6.) The first form is much easier to read and understand, but the second lends itself to use with programs such as Present. Δ

Phillip W. Paxton manages an MV/10000 with 125 user terminals for the St. Vincent Hospital and Health Care Center in Indianapolis, IN. Contact him with questions or comments at 317/871-3803.

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Do it yourself

Creating Wordperfect macros is easy

by Guy Pribyl
Special to Focus

After two years of using Wordperfect, I am finally comfortable with macros. I know I'm not alone in my fear of this seemingly complex feature; many people shy away from macros thinking the feature is a powerful tool only for advanced users. Somehow "writing macros" sounds too much like "computer programming." Although creating advanced macros does require a little expertise, the basic macro feature of Wordperfect is easy to use.

A Wordperfect macro is simply a stored sequence of keystrokes that can be retrieved later exactly as recorded. Just like a tape recorder that records your voice, a macro records a sequence of keystrokes for quick and easy playback. Any combination of keystrokes can be used to create a macro, because there is no limit on the number and size of macros that can be created and stored.

Think of a task that you do several times a day—typing a certain name or address, closing a letter, or including a boilerplate paragraph. Whenever you find yourself pressing the same sequence of keystrokes, create a macro to do it for you. Because I type the company name more than a dozen times a day, I wanted a macro to type "Wordperfect Corporation." I begin by pressing CTRL F10, the macro define key. It then asks me to name the macro. The name can be either a keystroke (such as CTRL F13) or a word (such as "letter"). I chose F14.

After entering the name, the message "macro def" flashes on the screen as my cue to define the macro. Be careful which keys you press at this time, because they will become part of the macro. After I record my exact keystroke sequence, I press CTRL F10 again. The "macro def" message stops flashing, and my macro is recorded under the name given.

Now, each time I press F14 on my machine, my macro types "Wordperfect Corporation" and saves me 23 keystrokes. Macros couldn't be easier.

I also use a simple macro for the closing of my letters. When I press F15, my macro types:

Sincerely,

Guy Pribyl
Director of Marketing, DG Products

This macro saves me about 60 keystrokes. Here are a few more ideas for simple macros.

- Much of a business letter is the same—location of the date, margins, tabs, and closing. Create a macro that will retrieve a basic letter format, and you can fill in the address and body of the letter.

- Create a macro to convert a large file of names and addresses into a secondary merge file by adding ^R at the end of each field and ^E at the end of each record. This could take hours if done manually, but a macro can do it automatically in a matter of minutes.

- Use a macro to convert footnotes to endnotes, or to change bold text into underlined text throughout a document.

Advanced macros

Depending on the expertise and creativity of the user, virtually anything Wordperfect can do can be included in a macro. The only limitations to creating complex macros are disk space and the user's imagination. Many times, excited end-users have pulled me aside to show off some new macro application they have put together. I must admit that some are better than others, but I've seen some spectacular macros.

Phil Matsumoto of McClellan Air Force Base in Sacramento, California, was given the assignment of finding a word processor that a person off the street with no training or experience could use to create a difficult report for the Air Force's mainframe message system. The Air Force had been using typewriters to complete the reports for the message system's optical character reader. However, the typewriter process was slow, and typists required a lot of training in order to create a document that would be accepted by the system.

When Phil first explained to me what he needed, I wondered if Wordperfect could be the answer. At the time, I knew that it could create conditional macros and that a "macro pause" could be used in special applications, but I had never used these features.

About two weeks later, Phil showed me what he had put together. I was amazed. After choosing a menu item from Wordperfect Library called Main-

frame Message Generator, the Wordperfect banner appeared, and the macro took over. The program macro asked me to insert basic information—name, security code, address—and then my message. The margins and tabs had been preset; all I had to do was follow instructions. After I completed the message, the macro sent the document to the printer. If I hadn't seen the banner at the beginning, I wouldn't have believed it was Wordperfect. I ran the macro over and over to figure out how it worked.

Advanced applications like this usually involve chaining macros. For example, you can link macros together so that when macro A is finished, macro B automatically starts. A repeating chain allows you to search for any condition in a document (such as a word, phrase, or function) and replace it with a desired correction. The macro will continue repeating itself until the search results in a "not found."

A conditional macro chain is used when you want a macro to make a decision. You can create a conditional search macro that will chain to a subsequent "found" or a "not found" macro, depending on the success or failure of the search. A conditional macro continues branching out to other macros indefinitely. Phil used this feature extensively to create the questions and menus in his report macro. He also used the macro pause feature to pause at certain points in the macro to insert variable information. A macro pause could also be used just before a document is sent to the printer in order to insert the correct font.

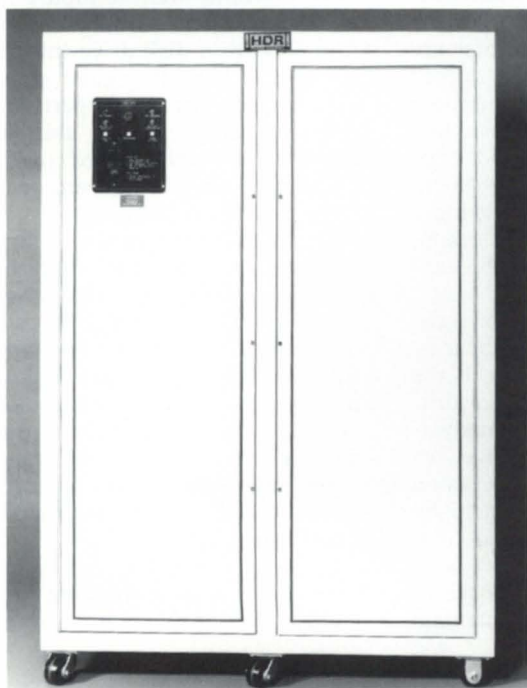
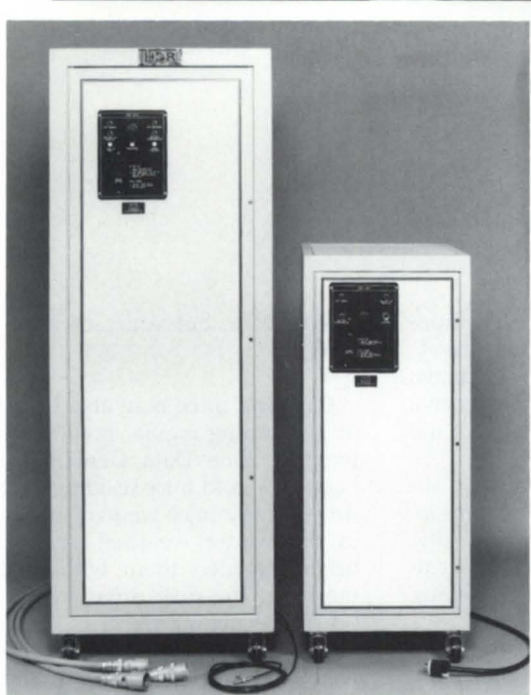
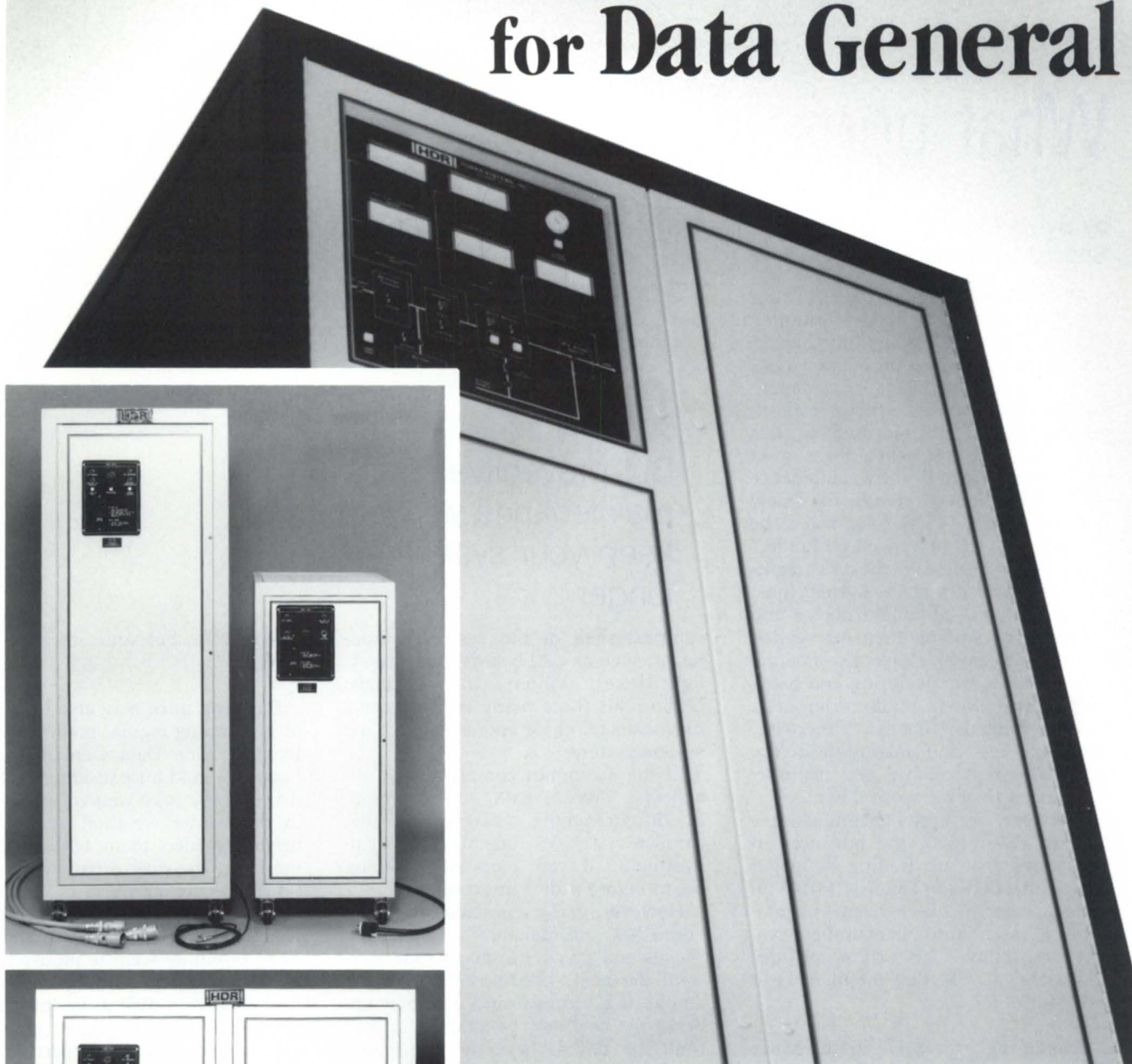
Additional information about Wordperfect macros is found in the reference section of the Wordperfect 4.2 manual or in the special features section of the 4.05 manual. With a cursory glance at the manual—and a few tips from macro users—you will discover that macros aren't as mysterious as they appear.

If you have developed useful Wordperfect macros that we could print in future articles, please send them to me.

△

Guy Pribyl is the director of marketing for DG products for Wordperfect Corp., 288 West Center, Orem, UT 84057; 801/227-4100.

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What goes up, must come down

by Sylvia Michaels
Special to Focus

All of your efforts have paid off. Your computer system is up and running and being fully utilized within your organization. Employee productivity has increased, and people are as dependent on the computer as on their morning cup of coffee. Unfortunately, this can cause problems when the system must come down for a maintenance check. Users may complain: "How can we work?" "How long will it be down?" "We might as well go home."

It's every system manager's nightmare to mention that the system must be taken down—if not to doctor and maintain the system, then for needed rest and relaxation. Preventive maintenance (PM) is the doctoring and babying that everyone (including computers and peripherals) needs. Otherwise, they take rest and relaxation in the form of system crashes and malfunctions when they are worn down.

Therefore, preventive maintenance is the key. Even with the advances in technology that are leading to longer Mean-Time Between Failures (MTBF) on system components, system maintenance is essential to maintaining a system's reliability. This article includes approaches to PM that might make it less painful for users.

Scheduling preventive maintenance is one major obstacle. At Concept Automation, a Data General Comprehensive Maintenance Organization (CMO), a PM schedule is set at the beginning of the year, and our customers know what should be accomplished on these dates. This schedule can be sent to the client's end-users, and therefore, they know when and what to expect. (A little consideration can go a long way.) Conflicts can be resolved, and system down time won't be a surprise.

Concept Automation generally performs PMs once a month. Each month, the emphasis is placed on a specific group of components or peripherals to ensure all equipment is thoroughly examined and tested. Every six months, an extensive PM is performed that en-

compasses all of the system components, such as CPU boards, disk drives, tape drives, printers, and terminals. During this twice-yearly PM, extensive diagnostic checking and analysis of the system is done.

But preventive maintenance will help keep your system up longer

compasses all of the system components, such as CPU boards, disk drives, tape drives, printers, and terminals. During this twice-yearly PM, extensive diagnostic checking and analysis of the system is done.

In the six-month comprehensive diagnostic, MVSYSYSTEMX, an extensive multiprogramming diagnostic that simulates AOS/VS operation, is run overnight. It can pinpoint a failing board before it dies unexpectedly.

However, end-users shouldn't allow "remedial maintenance" (alias the "aches and pains") to go unaddressed until the next scheduled PM. For example, if a terminal and a printer are broken, a user may be tempted to wait until the PM to have the equipment fixed. Although this might seem reasonable, it would leave the field engineer less time to pamper the system. Just as you wouldn't put off having a broken arm set until your next checkup, don't let your maintenance slide until the PM.

We maintain a complete list of serial numbers on all of our client's boards. Besides keeping the boards up to the proper revision levels, these records help ensure that a board isn't inadvertently removed. Situations have occurred where a customer questioned whether a failed component actually belonged to them. Maybe a good component was replaced with a faulty component when a third party was working on the system. These situations

rarely occur, but you can never be too careful.

Catching mice may also be a benefit of performing regular preventive maintenance. One Data General customer had a few cold mice residing in the disk drive. These mice wanted to stay warm in the winter weather, and the disk drive provided them with heat. One morning, the disk drive was powered on (to a rotation speed of about 3,600 rpm—about 150 mph), and the mice were flung into the walls of the drive. They promptly went to mouse heaven, and the system manager was confronted with a disk drive that came to an abrupt halt. If regular preventive maintenance had been performed on the disk drive, maybe this disaster could have been avoided (mouse remains may have been seen, or mouse-traps could have been set).

Preventive maintenance for disk drives should include analyzing the error log created by AOS/VS and performing a more thorough investigation of suspicious devices. The error log from an Argus drive may indicate that the drive needs to have bad blocks remapped. We try to evaluate quarterly whether disks need to be remapped. Even with this regular schedule, the disks may need to be evaluated more frequently.

Some of the older, removable disk pack drives require checking the alignment of the heads at least once every

Clean-up crew

Periodic checkups and user awareness are the best preventive measures

by Gary MacDonald
Special to Focus

The term "preventive maintenance" may cause you to conjure up images of Data General field engineers regularly visiting customer sites to make certain adjustments to prevent catastrophic system failures.

But recently, the term—and activity—has evolved into what Data General calls "periodic maintenance." The change is not just a matter of semantics.

"The design of our products has changed during the last five to eight years such that the old philosophy of preventive maintenance really no longer applies," said Dick Jaeger, manager of Data General Field Engineering's Product Support Engineering in Durham, New Hampshire. "We've worked closely with our design and manufacturing engineers to make our products more reliable from the start. This reliability is a by-product of today's overall state of design, materials, and technology."

Another by-product is the shift from preventive to periodic maintenance. According to Jaeger, field engineers in the past were required to be on site regularly to clean, oil, and readjust the products; replace worn-out parts; and generally make sure everything was working properly.

However, today's design criteria provide tolerance and compensation for mechanical wear. Disk drive heads and media are protected in sealed environments. New materials no longer call for constant external lubrication of moving parts, and in fact, the number of moving parts in newer machines has been

Ten terminal sins

- 1. Thou shalt not bring liquids or sticky substances near your terminal.*
- 2. Thou shalt not bend or get fingerprints on magnetic media.*
- 3. Thou shalt not zap your terminal with static electric discharge.*
- 4. Thou shalt not pull out terminal connectors with undue force.*
- 5. Thou shalt not smoke around delicate electronics.*
- 6. Thou shalt not use aerosol sprays or powders near cooling vents of computer components.*
- 7. Thou shalt not pull harshly on paper coming out of the printer.*
- 8. Thou shalt not stack any objects on top of a terminal.*
- 9. Thou shalt not hang plants above equipment.*
- 10. Thou shalt not ignore or postpone periodic routine maintenance.*

reduced over the years. Cooling airflow through products is designed to be more efficient and clean.

Thus, rather than taking definitive steps to prevent failure, such as regularly replacing a part, field engineers and users can simply perform check-ups to monitor overall health and take appropriate action when necessary.

"The hardware logic of the past made it impossible to do the things we are doing today in regard to making the peripherals fault tolerant," Jaeger said. "We are taking full advantage of the technology today. Of course, we still have customers using older products, such as S/140s and Novas. These still require certain preventive maintenance procedures, which we certainly deliver."

"We are working to make things as easy as possible for our customers, given the technology available today," said Jim Gossett, manager of Product Technical Support in the Milford Field Engineering headquarters. "We're moving toward systems that monitor themselves, allowing us to be more proactive than reactive."

For example, the Eclipse MV/20000 and MV/15000 systems have the capability to flag problems such as airflow faults, operating system panics, fan faults, and memory errors. The system can then alert not only the local operator, but for Data General service contract customers, it can also alert the Data General Customer Support Center in Georgia, where action to keep the system running can immediately be initiated by remote technicians.

The company also introduced a new diagnostics program for certain models of disk drives that is capable of giving early warnings of imminent head/disk assembly failures. Once a warning is made, a replacement can be scheduled at a convenient time.

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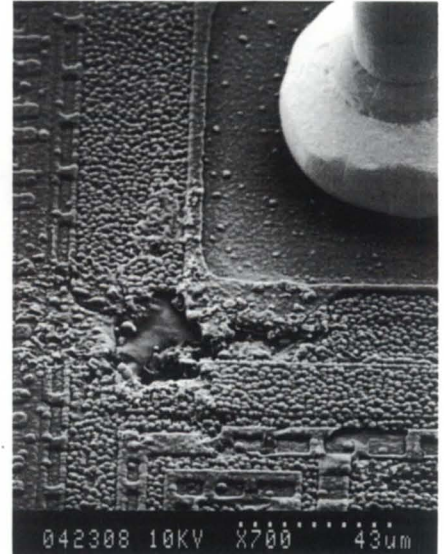
Other efforts in remote periodic maintenance include programs that will allow software patches to be installed remotely and on-line diagnostics programs that can be run to flag faults even while users are still working on the system.

The majority of periodic maintenance procedures are delivered on site, and processors aren't the only major recipi-

ent, since it is the nature of CPU and communications cards not to require such service, according to Gossett. "Certain processors on the low end may simply require cleaning of filters and quick checks of battery back-up units, which can be done by the users' field engineer and, in some cases, by the users themselves."

Users can also easily perform the

necessary periodic maintenance for their peripherals—printers, disk drives, magnetic tape drives, plotters, and the like. It is on these products that periodic maintenance plays its major role.



This maintenance basically consists of keeping equipment clean. Air particles, fingerprint contaminants, and oxide buildup can cause printers to run afoul and threaten data integrity on drive media. Routine cleaning procedures performed by the user, such as keeping tape and paper paths clean, can significantly increase equipment up time and availability. For those periodic maintenance procedures where a higher degree of technical skill is required to avoid equipment damage, Data General field engineers are able to deliver the service during their regular on-site visits.

To assist users with periodic maintenance procedures, Data General is implementing its Operator Care Program. Users receive clear instructions on how to perform the necessary routine cleaning procedures, which are first demonstrated by the users' field engineer. Configuration-specific operator care cards explain how the procedure should be performed, how often it should be done, how long the cleaning should take (usually between 5 and 20 minutes), and of course, what materials are required to clean the peripheral. Users also receive an initial discount on their first purchase of cleaning supplies, which most often consists of 90 percent isopropyl alcohol, lint-free cloths, and foam-tipped applicators or swabs.

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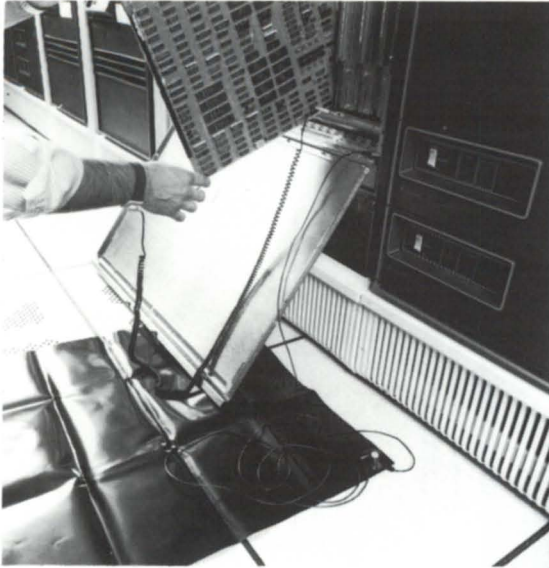
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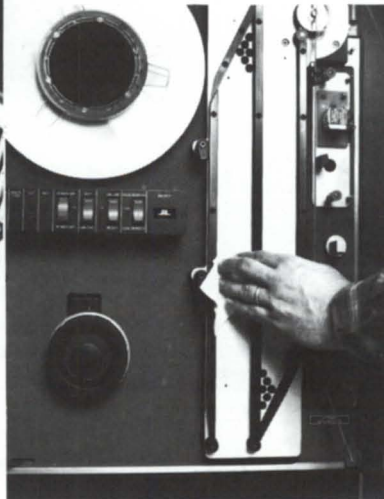
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◀ Field engineers use grounded mats and wrist straps when handling boards to prevent damage from ESD.

Clean equipment, such as a tape drive's vacuum columns, keeps a system up and running. ▼



"When you look at a printer," said Jaeger, "no matter how reliable and tolerant its design is, you're still going to get lint and paper dust accumulating in open cavities. That's what causes many failures. If they're not kept clean, you lose performance and up time."

For example, when documents are printed poorly, it is often assumed that "the ribbon is bad." However, the cause is often ink clogged up on the letters of the daisy wheel or thimble. A simple cleaning with the right equipment often cures the problem. Paper jams are often caused by buildup on printer platens. Again, a simple procedure can eliminate the issue.

Through DG Direct, users can obtain appropriate cleaning kits for their equipment. According to Ronnie Todisco, DG Direct product manager for printer and CRT supplies, the kits are specifically designed for use with Data General equipment. The kit's sterile applicator leaves no fibers in sensitive areas, and is designed so that cleaner doesn't drip into equipment unnecessarily.

"We test all the products with our equipment to make sure they are appropriate," said Todisco. "And when new products present new requirements, such as laser printers or the drives for new processors, we will have the appropriate supplies." For example, DG Direct recently introduced a minitape cleaning kit specifically engineered for the MV/2000 and MV/1400 systems. Such kits can be ordered by calling DG Direct's toll-free lines at 1-800/343-8842.

Of course, there are other things users can do to maintain their equipment between visits from their field engineers. Some are as simple as using dust covers on printers, terminals, and keyboards, and using molded keyboard covers to protect internal circuitry from common office accidents, such as coffee spills and cigarette ashes.

Others involve ensuring the proper environment for the machines. The machines should be receiving the proper electrical power. Temperature and humidity should be controlled, and the equipment should be protected from outside influences, such as electrostatic discharge, electromagnetic interference, and radio frequency interference.

"It's often a matter of common sense," Jaeger said. "Simply provide normal care. Keep things clean and looking presentable. Provide adequate ventilation. Don't pile boxes on top of your equipment. Don't block the airflow. Don't expose the power switches in high-traffic areas. All these things influence product up time. We all have to be sensitive to this." ▲

Gary MacDonald is a public relations specialist for Data General Service, 50 Maple St., Milford, MA 01757; 617/478-4000.

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Sneak preview

Big changes in rev 3 of CEO. Part I of III

by Paul Duck
Special to Focus

Data General has announced, but as of this writing not yet shipped, CEO 3.0. However, I have managed to squeeze enough information out of them to tell you some of the general characteristics of the "all new for 1988" version of what I consider the world's most advanced business automation product.

I got my chance to see 3.0 in action at the NADGUG Conference 87. The reaction: *Oh, my!* The first thing to say about this revision of CEO is that Data General has obviously listened to its customers and to the industry. The many enhancements aren't just window dressing; they provide much of the functionality that we've been asking for. (Please note: Data General is its own biggest customer, with its worldwide CEO network.)

There are also some fairly controversial changes—notably the way CEO-write has been turned into a separate product. For reasons of space, I'm going to cover that subject in a later issue.

Meanwhile, the editor has been hassling me about how lengthy this article has gotten. (He's threatened to serialize it into 50 or so installments.) Figure 1, which provides a quick summary of the changes and enhancements in CEO 3.0, might help give you a view of the big picture. The paragraphs that follow will fill in more of the details—at least until we run out of space.

The mail system

A new part of CEO called CEO NSA (Name Server Agent) allows users in a CEO network to send mail without having to know the host name of the computer on which the recipient works. As you read through the notes on

changes to the mail system, it may help to know the following NSA concepts.

Domain—A domain consists of a group or community of CEO hosts and the users on those hosts. If your network includes a small number of CEO hosts, they will probably all be part of one domain. To send mail to a user within your domain, you need to type only the username or alias in the address field. CEO NSA knows the host where the user works and supplies that

domain name" to send mail to recipients in another domain.

CEO username—This replaces the term "primary alias" used in previous revisions of CEO. The CEO username is the main name by which you are known in the NSA data base. It also is the name that appears on your inbox, calendar, and any mail that you send out. In your CEO user profile, the CEO manager defines your CEO username and may define as many as four other names by which you can receive mail. These other names are known as aliases. Don't confuse this term with personal aliases, which you create yourself.

Global/local/personal—Names and mailing lists on your system can have global, local, or personal visibility.

Global alias—A name that is known and available for use anywhere within a domain is a global alias. If you have a CEO username or alias with global visibility, anyone in your domain can send mail to you by addressing it to that name.

You can also use global aliases for interdomain mail. To send mail to a person in another domain using a global alias, type the address in the format "global alias:domain name."

Only CEO managers can create or maintain global aliases. The CEO manager defines aliases as local or global in the CEO user profile for each user.

Global mailing list—A mailing list with global visibility is available for use by anyone within the domain. For instance, if a global mailing list named Secretaries exists on host ABC within domain USA, then it is possible to give anyone in the domain access to that mailing list. Only CEO managers can create and maintain global mailing lists. The creator of a global mailing list fills out an access control list that specifies which other users have access to the mailing list and the level of access for each user.

Local alias—A local alias is known and available for use only on the system on which it is defined. For instance, if a user named James Smith on host ABC has a local alias of J Smith,

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industry**

information to the post office, which sends the mail to its destination.

If your computer is part of a large network, the CEO managers and planners at your site may decide to divide the network into more than one domain. For example, if you work for a multinational corporation, you may have a domain named USA and a domain named Europe. In a CEO network with more than one domain, you must use the addressing format "username:

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FOCUS ON: CEO 3.0

Figure 1: Overview of changes in CEO rev 3.0

Part 1

Changes to the mail system

- Domain = a community of CEO hosts
- CEO username replaces primary alias
- Global, local, and personal visibility applies to usernames, mailing lists, and aliases
- Access control for mailing lists

Procedures for sending and receiving mail

- Addressee flexibility
- Timed mail
- Eyes only option
- Short messages can be longer
- New function key assignments

Changes to the inbox

- Display of document type
- Filing of messages
- Filing of forwarding comments
- Inbox wastebasket with options to view, restore, shred, survey, and print
- The inbox is accessible from interrupt menu

Mailing list changes

- Personal/local/global terminology replaces public/private and visible/blind categories (automatic conversion)
- Copy mailing list option
- Personal aliases
- Index menu on addressee fields
- Mail a file now a permanent option
- Mail a folder option

Part 2

Survey management extends the old "reformat or print menu"

- File
- Print
- Sort
- Reformat
- Find

Printing documents

- Printing to pass-through printers
- Inch/centimeter option

Filing

- Display of archived drawers, folders, and documents
- Remember last folder and document used in each drawer
- Mail a folder
- Shred option in wastebasket
- Import and store files in various types
- Export to AOS while preserving print specifications
- Export various file types
- Inventory while you wait

Part 3

New calendar features

- Automatic holidays
- Remote calendar access
- Scheduling available from interrupt menu
- Option to print calendar events
- No wait for scheduling
- Scan several calendars

Utilities

- List processing
 - New merge document printing options
 - Suppress printing of merge symbols
- New time and date format options

CEOWrite

- Compound documents

Other changes

- Enhanced spell checking
- Automatic archiving

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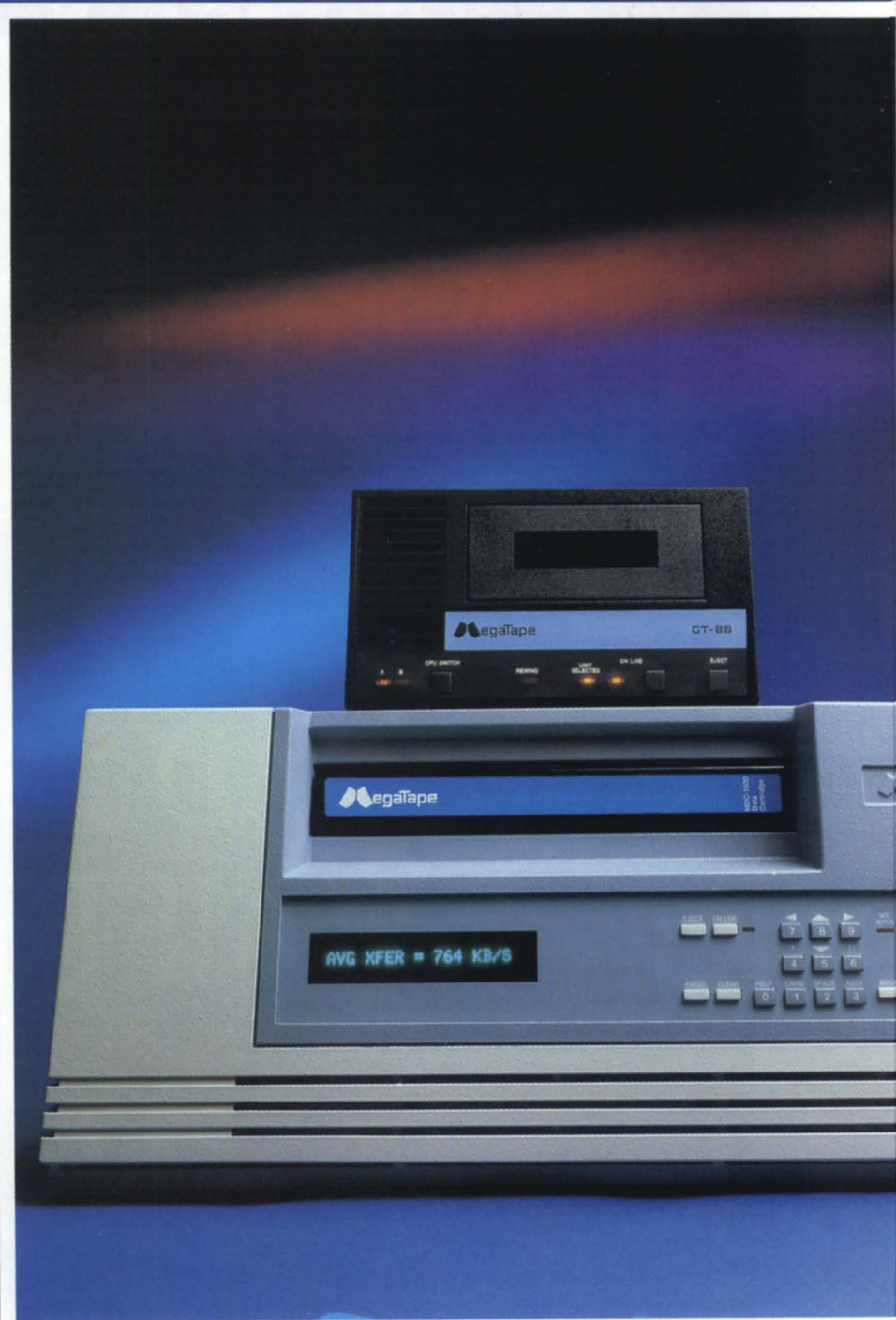
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then only users on host ABC can send mail to him using the address J Smith. People on other hosts would have to use an address that is defined globally. Perhaps Smith's CEO username, James Smith, is defined globally. Then users on other systems could address mail to James Smith. Only CEO managers can create local aliases.

You can use local aliases on other hosts by typing the alias name and the host name in the format "local alias:host name."

This access to local aliases may be useful if your network of CEO hosts makes limited use of global aliases.

Local mailing list—A mailing list with local visibility is known and available for use only on the system on which it is defined. It may contain global aliases or names of users on other systems, but only people on the local system can be given access to it. It can also contain personal aliases of the user who creates the list, but it cannot contain personal mailing list names of individual users.

Any user can create a local mailing

list. Like a global mailing list, a local mailing list has an access control list in which you specify the other users that have access to the mailing list and the level of access for each user.

Personal alias—Personal aliases are names by which you can refer to other users for sending mail. A personal alias is similar to the remote alias in former revisions of CEO, except that you are the only person who can create and use your personal aliases. In contrast, all users on a system where a remote alias is defined can use the same remote alias.

Personal aliases provide an easy way to send mail to users with names that may be hard to remember or spell. For instance, if you often send mail to a person with the CEO username Mike Mozsgai, you may want to give him the alias of Mike or Moz. Then when you type the alias in an address field, the post office knows to direct mail to Mike Mosgai.

With rev 3.0, your use of the new personal alias feature should be more frequent than the use of remote aliases.

Remote aliases were mainly designed to make it easier to send mail to people on other hosts. Instead of typing "Michelle Martin:FINANCE," users could just type the remote alias "Michelle Martin." Now that CEO NSA has eliminated the need to use the host name in a mail address, remote aliases will no longer need to exist for that purpose.

However, you still may want to use remote aliases to send mail to users on systems that haven't upgraded to rev 3.0. Pre-revision 3.0 systems don't include NSA, so when sending mail to these systems, you will not be able to use the rev 3.0 addressing convention of CEO username only. You have two ways of handling this.

1. Address mail using the old format "username:host name."

2. Have your CEO manager create a remote alias for the person you want to reach on the pre-revision 3.0 system. You can simply address mail to the person's remote alias, and you will not have to remember or type the name of the host computer where that person works.

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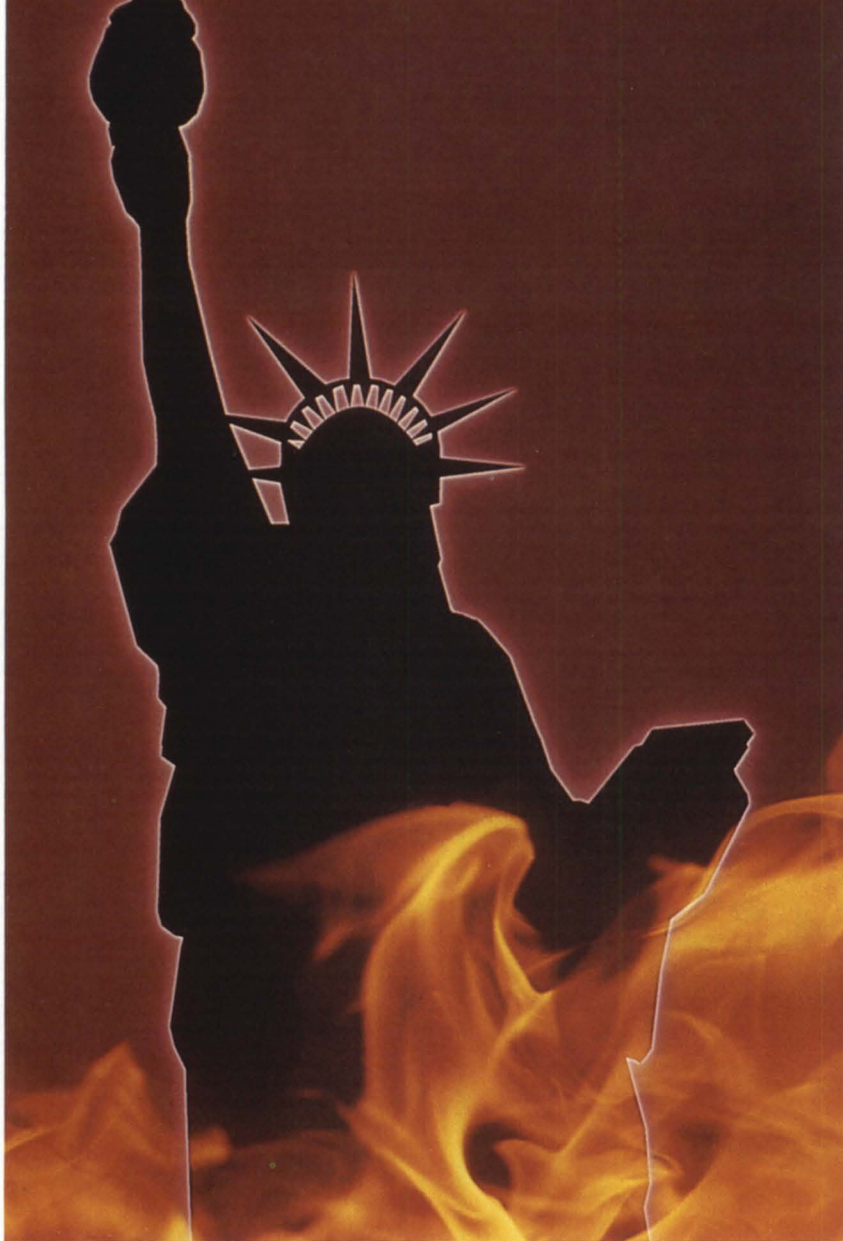
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Personal mailing list—If you want a mailing list that only you can use, edit, or delete, then specify personal visibility when you create it. Because a personal mailing list is for your use only, you do not need to create an access control list for it.

Access control list—When users create local or global mailing lists, they fill out an access control list, which can

limit the access to and use of a list. In other words, even if a mailing list has global visibility, the creator of the list may want to grant only a few users the ability to view, edit, or delete the mailing list. Levels of access for local and global mailing lists are defined as follows, from highest to lowest. (A higher level of access automatically includes the privileges of all lower levels of

access.)

Owner—A user with owner access has complete control of the mailing list and can delete or rename it, add members, delete members, or change the access control list.

Edit—A user with edit access can add members to or delete them from the mailing list.

Read—Read access means a user can view or use the mailing list but cannot edit the list.

Reference—A user with reference access to a mailing list can use it to send mail but cannot view or edit it. (At present, all users automatically have reference access to mailing lists.)

If you want to grant blanket access to a mailing list for all users, you can enter the template character "+" in the owner, edit, or read column of the mailing list access control list menu.

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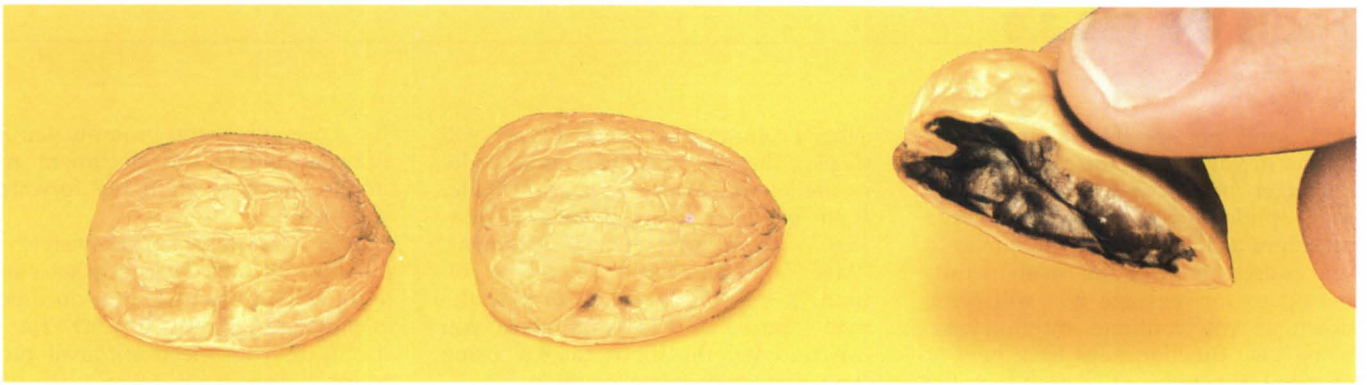
Sending mail

To, CC, or BC on any field—The short message, mail a document, and mail a file menus, as well as the new mail a folder menu, all give you the option of typing "To:," "CC:," or "BC:" on any addressee field, including the first one. The first field still appears automatically as "To:," and the cursor goes automatically to the first addressee field, but you can use the BACK FIELD function key to move to the first field and change the "To:" to a "BC:" or "CC:" if you want.


Scrollable address space—The space for addressees on mail menus (short message, mail a document, mail a file, and mail a folder), can now accommodate up to 20 addressees. The menu will continue scrolling down automatically as you enter their names.

Timed mail—With revision 3.0, you can specify that you want to delay delivery of mail until after a certain time, or assure delivery before a certain time. You can indicate in your electronic mail profile whether you want the timed mail option that is available for messages, documents, and files.

Eyes only mail—If you send a message using the new eyes only option, the recipient will only be able to view the message, delete it, or reply to it. This assures security for private or confidential messages, because recipients cannot file, forward, or print eyes only messages. Replies to eyes only mail are automatically eyes only also, and the recipient will be unable to file, forward, or print them. Like the timed mail op-



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tion, you can specify the eyes only option in your electronic mail profile.

Longer messages—The short message option now allows you to write messages as long as 20 lines. Similar to the addressee fields for mail menus, the space for message text will scroll down as you continue entering text. Some CEO function keys have new or changed functions as a result of the new longer message capability. The following are function keys with new or changed functions for editing message text.

- **DELETE** removes the current line (where the cursor is) and adjusts the position of remaining lines in the message.

- **PREVIOUS SCREEN** and **NEXT SCREEN** scroll the message text area.

- **INSERT** inserts one blank line in the message text area where the cursor is positioned.

- **END PAGE** finishes editing the message and moves the cursor to the next field in the menu.

Inbox

Mail type—The inbox now has a column for displaying whether a message you receive has an attached document. If a document accompanies the mes-

sage, a column labeled "mail type" will display the CEO document type code, or the letters "AOS" if it is an AOS file. If the message is a regular CEO message without an attached document, "Msg" will appear in the mail type column. If you prefer not to display the mail type column in your inbox, you can reformat the inbox display using the survey management option.

Filing—When filing an AOS file with an attached message (option 2 from the inbox or message display menu), you now have the option of filing the message or the file. If you file the message, the CEO system will prompt you for a CEO drawer, folder, and document name under which to file it. If you file the file, the system will prompt you for a pathname under which to store it in the AOS/VS directory system. You can file both the message and the file one at a time.

Forwarding comments—When you forward an item from your inbox (option 4 from the inbox or message display menu), you can now file your forwarding comments in the CEO filing system. When you have completed information on the forwarding menu, the

file a message menu prompts you for a drawer, folder, and document name under which to store the forwarding comments.

Inbox wastebasket—Revision 3.0 provides an inbox wastebasket similar to the filing wastebasket for documents in previous revisions of CEO. You can specify in your electronic mail profile whether you want to use an inbox wastebasket. If you do not use it, messages you delete will be gone for good, as in previous revisions of CEO. If you choose to have an inbox wastebasket, deleted messages will go there, where they remain until the CEO manager runs a janitor program to clear them out. The inbox wastebasket menu (option 9 from the mail or inbox menu), offers five options.

1. **View**—You can view one or several deleted messages.

2. **Restore**—You can restore deleted messages to your inbox.

3. **Shred**—If you do not want a deleted message to remain in your inbox wastebasket, you can "shred" it. This in effect destroys your message so that it is no longer accessible or retrievable, even from the inbox wastebasket. You

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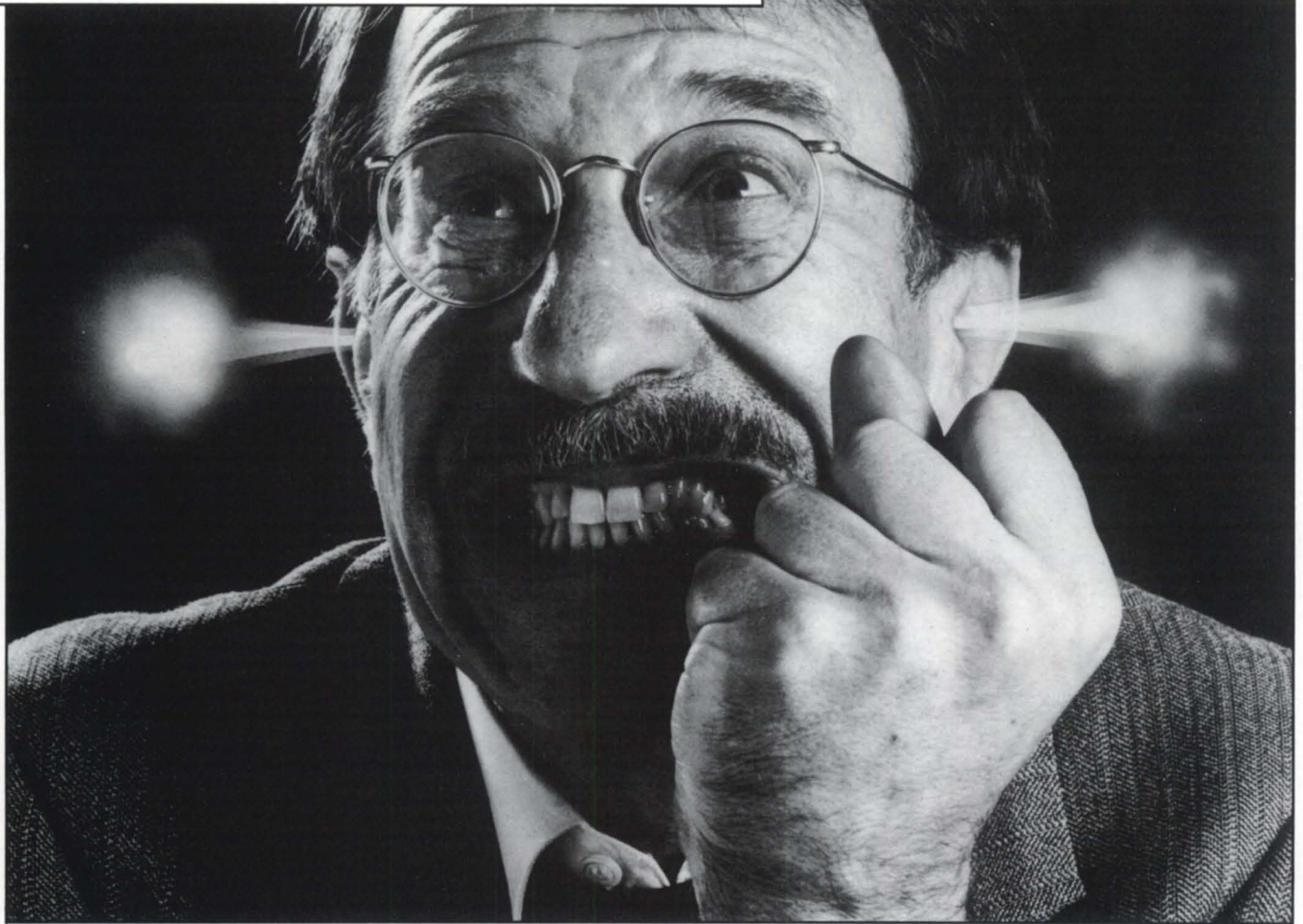


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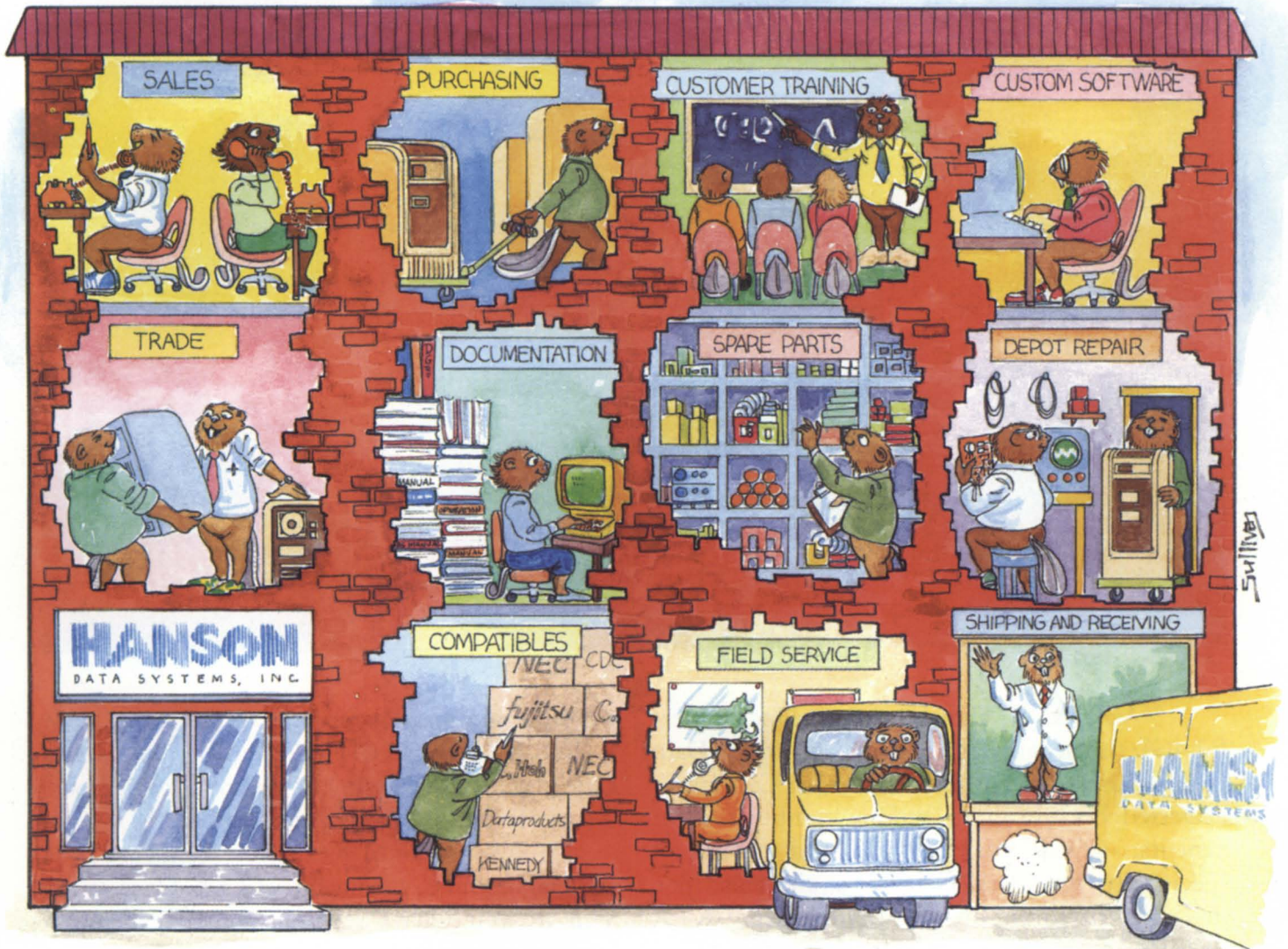
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should periodically shred as many messages as you can to prevent your inbox wastebasket from becoming too full.

4. Survey management—If you want to work with the complete set of deleted messages in your wastebasket, choose survey management (option 4) on the inbox wastebasket menu. You can then file or print the inbox wastebasket menu, reorganize the order of items, or reformat the display of the menu.

5. Print—You can print a copy or copies of deleted messages. The menu will prompt you for a printer name and number of copies.

Inbox from interrupt—When you press the INTERRUPT function key, the cursor automatically rests at option 3, "inbox," whenever you have new mail in your inbox.

Mailing lists

You can now add or delete a mailing list member directly from the mailing list menu, instead of going through the edit mailing list menu. This allows you to add or delete names from a mailing list without having to view the contents of the mailing list.

For specifying access to mailing lists, revision 3.0 has replaced the options of public, private, visible, and blind with the visibility options personal, local, and global. The definitions of these options are as follows.

Personal—A personal mailing list is one that a user creates solely for his or her own use; no one else has access to it.

Local—A mailing list with local visibility is available for use by others on the host computer where it is created.

Global—A global mailing list is available to users on other computers within a domain, in addition to being available to other users on the local host. Part of the installation procedure for revision 3.0 includes a program that converts the contents of the post office data base to a form compatible with revision 3.0. Figure 2 summarizes how

the software converts pre-existing mailing lists.

Once your mailing lists have been converted, you may want to change their visibility or access control lists. You can also edit the lists to remove the host names of any users who are now in your domain (the conversion software doesn't do this for you). For instance, if one of the addressees on your mailing list is Don Johnson:MIAMI01, and the host MIAMI01 is in your domain, you can delete the host name and simply leave the name Don Johnson on the list.

Copy mailing list—The mailing lists menu has a new copy mailing list feature (option 7). The main purpose of this option is for you to obtain a copy of a mailing list that someone else has created. You must have at least read access to a mailing list to be able to copy it. When you choose option 7 on the mailing lists menu, the CEO system prompts you for the name of the mailing list that you want to copy and a new name for the copy of the mailing list. If you enter an existing mailing list name at the prompt for the new name, the system asks if you want to append your copied list to the existing list. You will be able to do this only if you have edit access to the existing list.

Personal aliases—Personal aliases, option 5 on the mail menu, allows you to create, view, change, delete, and survey personal aliases—names by which you can refer to other users for sending mail.

Expanded index on addressee field—Revision 3.0 offers added capabilities when you press the INDEX function key on a "To:" field. Instead of immediately displaying the on-line user directory, the CEO system displays the index type menu, from which you can choose the type of addresses you want to see. Your options are the following: 1) personal aliases, 2) local directory, 3) global directory, 4) personal mailing lists, 5) local mailing lists, or 6) global mailing lists.

As its name implies, a local directory contains names of only local users defined on your system.

A global directory can contain names of any users within your domain. Your CEO manager creates and maintains the global directory, and it is ready to display whenever you choose option 3 from the index type menu. Note that if your user community consists of more than one domain, you may be viewing a corporate directory when you choose

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Figure 2: Mailing list conversion

Pre-revision 3.0	Revision 3.0
private blind list	personal list
private visible list	local list with read access for all local users
public blind list	local list with reference access for all local users
public visible list	local list with read access for all local users

option 3. The corporate directory contains names and addresses of users in all domains. Your CEO manager creates a corporate directory by combining the global directories of each domain.

Note: Separate local and global (or corporate) user directories are also available when you select the user directory, option 6, from the interrupt menu. From the interrupt menu, the

system automatically displays the global user directory. You then have the options of viewing the local directory, going back to view the global directory, or reformatting the directories using survey management.

Mail a file—The mail a file choice (option 7 on the mail menu), has become a permanent option. Prior to revision 3.0, this option only appeared on

your menu if you specified in your mail profile that you wanted to be able to mail files other than CEO documents.

Mail a folder—You now have the ability to mail entire folders. The mail a folder option is available from both the mail menu (option 8) and the folders menu (option 9). When you mail a folder, the CEO system prompts you for a drawer and folder name. Then you fill in the mail a folder menu with fields for subject and comments, and the options certified, confidential, acting for, and timed mail, if your mail profile allows you to have them. CEO will then mail the entire contents of the folder to the addressees you specify.

When someone else mails you a folder, it appears in your inbox as any other piece of mail would. When you choose to view it, the message display menu shows any comments that were mailed with the folder, and the cursor automatically rests at option 2, "file." You must file the documents before you can do anything else with them.

The menu you see next, file a message, is the same for a folder as it is for messages, except that the CEO system does not prompt you for a document name. You can file the documents from the mailed folder into an existing folder, or create a new folder in your filing system. The CEO system files the documents one by one, retaining the names they had as they were mailed to you. If you file the contents of the folder into an existing folder, you may encounter conflicts with document names—for instance, both the mailed folder and the existing folder may contain documents named "project notes." The CEO filing system will not accept two documents with the same name in one folder, so you must choose whether to give the document from the mailed folder a different name, or replace the existing document with the new document. You make this choice from the filing conflicts menu.

That's all the space I get for this month. In the next installment, I'll cover the new survey management option, printing, and filing. See you then. Δ

Paul Duck is the chairman of NADGUG's RIG/SIG Committee and a CEO guru for Orbi Inc., a vendor of manufacturing control systems. Contact Paul c/o Orbi Inc., 14390 Carlson Circle, Tampa, FL 33626; 813/855-2615.

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READ_FILE is the best macro I've seen yet

Author's note: The final part of the five-part series "Assembly Language for Beginners" (a.k.a. "Long, Wide Load") has been delayed until next month.

Having read the title of this article, I know many of you are saying right now, "Clearly, he hasn't seen any of *my* macros!" Don't keep them to yourself; write an article about them and send it in!

As most of the regular readers of this column know, I'm not particularly fond of doing clever and complex things with CLI macros. I would rather write a straightforward, simple program than try to perform simple arithmetic calculations using the awkward and integer-only CLI pseudo-macros. Most such macros turn out to be unreadable and unmaintainable anyway. However, I discovered a clever macro that just begs to be published. It allows you to actually READ and process each line of text from a file with a macro or CLI command! Some of the macros presented here were written by Jacques Roy, a DG SE who once worked out of the Ottawa office (he's now in Manhattan Beach, California). I cleaned them up a bit and added a few frills.

Apparently, READ_FILE was in *Focus* a few years ago, but I couldn't find it in my back issues. Anyway, it certainly seems worth repeating.

Explicit macro calls

The CLI is a weird and wonderful program, to say the least. Most of the capabilities of the CLI are well known, including the `< >` and `()` parentheses used for command line expansion and iteration, respectively. The `[]` parentheses, however, require a little more thought.

Macros may be invoked simply by using the macro name as a command, for example:

```
) XXX
) ?
) MAIL
```

The CLI first looks for file XXX.CLI and then XXX. This is an implicit macro call.

The `[]` parentheses around a filename literally mean "insert the contents of this file into the CLI command line." If the file is a macro, then this constitutes an explicit macro call. For example, the explicit versions of the previous examples are as follows:

```
) [XXX]
) [?]
) [MAIL]
```

An explicit macro call provides a method of invoking a macro that has the same name as a CLI command. For example, if you have a QPRINT.CLI macro that contains:

```
QPRINT/AFTER=22:00/QPRIORITY=100/TITLES %1-%
```

then the command `) QPRINT XXX` will be processed as CLI command QPRINT, but `) [QPRINT XXX]` will cause the CLI to find file QPRINT.CLI and process it as a macro with argument XXX.

Indirect file references

Since the `[]` parentheses refer to the contents of a file, the

file can contain either CLI commands (an explicit macro call) or anything else that is normally entered as part of a command line, including filenames and arguments to macros. A common practice is to prepare a list of filenames in a temporary file (with FILESTATUS/NHEADER/L=XXX or some other utility) and then process (with a CLI command or macro) each file whose name is contained in the file. The catch is that each line of the file must be terminated with an "&" character to keep the CLI happy, because the CLI considers a command to be completely entered as soon as it encounters a newline not preceded by an "&" character.

For example, suppose you want to delete all LNK files in the current directory. Since you can't say DELETE/TYPE=LNK, you create a file XXX that contains the names of the LNK files, one name per line:

```
) FILESTATUS/NHEADER/CPL=31/TYPE=LNK/L=XXX +
) TYPE XXX
=LINK_1
=LINK_2
=LINK_3
```

and then refer to the contents of XXX (i.e., DELETE the files whose names are in file XXX):

```
) DELETE [XXX]
```

Of course, this won't work, because the command line expands to:

```
) DELETE LINK_1#LINK_2#LINK_3#
```

where "#" is a newline. The DELETE LINK_1 will work, but the second and third "commands" are now LINK_1 and LINK_2. Of course, these aren't commands at all, and the CLI will attempt to execute those two files as macros. This is the same reason that `) [QPRINT] XXX` won't work in the previous example.

The solution is to put an "&" after each filename except the last in the temporary file:

```
=LINK_1 &
=LINK_2 &
=LINK_3
```

so that the CLI only sees *one* newline (the one that you enter from the keyboard), and the command line expands to:

```
) DELETE LINK_1 LINK_2 LINK_3
```

and produces the desired effect. Most people have some sort of BUILD.CLI macro that creates such a file (Brian Johnson presented his version on page 34 of the August 1987 issue of *Focus*).

The clever macro

Now let's get to this clever macro I wanted to tell you about. It is called READ_FILE.CLI (see Figure 1), and will actually allow you to process each line of text read from a file *without appending an "&" to each line*.

Note: When you create READ_FILE.CLI on your system, you must *not* have a newline on the last line (i.e., after `!END]&`).

Figure 1: READ_FILE.CLI

```

Comment—macro READ_FILE.CLI
Comment—don't put a 'newline' on the last line!!!!

[!equal,%2%,]
[!else]
  %1-%
  %0-1% &
[!end]&
    
```

The "&" must be the last byte in the file. If you create the file with SED, you can use SPEED to remove the last newline:

```

) X SPEED READ_FILE.CLI
!ZM-1DFUH^D
    
```

where "!" is the SPEED prompt, and ^D is a single ctrl-D character to terminate the SPEED command.

Argument 1 to READ_FILE is the macro or CLI command that you want to process each line of text read from the file. Arguments 2-n are the indirect filenames to be processed. In the previous (DELETE) example, we would say:

```

) READ_FILE DELETE [XXX]
    
```

where XXX contained the names of the files *without* an "&" at the end of each line. If you have several files like XXX, you can say:

```

) READ_FILE DELETE [XXX] [YYY] [ZZZ]
    
```

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The lines read from the file don't have to contain single words or names. If you have a macro that is normally used with argument(s):

```

) FOO ABC
) FOO DEF 123
    
```

then you can create a file XXX that contains:

```

ABC
DEF 123
    
```

and use FOO on XXX:

```

) READ_FILE FOO [XXX]
    
```

How READ_FILE works

The line immediately after [!ELSE], %1-%, calls the user's macro (%1%) with the line of text as the arguments (%2-%). The next line, %0-1% &, is a recursive call (%0% = READ_FILE), with the user's macro name as argument 1. The arguments %2-% do not appear and are pulled in from the indirect [] file. Now here's the trick (I think): since READ_FILE.CLI isn't terminated with a newline, the CLI uses the newline at the end of each line of text to terminate the READ_FILE.CLI macro. As a result, the CLI never "sees" it as a command terminator. Add a newline to READ_FILE.CLI, and you will see that it bombs (if the [] file contains more than one line). Perhaps someone else can provide a better explanation. (If you can, write a letter to *Focus*.)

Example: SSPACE.CLI

I found READ_FILE buried in an innocuous little macro called SSPACE.CLI (see Figure 2) that you may also find useful. SSPACE is a welcome alternative to the CLI SPACE command. It converts the CUR/MAX information from the SPACE command to percent and megabytes and displays it.

In SSPACE.CLI, the [!STRING] variable is loaded with the names of all of the LDU directories that require SPACE information. These can be supplied as arguments to SSPACE. If no arguments are supplied, [!STRING] is loaded with ":" and the names of all of the LDU directories in ":" (if superuser can be turned on). To do this, the temporary "N" file is created with the FILESTATUS command. /CPL=255 is used to list all of the names on a single line, so they can be picked up in a single STRING command (it assumes that the list of all of the LDU names will not exceed 255 characters, which is the limit of [!STRING]). The SPACE command is used to look up the MAX, CUR, REM information for each name in [!STRING]. The output is sent to the temporary "S" file.

Finally, the tricky READ_FILE macro is used to invoke the SSPACE1.CLI macro (see Figure 3) for each line of text "read" from the temporary "S" file. The SSPACE1 macro simply converts the MAX (argument 3) and CUR (argument 5) values to percent and megabytes and displays them.

Note that the SSPACE switches (%0/%) are transferred from SSPACE to SSPACE1 and finally to WRITE, so you can use the /L switch on SSPACE. The SPACE/1=WARNING/2=WARNING command is used in SSPACE.CLI to ensure that argument 1 will be WARNING: if an argument to SSPACE.CLI isn't an LDU or CPD, or if the directory doesn't exist. It is replaced with ERROR, because I prefer it to WARNING (you can't use /1=ERROR/2=ERROR, because that will kill the macro).

Limitations

The only problem with READ_FILE.CLI that I encountered is that it blows up if the file contains a blank line. If you find a

Figure 2: SSPACE.CLI

```

Comment—macro SSPACE.CLI

push;prompt pop
[!nequal,%1%,]
  string %1-%

[!else]

  Comment—attempt to turn on superuser
  superuser/1=ignore/2=ignore on

  Comment—get superuser status
  permanence/1=ignore/2=ignore =?[!pid]%0\%.x.tmp off
  delete/1=ignore/2=ignore =?[!pid]%0\%.x.tmp
  superuser/1 =?[!pid]%0\%.x.tmp
  string [=?[!pid]%0\%.x.tmp]
  delete/2=ignore/2=ignore =?[!pid]%0\%.x.tmp

[!equal,[!string],on]
  permanence/1=ignore/2=ignore =?[!pid]%0\%.n.tmp off
  delete/1=ignore/2=ignore =?[!pid]%0\%.n.tmp
  files/nh/type=ldu/cpl=255/1=?[!pid]%0\%.n.tmp :+
  string :.[=?[!pid]%0\%.n.tmp]
  delete/1=ignore/2=ignore =?[!pid]%0\%.n.tmp
[!else]
  string :
[!end]
[!end]

Comment—build file containing max/cur/rem for ldu(s)
permanence/1=ignore/2=ignore =?[!pid]%0\%.s.tmp off
delete/1=ignore/2=ignore =?[!pid]%0\%.s.tmp
space/v/l=?[!pid]%0\%.s.tmp/1=warn/2=warn ([!string])

READ_FILE SSPACE1%0/% [=?[!pid]%0\%.s.tmp]

delete/1=ignore/2=ignore =?[!pid]%0\%.s.tmp

pop
    
```

Figure 3: SSPACE1.CLI

```

Comment—macro SSPACE1.CLI

[!equal,%1%,warning:]
  write%0/% [!asc,211,207]Error: %2-%
[!else]
  var5 [!udiv,[!udiv,[!umul,%5%,512],1000],1000]
  var3 [!udiv,[!udiv,[!umul,%3%,512],1000],1000]
  write%0/% [!asc,211]%1%[!asc,211,211]&
    [!udiv,%5%, [!udiv,%3%,100]][!asc,245] used &
    [!var5] [!asc,257] [!var3] Mb
[!end]
    
```

way to handle that case, write a letter to *Focus* and tell everyone. You will probably be tempted to replace the null [!EQUAL,%2%,][!ELSE] conditional in READ_FILE.CLI with a simple [!NEQUAL,%2%,], but that will cause it to blow up also. Will someone please tell me why? Δ

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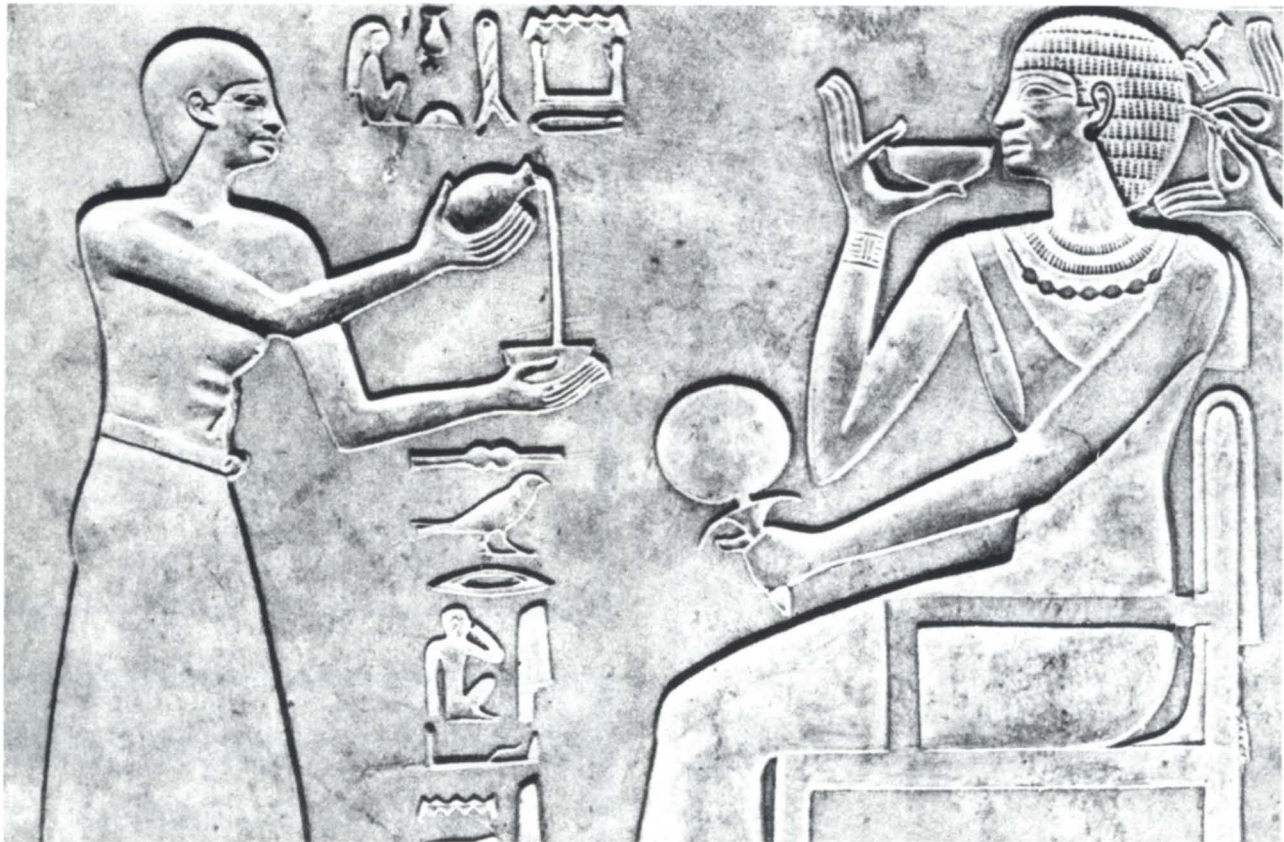
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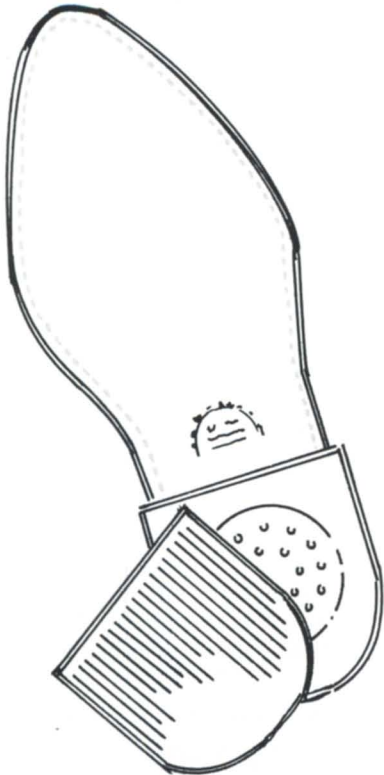
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Get SMART



shouldn't be underestimated. Integrating COBOL applications can significantly increase user productivity in environments that use CEO. Once programs are integrated, users aren't isolated from CEO features while in an application.

Thus, no matter how long users remain in your application, they have complete access to their inboxes, calendars, reminders, messages, etc. For example, when the user hits the INTERRUPT key in an integrated application, a pop-up

Figure 1: Pop-up menu

```

INTERRUPT MENU

-> 1. Phone message      (Take a phone message)
    2. Short message     (Compose and send a message)
    3. Inbox             (Process received mail)
    4. Calendar          (View and update appointments)
    5. Reminder facility (Reminders and Things to Do)
    6. User directory     (Electronic mail directory)
    7. User applications (Run a user application)
    8. View a document   (Select and view a document)

Enter choice: 1
    
```

How to write SMART COBOL applications

Some systems programmers may claim the title of this article is a contradiction of terms. Allow me to explain. In this context, SMART is a tool that easily integrates a COBOL application into CEO. (SMART's full name is COBOL/SMART, and is distributed by Data General's Software Products and Services Division (SPSD). SMART is an acronym for Screen Management At RunTime.)

CEO integration is accomplished with SMART software by incorporating the following features into your COBOL programs:

- dynamically maintained CEO status line (line one of the CRT screen)
- INTERRUPT key (F5) and its associated functions
- CEO CALCULATOR (F14)
- CEO-like screen editing, which includes
 - INSERT SPACE (F7)
 - DELETE CHARACTER (F8)
 - BEGIN/END LINE (Shift-F4)
 - CENTER (Shift-F8)
 - ERASE PAGE for screen refresh.

The importance of CEO integration

Figure 2: Two system calls

```

WORKING-STORAGE SECTION.

01 YOUR-WORKING-DIR      PIC X(13) VALUE
   "YOUR_DIR:EXE".
01 AC0                   PIC S9(09) COMP.
01 AC1                   PIC S9(09) COMP.
01 AC2                   PIC S9(09) COMP.
01 ERROR-RETURN-CODE    PIC S9(09) COMP.
01 COB-DIR               PIC S9(04) COMP VALUE 61.
01 COB-DACL              PIC S9(04) COMP VALUE 118.
01 YOUR-DEFAULT-ACLPIC  PIC X(256) VALUE
   "+<0>?FACO+?FACW+?FACA+?FACR+?FACE<0>".

PROCEDURE DIVISION.

*-> Change the working directory

CALL "?CBBADDR" USING YOUR-WORKING-DIR AC0.
MOVE ZERO TO AC1 AC2 ERROR-RETURN-CODE.
CALL "?CBSYS" USING COB-DIR AC0 AC1 AC2 ERROR-RETURN-CODE.
IF ERROR-RETURN-CODE NOT = ZERO
    DISPLAY "Error message".

*-> Change the default ACL

CALL "?CBBADDR" USING YOUR-DEFAULT-ACL AC1.
MOVE -1 TO AC0.
MOVE ZERO TO AC2 ERROR-RETURN-CODE.
CALL "?CBSYS" USING COB-DACL AC0 AC1 AC2 ERROR-RETURN-CODE.
IF ERROR-RETURN-CODE NOT = ZERO
    DISPLAY "Error message".
    
```


menu is displayed, as shown in Figure 1.

To gain an understanding of SMART, this article covers how to use SMART, some helpful hints, and what they don't tell you in the manual.

How to use SMART

It doesn't take a lot of smarts to use SMART. Integrating a COBOL program is a simple two-step process:

1. Link the program with the SMART library (e.g., YOURLINK YOURPROG SMART.LB).

2. Execute the program while the SMART server is running. (To ensure the server is always available, start the server process in your system's UP.CLI macro.) That's all there is to it.

The resulting program will work in either an integrated mode when run through the CEO application interface, or as a standard program when run directly from the CLI (even when run from the CLI, the status line still displays current date and time).

The next sentence is vital to application developers: You don't have to

*The magic of
SMART is its
ability to
automatically
integrate COBOL
programs with
CEO*

change a single line of code to integrate a standard COBOL program into CEO. All the features mentioned in this article are automatically included in your program simply by linking with the SMART library. This is of crucial importance in the labor-intensive software development arena.

Helpful hints

A few documented items that will help make your SMART integration run smoother are as follows.

1. Ensure all screen I-O is handled

through the SCREEN SECTION. In other words, the program shouldn't access functions of the screen directly using control codes (e.g., direct cursor positioning or alternate character set selection via octal values displayed on the screen).

2. Remove critical information from line 1 of the screen. SMART uses line 1 to display the CEO status information.

3. If the function keys used by your program conflict with CEO function keys, SMART provides a facility for re-mapping those keys. This can ensure CEO consistency without program modification. SMART even allows you to re-map the BREAK ESC key.

What they don't tell you in the manual

No manual can cover every nuance of a product, so I will share with you some of the insights we've gained through experience with SMART. I hope this will help you implement SMART with your applications.

1. Avoid using underlines in the SCREEN SECTION. Underlines don't always redisplay correctly when return-

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Figure 3: Method 1

```
WORKING-STORAGE SECTION.
01 CLI-STRING PIC X(256) VALUE "XEQ/S A_PROGRAM;BYE
01 CLI-STATUS PIC X(250).
PROCEDURE DIVISION.
CALL "CLI" USING CLI-STRING CLI-STATUS.
```

ing from an INTERRUPT or ERASE PAGE.

2. Screen windowing should be avoided, because this can conflict with CEO's usage of windows.

3. To properly set your CLI environment, your COBOL program may need to issue some system calls. Figure 2 shows two system calls that we use to initialize the working directory and the default ACL.

4. Sometimes it may be necessary to call a nonintegrated program from an integrated application (perhaps because you don't have the object files for the program, e.g., Present).

You can do this in one of two ways. Method 1 executes the program by calling the CLI. This is the simpler method

of the two. It has two disadvantages, however. It creates the extra overhead of an intermediate CLI process, and you lose some control over the called program. Figure 3 is an example of method 1.

Method 2 PROCs the nonintegrated program from directly within your program. In this case, you issue a system call to create a blocking process. The advantages of this method are improved performance and program control of the PROC. I will not discuss the details here. Calling a nonintegrated program isn't a common requirement, and the PROC is not trivial. Give me a call if you need more information about this procedure.

Summary

While this hasn't been an exhaustive account of the features and benefits of SMART, you now have an understanding of the product's strengths.

The magic of SMART is its ability to automatically integrate COBOL programs with CEO. All you have to do is link your COBOL programs with the SMART library, and the program becomes CEO-integrated. It's as simple as that, even if the program was written without taking CEO integration into account! And SMART works for virtually all COBOL programs that use standard SCREEN SECTION commands for screen I-O. The bottom line (and I don't mean the bottom line of your screen) is that if you need to integrate an application with CEO, there is no easier way to do it than with SMART. Δ

Kim L. Medlin heads special projects for the Commercial Software Development Group of Data General's Software Products and Services Division. He can be reached at Data General, 3617 Parkway Ln., Norcross, GA 30092; 404/448-6072 ext. 2007.



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Business calls

BBASIC is a smooth operator when it comes to system calls

One of the unique advantages to Business BASIC is its ability to execute system calls interactively. In many ways, this makes it one of the easiest languages to program AOS/VS system calls.

Before I go into detail on how to do this, let me make a disclaimer. Playing with system calls is a lot of fun, but not something you should go out of your way to do. The primary job of most BBASIC programmers should be to produce maintainable code that solves a business need. Complex system calls don't always do that.

Remember that system calls are very dependant on the operating system. For example, you'll have to recode if you ever move from a 16-bit environment (like Business BASIC is now) to 32-bit. It's also possible (but unlikely) that new releases of AOS/VS may affect you.

A good place to get started is Data General's *System Call Dictionary (AOS/VS and AOS/DVS)*, (093-000241-02). This book describes all the system calls, explaining their operation and the arguments and packets they require.

Once you've found the system call you want, the fun begins. You'll notice that all the calls have names like ?GNFN. However, the Business BASIC manual says that the STMB 24, the command you'll use to issue the system call, wants a call number, not a name. Of course, the manual doesn't list the names and corresponding numbers.

If you were programming using an assembler, it would take care of looking

up the system call number as part of the assembly process. The table it uses is in :UTIL:SYSID.16.SR. To get the system call number, you'll have to look at this table yourself. To do so, either print it out (it's all printable) or use SED and a FIND command to find your system call. (Note that there is a SYSID.32.SR as well; you would use that only if you were running B32.)

You can't just use the number in SYSID though. The values are in base 8; STMB 24 expects its argument in base 10. Looking up ?GNFN (Get Next FileName), you find the number is 131 (base 8). Therefore, the call number is 89 (base 10).

The only way to pass arguments to system calls is through the accumulators. The values for the accumulators are placed into a string that is one of the parameters of STMB 24. The first 8 bytes hold the values to be passed to the four accumulators: 2 more bytes are used to hold the channel number (if applicable). Note that the system call number is passed in AC3, bytes 7 and 8.

The system call may specify that specific values are needed for the accumulators, or that they be pointers to packets. To your BBASIC program, packets are nothing more than string variables with dimensions the same size as the packet definition. The address of the string variable gets placed in one of the accumulators for use by the system call.

A system call may use a packet of information it needs as parameters, or may place its results in a packet, or both.

Some system calls require that packet addresses be passed as word addresses, others as byte addresses. Use the STMB 22 statement to get the byte address first. If the system call wants the word address instead, just divide

the resulting byte address by two. It's not always clear from the documentation which one is required. In any case, when my system calls don't work, it's always the first place I look for my mistake.

The last argument in the system call is the mode. If the system call you're using involves a file open on a Business BASIC channel, some translation is needed. While your channels are numbered 0 to 15, AOS/VS has its own numbers. The mode argument allows you to specify to Business BASIC that one of the accumulators contains a Business BASIC channel number that must be converted to an AOS/VS channel number.

Now that we have the basics, let's look at the example in Figure 1. This program lists filenames and their sizes in the current directory. The ?GNFN call is used to get the filenames, then ?FSTAT is used to get information on the file.

The first step is to open the current directory as a file. We use the STMA 9,1 command to get the name of the directory, and an STMC 41 to open the directory as a file. An OPEN FILE command won't work; it checks the element size of a file to make sure it's a multiple of four, and directories don't pass.

?GNFN is an interesting call. Provided you set things up right, it will pass you the next filename in the directory each time it's called. An error code of 24 will be returned when it reaches the end. A handy feature is that it also allows you to pass a standard AOS/VS template to match.

It needs no less than three addresses of strings to operate. FILE\$ is the name of the file that is returned. MASK\$ is the template. PKT1\$ is a packet containing the addresses of FILE\$ and MASK\$. Its first 2 bytes are used as working

Figure 1: System call using BBASIC

```

0010 REM LIST CURRENT DIRECTORY USING SYSTEM CALLS
0020 CLOSE
0030 DIM AC$[10],DIR$[100],PKT$[46],PKT1$[6]
0031 DIM FILE$[128],MASK$[100],BUF$[512]
0040 STMA 9,1,DIR$
0050 LET PKT$,PKT1$,AC$=FILL$(0)
0060 LET CHAN=1 \ E=0
0070 STMC 41,E,DIR$,0,CHAN
0080 LET MASK$="GH+"
0090 GOSUB 5000 : GET NEXT DIRECTORY ENTRY
0100 IF E=24 THEN STOP
0110 PRINT FILE$,FILSIZ
0120 GOTO 0090

5000 REM GET NEXT DIRECTORY ENTRY
5010 GOSUB 5080 : + ?GNFN
5020 IF E=24 THEN RETURN
5030 LET BUF$=DIR$,".",FILE$
5040 GOSUB 5190 : + ?FSTAT
5050 UNPACK 5060,PKT$,ENTYPE,ELSIZE,TCR,TLA,TLM,
      FILSIZ,DSKADR,NDXLEV,OPNCNT
5060 RFORM      @2B@11L@17LLL@31LLJJ
5070 RETURN

5080 REM + ?GNFN
5090 LET GNFN=89 \ TADDR,FADDR,PADDR=0 \ MODE=16 \ FILE$=FILL$(0)
5100 STMB 22,FADDR,FILE$
5110 STMB 22,TADDR,MASK$
5120 STMB 22,PADDR,PKT1$
5130 IF MASK$= " " THEN LET TADDR=-1
5140 LET PKT1$[3,6]=CHR$(FADDR,2),CHR$(TADDR,2)
5150 AC$=CHR$(0,2),CHR$(CHAN,2),CHR$(PADDR/2,2),CHR$(GNFN,2),CHR$(CHAN,2)
5160 STMB 24,E,AC$,MODE
5170 LET FILE$=TRUN$(FILE$)
5180 RETURN

5190 REM + ?FSTAT
5200 LET FSTAT=63 \ PADDR,FADDR=0
5210 STMB 22,PADDR,PKT$
5220 STMB 22,FADDR,BUF$
5230 AC$=CHR$(FADDR,2),CHR$(0,2),CHR$(PADDR/2,2),CHR$(FSTAT,2),CHR$(0,2)
5240 STMB 24,E,AC$,0
5250 RETURN

```

Figure 2: System call using CLI

```

0010 REM LIST DIRECTORY TO SCREEN USING AOS
0020 CLOSE
0030 DIM A$[100],MASK$[50]
0040 LET MASK$="GH+"
0050 LET E=0
0060 LET A$="DELETE/2=IGNORE GH.TMP ;"
0065 LET A$[0]="FILESTATUS/LENGTH/L=GH.TMP ",MASK$
0070 STME 19,E,"CLI.PR<0>",A$
0080 OPEN FILE[1,5],"GH.TMP"
0090 INPUT FILE[1],USING " ",A$
0100 IF EOF(1) THEN STOP
0110 PRINT A$
0120 GOTO 0090

```

storage for the call itself, so it can remember where it was last time. Take care not to change the contents of these bytes between successive calls.

In general, the structure of the packets for system calls is described in the manual. You may, however, want to double-check the offsets within the packet for information. You may do so by looking at the file PARU.16.SR, also in :UTIL.

Having constructed the packet, it's straightforward to construct the values for the accumulators in AC\$ and do the system call.

To get the size of the file, we now have to do a ?FSTAT call. This time, the packet (PKT\$) is returned by the call. The call is simple to invoke, but the packet returned is more complex. With a bit of work, you can figure out the UNPACK statement that works. Better yet, copy mine; it works already. You now have a useful program that can be used to step through a directory to search for large files or perhaps rename them.

The program would look quite different in B32. To begin with, the accumulators each are 4 bytes long, not 2, due to the 32-bit environment. The 32-bit system calls also have packets that are formatted differently. Instead of STMB 24, the \$SYSCALL command is used. WORDADDR and BYTEADDR commands replace the STMB 22. The AOSCHAN function converts the channel number. There is no real difference in technique, but it's a bit easier to work with.

Remember my recommendation in the beginning to avoid system calls? Is there a way around this one? There is, as shown in Figure 2. It invokes the CLI to create a file using the FILESTATUS command with exactly the same information. It is then opened sequentially and processed.

Note that it has considerably fewer lines of code and that they are much easier to understand. Figure 2 is the hands-down winner in the maintainability race. It also won't have any problems if a new rev of AOS/VS comes out, or if you convert to B32. However, Figure 1 will be the hands-down winner when it comes to performance. Δ

George Henne, a contributing editor to Focus, has worked with Business BASIC users for a decade. He is the vice president of Maxon Computer Systems. He can be reached at 575 Madison Ave., Suite 1006, New York, NY 10022; 416/445-4823.

Patch work

This patch can provide temporary relief for the 1,024 buffer limit

:POSTPONED:UPGRADES

Last month, I started to write a column on upgrade strategies, but I got waylaid by some anomalous benchmark results. I've been out of town most of the time since that column was written, and I'm about to leave town again for the U.K. (ab)users group meeting, so not much progress has been made on getting the benchmark anomalies cleared up. As a result, I'm going to push the upgrade topic back onto the topic spike and address it in a future column.

If you're in the midst of deciding on an upgrade, and you were depending on my column to help you out, then I'm afraid you're going to have to resort to the traditional, tried-and-true method of just taking a wild guess.

:YAUP

Great news for those of you willing to try anything rather than try to convince users to break up gigantic directories into a set of smaller directories: I've got Yet Another Unauthorized Patch for AOS/VS.

Those of you who apply unofficial patches with reckless abandon can just skip the following and thumb straight to Figure 1 to see the patch. You remaining responsible types can read on to decide whether the patch makes sense for your systems.

This patch came about several years ago as an emergency measure to rescue systems with appallingly overloaded directories (more than 1,500 files). Splitting up these directories often takes a bit of time, either because the humans involved have to be sent out to gulags for retraining, or because software has to be changed to reflect the redesigned directory structure.

The idea behind the unofficial patch is to raise the 1,024 buffer limit on the system cache as a *temporary measure* until the overloaded directory situation can be resolved. It shouldn't be permanent unless your MV is sufficiently speedy to justify a larger cache size and your directories are reasonably well organized. These last two conditions are

Figure 1: Unauthorized AOS/VS 7.5x patches

```
:YAUP no. 1: 09-Sep-87
:
:Patch AOS/VS 7.5x to eliminate unnecessary flushing
:of low-level index blocks when new elements are added.
:
%AOSVS
RUNLC1+3605      RELF      RELM
:
:YAUP no. 2: 06-Mar-88
:
:Patch AOS/VS 7.5x to allow a larger number of cache
:buffers than the 1,024 limit imposed by AOS/VS.
:
%AOSVS
BFALL+133      002000      002400
PCACH          @.      002400
:
:End of patch
```

Use the name 7.50_AOSVS_YAUP_PAT for the patch file and change the two octal 002400 values in the second patch to whatever you want for a cache buffer count. Use the following command to install the patch:

```
*) X PATCH/I/T=:SYSGEN:system-name.PR/P=7.50_AOSVS_YAUP_PAT
```

generally true only on high-PID-count (256 or greater) MV/10000, MV/15000 model 10, MV/15000 model 20, or MV/20000 systems.

:RATIONALE

Originally, I rationalized that the ultimate solution to excessive cache activity should always involve having proper file element sizes (those that produce no more than one index level) and knocking directory file counts down to something reasonable, say about 500 or fewer (with proper hash-frame sizes, of course).

Then I started running into very large AOS/VS systems with in excess of 100 users, and not all of them were running the same programs or accessing the same files or directories. At that point, it became clear that the limit of 1,024 cache buffers just didn't make sense under some conditions, especially on the faster MVs.

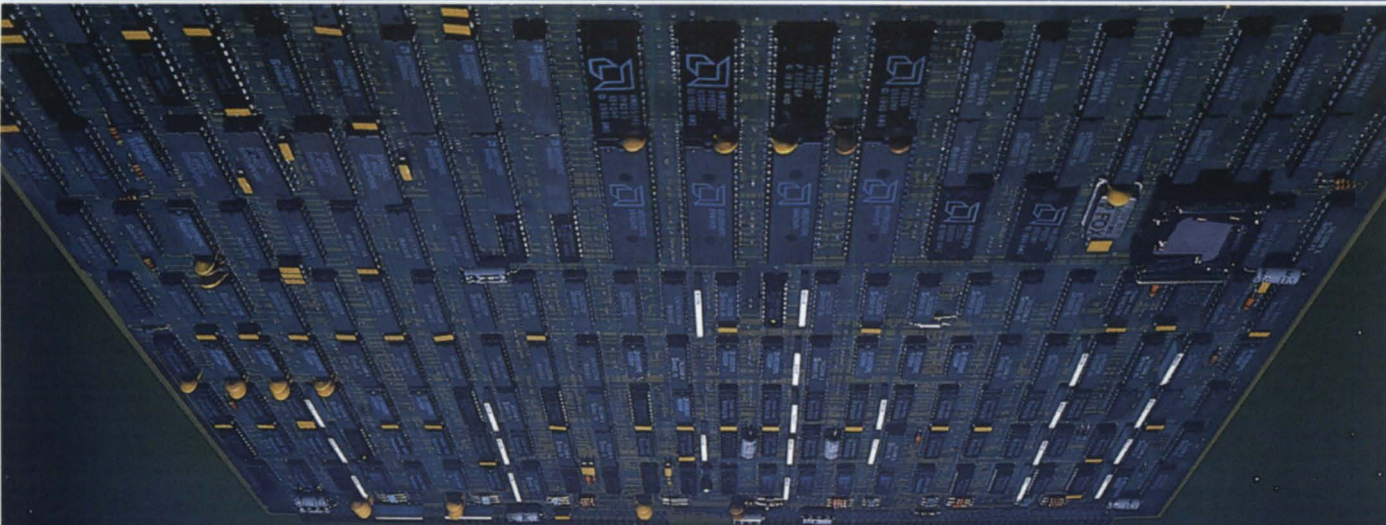
:HISTORY LESSON

A little history lesson might help put this in perspective. How did the 1,024 cache buffer limit come about?

Well, in the old days (circa 1975), the designers of 16-bit AOS did some tests to determine the maximum number of cache buffers to allow, based on things like the maximum expected number of users, the maximum disk structure (total active directory and file counts) likely to occur, and the CPU-time required (on the machines available at the time) to search the cache versus the time required to just read the block from the disk instead.

Based on all of these considerations, the designers chose to limit the cache buffer count to 128. Not an unreasonable number for C/330s with a maximum of 64 PIDs running with one or two 277 MB disk drives.

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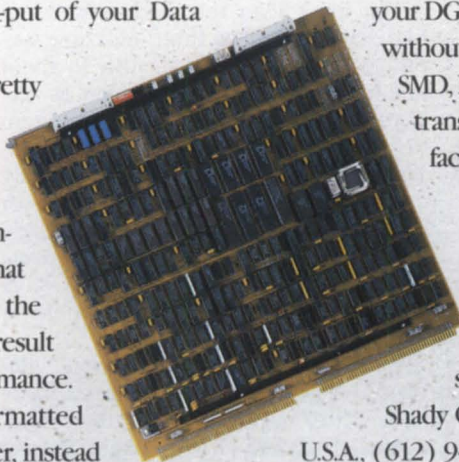
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ZETA 

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they redid the analysis and came up with a maximum number of cache buffers of 1,024, based on the speed of the MV/8000 and the expected maximum disk and PID configuration.

Since that time, there have been several significant changes to the MV series and to AOS/VS that should have caused the maximum cache buffer count analysis to be redone. The speed of the MV10s and MV/20s (and the MV/15 models 10 and 20) is clearly capable of searching a larger cache with overhead no worse than the MV/8, and the maximum PID limit of 256 was raised to 1,024.

Given the wide range of processor speeds in the MV series and the wide spectrum of PID counts and directory/file structures that occur now, it seems far more reasonable to have a list of maximum cache sizes based on some combination of processor speed and directory/file structure complexity.

It's also conceivable that a well-informed system manager would make a conscious decision to trade off the extra CPU consumption caused by cache searches against the agony of massive directory structure reorganizations. Currently, this is possible only up to the 1,024 buffer limit.

So as an interim workaround until a better solution is available as part of the standard AOS/VS release, I've decided to publish the patch for raising the cache buffer limit.

The only version of the patch that I have currently is for AOS/VS 7.5x. In principle, equivalent patches exist for earlier revs of AOS/VS and AOS, but I don't have the facilities to generate them. If you're interested in determining the patch, give me a call, and I'll walk you through the procedure for locating it.

:ANECDOTE

This patch resurfaced most recently during a hash re-sizing exercise on an MV/10 after a seminar up in the Great White North (Montreal).

One of the directories contained 3,600 files, and it was one of the most commonly used directories on the system. So we dumped the directory to a different disk unit (after applying YAUP number 1 from last month's column to avoid unnecessary index-block flushing), deleted the directory, and recreated it with a hash-frame size of 251 (the largest prime hash-frame size), and started reloading the dump file from the other disk.

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The first 3,000 files reloaded fairly smoothly and at a pretty rapid rate. However, we were watching the cache hit/miss rates on a nearby :PERFMGR screen, and the hit (i.e., search) rate was climbing steadily as the file count increased, indicating that more and more cache buffers were required for each file reloaded.

Then something amazing happened.

The file reload rate had started out high, about two or three files per second, but had fallen off steadily to about one per second at 3,000 files as the number of cache misses rose from zero to around three to five per second. Then the file load rate abruptly dropped to about one per minute or less. The cache miss rate jumped to 50 per second (i.e., 100 percent drive busy) and stayed there. I would have given anything for a video camera at that point.

What had happened? Simple. Beyond 3,000 files, it now required more than 1,024 cache buffers to create, open, write, and close a single file. As a result, hardly any buffers were getting reused, and the miss rate exceeded the maximum access rate of the disk. This is identical to the behavior you would expect on a system with little or no cache. Conversely, it shows how the cache yields an acceleration of at least 60:1 over the case of no cache.

It was past midnight, and we didn't have time to wait 10 hours for the load to complete (600 files at 1 per minute), so I grabbed FED and went searching for the cache buffer count patch locations again. I never have a written copy of that patch handy when I need it.

We applied the patch to raise the cache buffer count to 2,048, rebooted, and did a LOAD/V/R (not LOAD.II; see below). The remaining 600 files loaded at the rate of about one per second.

Luckily, the system was an MV/10, or the CPU required to search the larger cache could have also become a bottleneck.

:RELATED TOPICS

This is the "see below" mentioned above.

The reason that I used LOAD/V/R and not LOAD.II/V/R is because of yet another annoying little inconsistency between LOAD and LOAD.II; when you use the /R switch with LOAD, it considers a file to be more recent if the date/time created is more recent, *or* if the date/time created matches, but the length of the file in the dump is longer than the length of the file on the disk. This was intended to cover the case where you aborted during a LOAD using ^C^A and left the current file only partially loaded. A very nice feature. LOAD.II only looks at the date/time created, so you can easily end up with a partial file without knowing it.

In theory, you could avoid this problem by simply deleting the file that was being loaded at the point that you interrupted the load. But how do you figure out which file that was? Both LOAD and LOAD.II buffer their console output, but only LOAD is clever enough to flush its buffer on a ^C^A so that you can see the name of the last file that was loaded. Another annoying inconsistency: LOAD.II discards its output buffer on a ^C^A.

:OLD BUSINESS:1

A representative of DG's Educational Services took offense at a comment I made in the January column (a synopsis of the AOS/VS System Managers Roundtable at Conference 87). I said, "There also seemed to be a general consensus that charging users a fee to attend a session detailing the features and benefits of an upcoming rev of AOS/VS is tacky, at best." If I misrepresented or embellished the sentiments of those present at the roundtable, then I apologize. But I don't think I did.

On a positive note, the sentiments expressed at the roundtable seemed to have some effect, at least locally. The January No. Cal. FUDGE meeting saw a huge turnout of local DG people, and presentations were given by DG on both AOS/VS rev 8 and CEO 3.00. I hope it's a trend.

Unfortunately, the same dearth of specific capacity planning numbers for the new revs that was evident at Conference 87 was also evident at the No. Cal. FUDGE meeting. But any advance information is better than finding out when the release notice arrives.

:OLD BUSINESS:2

Also in the January column, and in several others, I said that the system call mischarging problem was partially fixed in AOS/VS rev 7.5x and completely fixed in rev 8.

A more detailed discussion with some sources inside DG has shown that the fix that they were talking about has little to do with the real problem. System call processor time charging using anything other than fixed estimates (using the same estimate values across the entire range of 16- and 32-bit processors!) is not in the works for rev 8.

This means that the extremely disruptive effect on interactive user response time of programs that do system calls at a high rate will be with us for a while longer, if not forever. It also means that anyone who thinks that the CPU-time charged to a process is anywhere near accurate deserves a lifetime pass to Fantasy Land.

I detect very little interest on the part of DG in fixing this long-standing problem, so I've instituted a long-term research project to see if I can't find a patch to at least adjust the system call charges based on the processor speed. So far, though, the results have not been encouraging. DG seems to have made quite a few changes to AOS/VS since the last time I got a peek at the sources, and I've had trouble locating the estimate values on rev 7. But I'll keep on truckin' Δ

Copyright © 1988 by B.J. Inc. All rights reserved. Brian Johnson is the president of B.J. Inc., a San Francisco-based consultancy specializing in system auditing, system management, and performance analysis. He can be reached at 109 Minna St., Suite 215, San Francisco, CA 94105; 415/550-1444, telex 296544.

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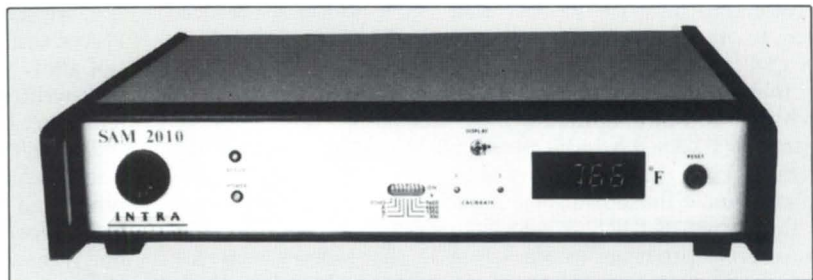
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Wise up!

SMART is elegant, but not brilliant

This month, I'm going to treat you to another product review. The number of calls and letters I received after the last one (EMACS and FILEMNGR in the December 1987 issue) leads me to believe that utilities and tools are hot topics.

The subject of this review is COBOL/SMART. Yes, I know that Kim Medlin also reviewed COBOL/SMART this issue, but two opinions are better than one. Kim was kind enough to give me a sneak preview of his review, and as a result, I was able to concentrate on areas he did not cover. So let's get started.

What is SMART?

COBOL/SMART (Screen Management at RunTime) consists of three parts: a library of routines meant to replace the COBOL (32-bit version only) screen management routines, a way to configure and customize certain parameters, and a program that runs as a system server process. When implemented in a COBOL program, it allows that COBOL program to be run as an integrated CEO application, thus allowing use of the interrupt menu and the calculator.

It is incredibly simple to add these routines to your program. You just link or relink the object modules, being sure to add the COBOL/SMART libraries before the COBOL.LB on the command line. It's so easy that I just added a /SMART switch to my CBIND macro to include the extra modules. (AOS COBOL users don't get excited; CBIND is my own creation that provides me with a very complex, automated searchlist and optional library inclusion with a minimum of keystrokes. I kept the 16-bit utility name since it was easy to remember.)

To customize these routines is also fairly easy. I just went into the COBOL/SMART directory and entered X SPE. It is a menu-driven program (more or less) that allows you to change options and save them in an object file, the default of which is COB_CEO_VALUES.OB. This file must be included on the LINK command line.

The runtime system is intended to be brought up with the UP macro and shut down with the DOWN macro. Macros are included that can be called to do this. All you need to do in the UP and DOWN macros is either DIR to the COBOL/SMART software directory or add it to your searchlist and call their macro. It worked on the first try.

After plowing through the installation and getting this far,

I felt that Data General had really outdone themselves this time. Here was a product I could load into any directory I wanted (:DGSW:COBOL_SMART_1.00, in this case), add the directory to my searchlist, reference the files in it, and it works! So easy that a trained monkey could handle it. That means that a number of shops I have known shouldn't have trouble. The approach is simple, easy to use, and flexible enough to allow the system manager to manage a system as wanted without any installation problems.

Getting SMART

When first offered the opportunity to try COBOL/SMART, I was very pleased. The concept of adding CEO interrupt menu functions to my applications was so appealing I could hardly control my excitement. This was something that could help to open our potential market with only a minor internal development effort, so I made arrangements to get a copy of COBOL/SMART and dug into it shortly after it arrived. The main obstacle in my path was making arrangements with one of our clients, since we didn't have CEO on our system and he did.

When an unfortunate series of events forced me to put it aside for a couple months, I was disappointed but more determined than ever to dig into it.

Using SMART

Kim did a thorough job of detailing the features of SMART, so I won't cover that again here. I *do* want to emphasize the three helpful hints he gives. They are the following.

1. All screen I-O should go through the screen section. DISPLAYS and ACCEPTs with working storage variable names do not allow the use of the COBOL/SMART function keys. Most well-written interactive programs do this anyway, so that shouldn't be a problem.

2. Don't do anything important with line 1 on the screen. This line is reserved for COBOL/SMART. (I think this could be remapped using the SPE utility, but I'm not completely sure.) Since most applications put a screen title or program title on line 1 as part of a standard heading, this shouldn't be a problem.

3. Determine which function keys are available and redefine the keys used by COBOL/SMART if needed. Again, this shouldn't be a problem for most systems. The most function keys I have ever had active at one time in an application is 17. Since there are more than 60 available, it shouldn't be hard to find a few you never used.

I was forced to redefine the keys, since one of the default key assignments for COBOL/SMART was also the global terminate key throughout our applications (F8 for our C/SCRIPT

fans). There were also a few other conflicts, but it only took a couple minutes to create a parameter file using F12-F15 for the CEO keys I wanted, and that resolved that.

The effect of SMART

So what does COBOL/SMART do to my application that's different now that I have gone to the trouble of relinking it? That depends entirely on how you execute your program. I went to the CLI and entered X PROGRAM and watched. The first line of the screen was mostly blank, with only the date and time. After watching long enough, the time was updated, which means that either timeouts are implemented or a second task is running that updates the date and time. Very nice. Then I hit the hot key for the CEO interrupt menu, and my terminal said, "Beep." After being frustrated for a few minutes trying every available function key, I got out the COBOL/SMART manual, which plainly says that if you run your program "standalone" style, that is what happens.

So then I went into CEO, created a public application, and tried to run it. OP wasn't privileged. Nobody was. (It was our first application.) A few more minutes to fix that and log on again, and I ran the application using the standard command line. Then my application came with a much more complete line 1. That was promising. I hit the hot key and bingo, there was the interrupt menu. I checked my inbox, sent myself a message, and exited. The entire application screen was redisplayed right where I left it, and suddenly, the New: 0 changed to New: 1. This is where it started to get fun. I played with this another 15 minutes or so and tried to

get it to mess up my screen, but it worked perfectly every time. I didn't experience the problems Kim found with underlines and hardware windows, since we don't use the 4xx series of terminals.

By this time, I had a product that worked as advertised, provided a lot of additional functionality with virtually no effort, and seemed to be well implemented and reliable, a rare combination indeed. I am quite impressed by this product; however, since I have never seen a picture this rosy before, I felt there had to be some price to pay, and of course, there is.

The cost of SMART

The most obvious cost is the license. The next is the roughly half a megabyte of disk space the software occupies. The additional routines increase the size of your .PR files by about 40 KB. If you have a lot of programs not bound into large .PR files (as was the case with the quick-and-dirty ICOS-to-COBOL upgrade that was common three to five years ago), this could become significant, since each group of 25 program files would chew up another megabyte of disk. Also, the link time for the program will increase a couple seconds. Still, the hardware costs of adding and using COBOL/SMART are a lot less than the resources and time consumed by a couple dozen terminal operators who keep bouncing back and forth between their applications and CEO because the phone rang, they needed to check their mail every 10 minutes, the boss asked them to send a memo to so-and-so, or any other minor office interruption.

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Lacking in SMART

So now we get to the nitty gritty: what's wrong with it? There are several things I didn't like about the product. None of them are major enough to prevent use of the software (maybe just inhibit it), but it means the developers managed to leave a few "features" for future revisions.

My number one complaint is that you must have the cosmic server (as it calls itself) running to bring up your program, or it aborts. Although a traceback message is annoying to me, it is downright intimidating to most users. If the COBOL/SMART routines can't find the global server, they should simply warn you that CEO is not available. For example, when starting CEO, it tells you if the post office is closed or the file server isn't running. It doesn't terminate; it warns you and then lets you continue. It's inexcusable to prevent my application system from running because one functionally optional server isn't running.

On the plus side, once the application is started, you can shut down CEO and/or the COBOL/SMART cosmic server, and your application will still run. Once started, if you try to do something not currently available, it reminds you about the temporary lack of functionality, or simply beeps to indicate that function isn't available.

My number two complaint is a little more involved. Why must I run the application from CEO? Why can't I just execute it from the CLI? I assume this has something to do with the overall design of CEO and the way that all the processes on a terminal share that terminal, shuffling it back and forth between them as the user goes from function to menu to function.

Since the only functionality COBOL/SMART intends to add is the interrupt menu, and you have to leave your application to get back to full CEO, the user would be better served with a program that could be ringloaded (maybe into ring 6) so the application could be executed or chained directly from the CLI or even the EXEC log-on process. This would greatly reduce the number of nearly inactive PIDs chewing up resources. (Maybe that's the answer; it's a conspiracy to sell hardware.)

The third complaint I have is minor compared to the first two, but it is a complaint that I have had ever since I saw version 0.6 of CEO at a pre-release demonstration at Data General. The screenedit keys—[^]A, [^]B, [^]E, [^]F, [^]H (home), and [^]K (erase eol)—provide the user with a powerful editor for entering command lines. But CEO changed those keys to various function keys, thus making a second standard. Both ICOBOL and 32-bit COBOL have gone to great trouble to implement the original screenedit functionality in data fields on the screen, but guess what?

COBOL/SMART takes that away again. The main problem is that all of the users have to be trained with two sets of data editing keys and shown how to figure out which one is currently active.

This is complicated by the fact that you can create your own parameter files, define these keys to be anything you want, and then use a different parameter file for each program you link. Three cheers for flexibility, but the thought of having the insert character key be one of 10 or 20 different function keys depending on the program in use at the time makes me feel like I might have been through one of NASA's high-gee stress tests. (Never tried it and wouldn't want to.)

My fourth comment is on the SPE utility. Although it is not difficult to use, there are some details of the human interface missing. There were a few times I had to guess which key to

hit. For example, in a couple places, you enter 0 to return to the previous menu, some you simply hit (NEWLINE), and others you use F11 (the CEO CANCEL/EXIT key).

Overall, the product is well thought-out and implemented. There are only a few minor inconsistencies and one major problem that keeps it from having the excellent user interface that CEO is so acclaimed for. If the problems that both Kim Medlin and I have found get fixed in the next revision and distributed soon (three months or less), then DG will not only have a solid and fairly stable product, but will have also set new records in rectifying the few problems standing in the way of widespread acceptance.

Since COBOL/SMART doesn't require that CEO itself be running or even loaded onto the development system, there's nothing to hinder its potential inclusion by vendors who don't have CEO. Only the COBOL/SMART server needs to be running to execute the applications.

Forgive me, readers, for I have sinned

I have joined the ranks of repentant preachers after breaking one of my own rules. Not only did I break the rule, but I published the results. I am referring to the BATCH.CLI macro in my March column. I had it working with no problem on my system, and then when I was editing my article, I saw that it was sloppy and inelegant, so I cleaned it up. Then I decided a slightly different approach was better, so I "improved" it.

Then I saw that if I added a rarely used switch, which it turns out doesn't exist (no wonder I can't remember seeing it used), I could shorten it and make it more efficient. Then I proudly sent my new and improved macro (which didn't have a snowball's chance in hell of working) to the publisher.

I didn't incorporate the improvements on our system, since the old way worked fine. So without any more gory details, see Figures 1 and 2 for copies of the working macros as implemented on my system. My sincerest apologies for any problems I may have caused.

Figure 1: START_BATCH CLI

```

Comment—START_BATCH.CLI
push ; prompt pop
dir :udd:[!user]
[!nequal,[!path =batch_input.pipe,]
  delete/2=error =batch_input.pipe
[!end]
create/2=err/type=pip      =batch_input.pipe
delete/2=ignore          =batch_output.file
create/2=error            =batch_output.file
process/input=batch_input.pipe/output=batch_output.file&
/chlogical/sons/priority=200/name=[!user]_batch/superuser :cli.pr
pause 2 ; Comment let it initialize
pop
  
```

One last note: Reports from the field indicate that under rev 6 of AOS/VS, the batch CLI process shuts down after the first job completes, instead of waiting for the next job as it does under rev 7.57. Wonder what rev 8 will do.

Soapbox continues

Last month, I offered some information and an editorial opinion about the CEO_INDEX corruption problem and DG's official stance. This month, I had a personal encounter with Atlanta, and I must conclude it is because of new procedures that I had the trouble I did.

Figure 2: BATCH.CLI

```

Comment—BATCH.CLI
push ; prompt pop
dir :udd:[!user]
delete/2=ignore/c ?batch_input.tmp
list ?batch_input.tmp
write/l directory [!directory]
write/l searchlist [!searchlist]
write/l defacl [!defacl]
delete/2=ignore ?[!pid].tmp
write/l=?[!pid]/tmp superuser
write/l superuser [?[!pid].tmp]
delete/2=ignore ?[!pid].tmp
write/l=?[!pid]/tmp superprocess
write/l superprocess [?[!pid].tmp]
delete/2=ignore ?[!pid].tmp
write/l %1-%
write/l send [!pid] **** Batch job complete—%1-% ****
write/l delete/2=ignore: udd:[!user]:?batch_input.tmp
list/k
write/l=batch_input.pipe: udd:[!user]:?batch_input.tmp
pop
    
```

Normally when you have a new system installed, several things happen in a somewhat predictable order. Your hardware is delivered, then the DG field engineer shows up and sets it up. When that is complete, the software engineer shows up and loads the software for the system. If they do their jobs well, you will have received full instructions on how to contact Atlanta in case of hardware or software problems. You will also have been given your contract numbers and instructed on calling procedures and what other information is available.

But if you are adding a second system, or you are a VAR (like us), you will often find yourself, rather than the SE, trying to load software. Then if you run into trouble, you have a real problem—such as I had recently. We purchased an MV/15000 model 8 with some specialized third-party hardware through an OEM for resale with our software. The OEM's field engineer installed the hardware, but I couldn't get the system to run the operating system on the starter tape. I called Atlanta and explained I did not have a contract number yet, but I was only in the third day of the 90-day SPSA level one support included in the license. I gave the sales order number (which always resolved any problems in the past), but was told this time that it meant nothing to them. I wasn't allowed to talk to a software engineer, so I had to wait for an FE to call. I read the message to him saying AOS/VS will not run with this instruction set, and he came to the same conclusion that I did—we probably had the wrong rev of microcode. This was on Friday afternoon shortly after 5 p.m.

Monday morning, I found out from a different source (a user group member, no less) that the problem was that the rev 7.5 starter tapes would not run on the MV/15000 and that the 7.57 update tape had the starter system for the MV/15000 series. A few hours later, we also found the release notice that had been "filed" by one of the other people in the office that also explained this. To DG's credit, the FE did call back occasionally to see if we were having any further problems; however, the answer I needed most came from *outside* DG, not from DG.

Although the mishap would have been completely avoided if I had managed to get my hands on the documentation first, the problem concerning DG procedures still needs to be ad-

dressed. Although the centralized Atlanta number for all support is a good idea in theory, it doesn't do you any good whatsoever without your contract numbers. If you are an OEM or VAR who plans to do software installs, the SE will not come on site to present you with the contract number and call guide. Therefore, my question to DG is why can't the contract numbers be included with the sales order number, purchase order number, and the rest of this information on the packing slips? If that is too much trouble to implement, why can't we use the sales order number as a temporary contract number during the 90-day warranty period? It used to work, but now it apparently doesn't.

A trip to the mailbag

The mailbag has been as empty as my checking account after receiving the hospital bills we recently ran up. Can everyone out there really be all that content with their DG systems? Doesn't anyone have a problem that has been bugging them, but never had the time to dig into it? Send in your questions on a Quick Connect card. I try to do something about every question that comes in, even if it is just to put the question out to the other users. Δ

Jim Siegman is a contributing editor to Focus, chairman of the NADGUG audit committee, and treasurer of the Chicago Area Data General Users Group. Send comments or questions to Datamark Corp., 3700 W. Devon, Suite E, Lincolnwood, IL 60659; 312/673-1700.

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Software library index



A complete listing of the software currently housed in the NADGUG library by Randy Berndt, NADGUG librarian

Each month, *Focus* will list the software currently available in the NADGUG library. If you are a member, you can receive the entire collection by sending a 1,200-foot tape to Randy Berndt, American Urological Association, 6750 West Loop South, #900, Bellaire, Texas 77401, or call 713/665-7500. Software contributions can be sent to the same address.

If you send a tape, please include a self-addressed return envelope with enough postage to return it. In compliance with postal regulations, a postage meter tape should not have a day of the month in the date because I will not be mailing it back to you on a specific date. Also, if you send it near the end of the month, please have the postage meter tape date set for the following month.

The following descriptions are extracted from the library contents file included with the distribution tape.

AOSKERM

This is an AOS version of KERMIT written in Fortran. Uses 487 blocks.

DBCHECK

This is our first submission from Europe. Lee Dickinson of IBIS Information Services submitted this program that will check the open status of an INFOS

file, and will also examine the checkpointing status of a file. If checkpointing is enabled, it will force a checkpoint. See the file LETTER for details of usage. Uses 230 blocks.

DUMpload

DUMpload is a Macintosh program to dump and load AOS/VS-compatible dumps on a Macintosh. To get this program over to your Mac, you will need a communications program that supports MacBinary XMODEM transfers and the public domain Mac program BINHEX. Don't forget to use the -k switch on TEX. Then run BINHEX on each of the three files (some communications programs do this step for you as a part of the transfer). DUMpload is the actual program. .NOTES is a short message from Tom Stamm. EDIT is the application used to read .NOTES. Uses 140 blocks.

FTNCVT

FTNCVT is a Fortran 5 to Fortran 77 translator. I don't know its source or how well it works. Any feedback from users would be appreciated. Uses 287 blocks.

GAMES

GAMES is a collection of things accumulated from various places. Most of them can be accessed from the GAMES.CLI macro, but a couple, like MONOPOLY and CB, use disabled consoles, so aren't included in the main macro. To install the games, create a link in your macros directory GAMES.CLI that points to :GAMES:GAMES.CLI. Put the GAMES.DMZ file in the root (:), and execute the NADGUG macro there (the NADGUG macro is included on the

distribution tape). That will load everything into the directory :GAMES. If you don't want the GAMES directory directly off the root, create a link :GAMES to wherever they will be. I think only one person can play Adventure at one time, and Quest is an unbelievable resource hog. Enjoy. Uses 19,293 blocks.

GLOSSARY

GLOSSARY is a program from John Grant that will build a list of words used in a document and show where they are used. Uses 416 blocks.

JAG_UTIL

JAG_UTIL consists of several programs. FILECOUNT allows you to list the counts and combined sizes of files based on various selection criteria. USERSPACE counts the space used by CPDs within :UDD. SCAN allows you to search for strings within multiple files at the same time. LAMINATE allows you to combine two text files in various ways.

John Grant has reserved some rights on his stuff, so check the documentation for specifics. Uses 1,501 blocks.

KERMIT

KERMIT is a file transfer protocol developed at Columbia University. This version was ported by Phil Julian from the Unix C code. Also included is an EMACs editor (the PC documentation, while not directly applicable, was included by me as a possible help). There are also several compression programs, including the one used to prepare this tape.

KERMIT is public domain, as are the various utilities. NADGUG.LETTER in the KERMIT subdirectory is the letter Phil included with his tape. It has some

helpful information on getting KERMIT started. Uses 9,328 blocks.

LOOK

LOOK is a program used to view text files. It allows you to move forward and backward in a file. This program was donated by Data General. Uses 438 blocks.

Note: If anyone can tell me the significance of the 1-byte difference between LOOK.PR and VLOOK.PR, I would appreciate hearing from you.

MACBOOK

MACBOOK is a collection of macros from the Colorado users group. Uses 342 blocks.

QHELP

QHELP is a tree-structured help facility. You can create input files, run them through the QHELP compiler, call QHELP, and move from topic to subtopic to sub-subtopic. This program was donated by John Grant. It was the subject of a session at the 1987 NADGUG conference in Las Vegas. Uses 2,277 blocks.

SWITCHES

SWITCHES is the GET.SWITCHES routine from John Grant. This collection of routines will allow you to easily code minimally unique switches into your 32-bit application. These routines were described in a series of articles in Focus. Uses 1,297 blocks.

TEX

TEX (Terminal Emulator with XMODEM) is a terminal emulation program written by David Down. It allows XMODEM and YMODEM transfers with options to simplify transfers between DG MVs and various types of PCs.

TEX is being distributed as shareware. This may be a new concept to some of you (it is very common in the PC world). You may distribute the program freely and use it yourself for 30 days to try it out. At the end of 30 days, you must either get rid of your copy or send David Down a registration fee at the address listed in his documentation. This lets you see it and use it before deciding to purchase it. Uses 426 blocks.

VT100KER

VT100KER is the VT100 emulator from John Grant. It is part of a KERMIT implementation that doesn't have the file transfer protocols working yet. Uses 1,135 blocks.

XFER

XFER is a tape conversion utility. Δ



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Circle 26 on reader service card.

SECURE YOUR ENVIRONMENT WITH menuOP

Jan 28, 1988	Main Menu	5:56:29 PM
<ul style="list-style-type: none"> 0) ...about menuOP (tutorial) 1) CEO (Data General's CEO) 2) Library (WordPerfect's Shell) 3) File Crypt (data encryption) 4) PIPELINE (async mail delivery) 		
Option Id: 0		
(F11 = Exit /Cancel) (SF1 = Help)		

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Circle 15 on reader service card.

DG announces server terminal products

Westboro—Data General has announced two new terminal server products called Term Server and Term Manager. Term Server allows asynchronous devices to communicate to host computers over an Ethernet LAN. Term Manager provides a comprehensive set of network management capabilities for Ethernet-based terminal environments. (Both increase user and network effectiveness by simplifying design and access to multihost and multivendor environments.)

These products are the first in a series of Data General products resulting from the marketing and development agreement with Bridge Communications announced last July.

Term Server is a high-performance terminal server that connects up to 10 asynchronous devices (terminals, PCs, printers, and/or modems) to a host computer over an Ethernet LAN. The Term Server offers a complete set of

connection services to provide high availability, multisession, and multihost support. Term Server provides a context-sensitive help facility and macros that automate and simplify user connections. Logical port and host names can be used to simplify network access.

Term Server, based on a 68000 processor, enables up to 10 devices to operate concurrently at 19.2 Kb per second. Each Term Server can be configured for individual port security and device requirements. About the size of a standard briefcase, Term Server is designed to be installed in offices, computer rooms, or wiring closets.

Term Manager offers a comprehensive set of network management capabilities for the Ethernet-based terminal services environment. Term Manager manages the configuration of the network, setting characteristics and access privileges for each Term Server port.

Term Manager maintains a constant audit trail of network errors and usage. Audit trail records contain statistics for each connection mode, including con-

nection source and destination, connection duration, and traffic. The network manager can then review this information in reports or graphs for network performance analysis, accounting, and problem diagnosis. Critical network parameters and alarms are captured by the Term Manager. The alarms notify the network manager of errors that exceed specified levels. Term Manager is based on the Data General Dasher/286 PC with 2.6 MB memory, a 1.2 MB diskette, and a 40 MB hard disk.

Pricing for the Term Manager begins at \$12,160. Term Server prices range from \$3,650 to \$4,260. Both products are available in the United States and Canada within 30 days after receipt of order. Δ

Circle 68 on reader service card.

Cognos launches Powerhouse PC

Ottawa—Cognos has entered the personal computer workstation market with the release of Powerhouse PC, a

SECURE YOUR ENVIRONMENT WITH FILE CRYPT

Msgs: New 0 Jan 28, 88 2:15PM Doc: CAI Document

>> CAI Integrated File Crypt <<

Please specify document to process (or press CANCEL/EXIT)

Read Your Document

Drawer Name: CAI Drawer
Folder Name: CAI Folder
Document Name: CAI Document

CAI Document will be encrypted

Key:

(Please enter encryption key again for verification)

- * Documents and files are encrypted quickly and easily
- * Software implementation of DES (Data Encryption Standard), FIPS-PUB 46 (1977)
- * Available for CEO, WordPerfect and AOS/VS

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Circle 59 on reader service card.

full-function version of Cognos's fourth-generation application development language that runs under DOS or OS/2 on 80286- and 80386-based PCs.

The product has built-in communications facilities that enable Powerhouse programmers to develop applications on a PC to run on a minicomputer or vice versa.

Powerhouse PC includes all the standard Powerhouse modules—a data dictionary, a dictionary reporter, a screen design and data input program, a volume transaction processor, and a report writer. In addition, there is a microcomputer file format utility and a host connection program to provide terminal emulation and to transfer data, files, or complete applications. An import/export utility allows users to transfer data between Powerhouse PC applications and PC-based programs.

The product runs on IBM PC ATs or compatible 286/386 machines, including HP Vectras, DEC VAXmates, and DG Dasher/286s, as well as IBM PS/2 model 50 and up. The minimum configuration DOS version requires 640 KB of RAM, and its OS/2 counterpart requires 2.5 MB.

Cognos, Inc., 3755 Riverside Dr., Ottawa, Ontario K1G 3Z4; 613/738-1440. Δ

Circle 67 on reader service card.

New I/O front-end for DG computers

Drayton Plains, MI—Indocomp Systems, Inc. has introduced the IND-68000 that allows Data General computers to directly interface with industrial and laboratory devices by providing a wide range of digital, analog, and pulse I/O. The product consists of an external chassis containing between one and eight boards. Each board consists of a 68010 microcomputer system, plus a versatile selection of process I/O features, including analog input, analog output, encoder input, digital I/O, and counter/timers.

Firmware residing in the IND-68000 offloads the Data General host by performing I/O preprocessing functions such as digital I/O scanning, analog I/O sampling, threshold detection, change-of-state detection, etc. The IND-68000 can be interfaced serially to any Data General computer. A high-speed parallel interface (up to 10 MB per second) is available for the L-Bus-based systems (MV/2000, MV/1400, and DS/7500). AOS/VS-compatible interface software is available for both approaches.

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Date	Sender	Summary
January 28, 1988	Current inbox	9:16:29
1) 15-Jan-88	Sue	Meeting on Thursday
2) 20-Jan-88	John	PIPELINE information
Choose one: (1. Switch to outbox, 2. File Mail, 3) Examine, 4. Delete)		1

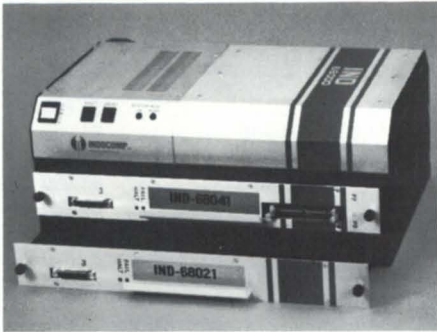
- * PIPELINE is an asynchronous mail and file delivery package
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- * Support for dial up and dedicated lines without requiring Xodiac
- * Dialing and connection procedures are transparent to the user

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The IND-68000 can be configured to accommodate both large and small applications. A complete unit with serial interface, 16 analog inputs, two analog outputs, two encoder inputs, and 40 digital I/O points sells for \$3,640, including a two-slot chassis with power supply. A larger unit with 128 analog inputs, 16 analog outputs, 16 encoder inputs, and 320 digital I/O points sells for \$19,800, including an eight-slot chassis with power supply. The IND-68000 is available for immediate delivery. Volume discounts are available.

Indocom Systems, Inc., P.O. Box 157,

Drayton Plains, MI 48020; 313/666-9715. Δ

Circle 69 on reader service card.

Interscience introduces two new disk subsystems

Agoura Hills, CA—Interscience Computer Services, Inc., a supplier of peripheral subsystems, has announced two high-capacity disk subsystems: ICS D430 and ICS D732. Both subsystems are fully compatible with DG's Argus (6236/39) and employ Control Data's 8-inch Sabre disk drives.

ICS D430 is available with capacities ranging from 430 MB to 1.72 GB formatted. ICS D732 is available with capacities ranging from 732 MB to 2.92 GB formatted.

The new subsystems offer mass storage and high performance in a compact package. Average seek time is 16 and 18 msec, and data transfer rate is 2.46 MB/sec. ICS D430 and ICS D732 may be

configured with up to four drives. The subsystems come complete with power supply, controller, rack-mount drawer, and cabling.

The D430 and D732 subsystems have retail prices of \$17,995 and \$19,595, respectively. Prices include installation and 90-day warranty for parts and labor.

Interscience Computer Services, Inc., 5171 Claretton Dr., Agoura Hills, CA 91301; 818/707-2000. Δ

Circle 71 on reader service card.

MOR Systems develops software for DEC to DG conversion

Long Island, NY—MOR Systems, a software and consulting firm based out of Long Island, New York, has developed a conversion program that will provide users of Data General's AOS/ICOBOL the ability to automatically convert programs to DEC's VAX/VMS/COBOL.

The program will be useful for com-

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panies that want to change computer systems without losing a substantial investment in software. A version of the program will also be available for DEC to DG conversions.

MOR Systems, 351 Plandome Rd., Manhasset, NY 11030; 516/627-2838. Δ
Circle 73 on reader service card.

Le Software Man offers Ult Routines Library

London—Following last November's launch of The Ultimate software, Le Software Man has announced the release of the Ult Routines Library, a collection of 120 routines, 95 percent assembler-written, aimed at VS COBOL.

The routines implement all the system calls that are required in most commercial applications to allow the programmer to write readable and maintainable COBOL code. For example, a routine call like CALL is ULT.CHANGE.DIRECTORY, rather than

the COBOL equivalent, CALL "?CBSYS" USING GDIR, etc.

The library provides the means to implement most CLI functions from within COBOL, as well as providing the solutions to a number of unresolved STRs, such as the facility to multitask COBOL programs, the facility to retrieve the username and a program's revision number, and other facilities including process communications (IPCs) and management facilities.

A demonstration tape with a list of routines is available upon request.

Le Software Man, P.O. Box 545, London N7 8DF, England; 1/609-4494. In the U.S. and Canada, Datalynx Inc., 6659 Convoy Ct., San Diego, CA 92111; 619/560-8112. Δ

Circle 72 on reader service card.

Interface Electronics offers new multiplexor

Farmington Hills, MI—Interface Electronics has announced a new sta-



tistical multiplexor designed for Data General users. The PRISM (Programmable Interface Statistical Multiplexor) can be configured with 8, 16, or 24 asynchronous port capability and with one or two synchronous data links.

Point-to-point as well as multidrop configurations can be supported by the same units at the same time. Unit pricing starts at \$2,000 for an eight-port unit. OEM discounts and evaluation units are available on request.

Interface Electronics, 37500 Enterprise Ct., Farmington Hills, MI 48331; 313/553-9820. Δ

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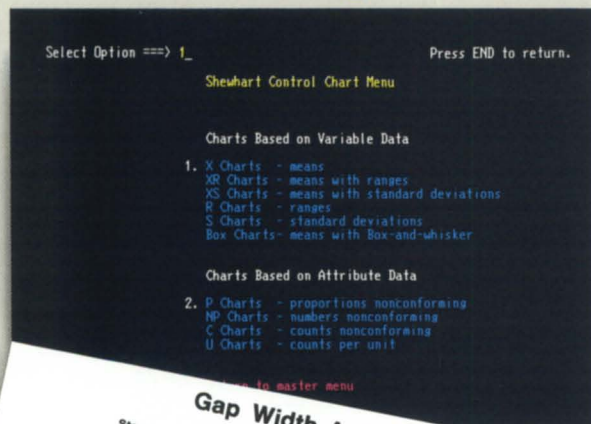
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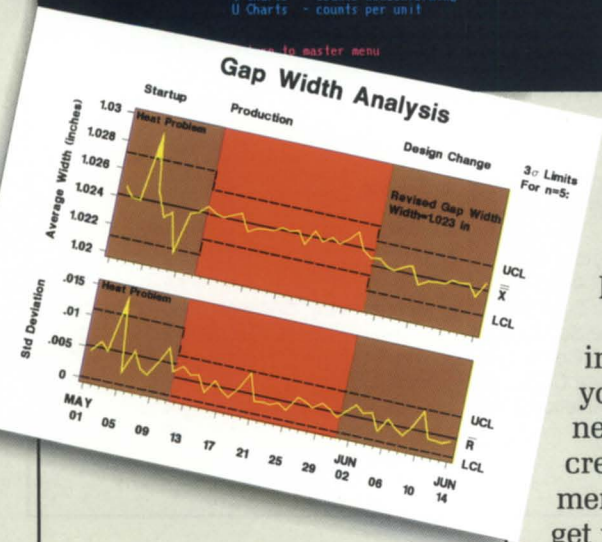
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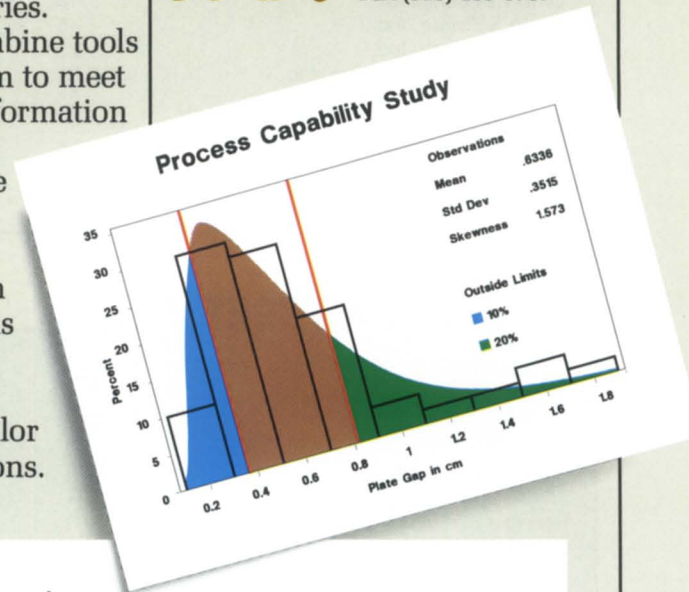
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NADGUG's electronic bulletin boards

(300 or 1200 baud modem)

Rational Data Systems 415/924-3652

OIS (to get an OIS ID and password, contact a DG field engineering telemarketing

representative) 800/325-3065

In Massachusetts 800/952-4300

In Canada 416/823-7830

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NADGUG staff 617/898-4067

Editorial questions, comments, article suggestions

Greg Farman or Carolyn

Kelly (please send product

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For the past four years, the Law Enforcement Data General Users Group (LEDGUG) has provided a forum for law enforcement, corrections, intelligence, and other criminal justice agencies running a variety of applications software on Data General hardware. Applications used by member agencies included records management, computer aided dispatch, intelligence, jail management, personnel, and crime analysis. Hardware utilization ranges from DG PCs to MV20000 machines, with users supporting a variety of DG languages and operating systems.

Each spring, the LEDGUG hosts an annual conference/training session. The 1988 conference is to be held in Richmond, Virginia, May 8-11 at the Sheraton Airport Hotel, with the theme of "Where do we go from here?"

For additional information on the LEDGUG, contact:

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Data General has now entered the hot site/disaster recovery market through an agreement with Data Assurance of Englewood, Colorado. For a monthly subscription fee based on configuration, customers will have an alternate data processing facility in the event that their systems are rendered inoperable because of a disaster or an emergency. Subscriptions also include disaster recovery planning and consulting.

Data Assurance has offered disaster recovery to DG users for several years, especially to application-critical industries such as health care and finance.

Arcata Graphics/Kingsport, a supplier of prepress, printing, and binding services, recently installed a Penta composition system valued at approximately \$500,000. The new composition, mathematical, batch and interactive pagination software is expected to handle more than 50 percent of Arcata's work, particularly with heavily illustrated books and books with complex tables or equations.

Previously, text was set exclusively with Arcata's proprietary software running on a mainframe, and was pasted up manually.

The new installation includes a 32-bit Data General MV/7800, two 595 MB disk drives, a 1600/6250 magnetic tape drive, 16 Saturn terminals, and four of Penta's MakeUp Master interactive terminals.

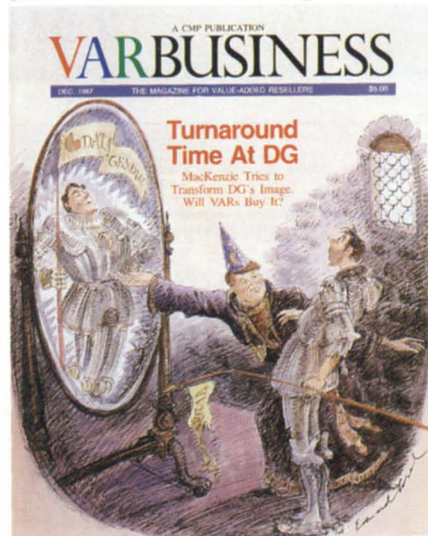
Partnership for Success, a Data General program that encourages field engineers to become involved in sales efforts, seems to be successful itself. Since it started about one year ago, almost \$27 million worth of business has been brought in. Top-selling field engineers are awarded points based on the dollar value of each lead that turns into a sale. These points can be accumulated and exchanged for prizes.

Value-added reseller training appears to be the latest marketing program created to extend service and support to Data General's VAR customers. The program provides VAR sales representatives with product and sales training, and consists of four parts: product orientation, two sales skills courses, and one to three weeks of free technical product training.

In additional VAR news, *VAR Business*, a trade publication for the VAR

industry, recently featured Ward MacKenzie, vice president of Corporate Marketing, on its December 1987 cover. On it, he is caricatured as Merlin the Magician because of the positive changes he has brought recently to Data General's VAR program.

According to MacKenzie, "We have a great deal to believe in these days. We have made it clear to investors, investment analysts, and members of the press that we have our act together. Together, we will achieve magic."



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Orbi Inc., a computer-integrated manufacturing software vendor, is providing hands-on training to students at Bryant College's Graduate School of Business by donating its Impcon software and training. Impcon is a manufacturing planning and control package for Data General computers. The system will be integrated into the school's curriculum in two phases: first, business cases and notes on manufacturing planning and control based on Impcon will be incorporated into the required one-semester course on operations management. In the second phase, scheduled to start in mid-1988, Impcon will be the subject of an elective course on manufacturing planning and control.

According to Dr. Lance Heiko, the associate professor of management who has coordinated the implementation of Impcon into the college, "Impcon will help our MBA students acquire the techniques and tools currently used by the most successful and future-oriented American companies."

In commemoration of the 20th anniversary of the announcement of its first

product, the SPSS data analysis system, SPSS Inc. is conducting a search among its estimated 1.2 million users for the 20 individuals who have used SPSS products the longest.

Once found, these individuals will be inducted into the Platinum Club. Those who believe they may be eligible should contact Jeffrey Wiss of SPSS at 312/329-2400.

Pansophic Systems, Inc. has signed a letter of intent to acquire the assets of the computer graphics business of Micro/Graphix of Falls Church, Virginia, for \$1.2 million in cash, with additional contingency payments. This attainment will form "an attractive distribution channel to the federal government market," according to David J. Eskra, chairman and CEO of Pansophic.

Joseph P. Mulderig has been appointed president of Grumman Systems Support Corp., an independent third-party computer maintenance company based out of Woodbury, New York. He was previously vice president of service operations.

Help wanted: As computer professionals, you all realize the importance of two-way communication, but unfortunately, a magazine is traditionally a one-way medium of communication.

We want to enlist your help so that *Focus* can be the publication that you want it to be, and suit the needs of members of the North American Data General Users Group. If you have any article ideas, messages to Data General that you would like to voice in an editorial, products that you would like to see reviewed, or any other suggestion, please let us know. You can fill out a Quick Connect card found in each issue, write us a letter, or call Greg Farman or Carolyn Kelly at 512/345-5316.

Data General recently donated 10 DG/One portable computers to support operations at the 40th International Congress of the Association of Students in Economics and Business Administration (AIESEC). Held in Sturbridge, Massachusetts, more than 450 attendees from 67 different countries participated in the event.

At this largest yearly event for the student-run, nonprofit organization, student profiles and job descriptions from all over the world are matched by computer. The Data General computers helped expedite this matching process.

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