

SOURCE DATA

THE DATAPOINT SYSTEMS NEWSLETTER

No. 15

October/November 1981

ash...News Flash...News Flash...News Flash...News Flash...
 ews Flash...News Flash...News Flash...News Flash...Ne
 ash...News Flash...News Flash...News Flash...News Flash
 ews Flash...News Flash...News Flash...News Flash...Ne
 ash...News Flash...News Flash...News Flash...News Flash
TANDY Selects ARC Local
Network Structure (ARCNET)
for TRS-80 Computer Network
 ash...News Flash...News Flash...News Flash...News Flash
 ews Flash...News Flash...News Flash...News Flash...Ne
 ash...News Flash...News Flash...News Flash...News Flash
 ews Flash...News Flash...News Flash...News Flash...Ne
 ash...News Flash...News Flash...News Flash...News Flash

In September, a joint announcement was made by Datapoint® Corporation and Tandy* Corporation in New York that expands the scope of Datapoint's Attached Resource Computer® (ARC™) local network. Basically, Tandy will use ARCNET, the local network component of Datapoint's ARC system to provide a low-cost high-speed local network for its Radio Shack* TRS-80* Model II microcomputer. Just as ARC allows up to 255 processors on a single, multi-function, multi-tasking network, ARCNET allows the interconnection of up to 255 TRS-80 microcomputers.

ARCNET provides an inexpensive, efficient way to link a large number of computers together. Multiple TRS-80 Model II computers on an ARCNET can access common data bases, such as accounting, word processing information or electronic filing systems, and share the use of peripherals (printers, for example) throughout the network.

ARCNET gives both existing TRS-80 Model II owners and new buyers a clear path for future expansion to the full capabilities of Datapoint's ARC system. It provides a common data base to users, allowing easy addition of sophisticated software. An interface card is required in each computer in the network. This card is installed in existing card slots in the rear of the TRS-80 Model II.

Datapoint and Tandy will jointly develop the hardware and software elements of the system, scheduled for mid-82 availability.

*Tandy, Radio Shack and TRS-80 are trademarks of Tandy Corporation.

For "In This Issue", see page 2

The 8600—Part of a Family of Processors

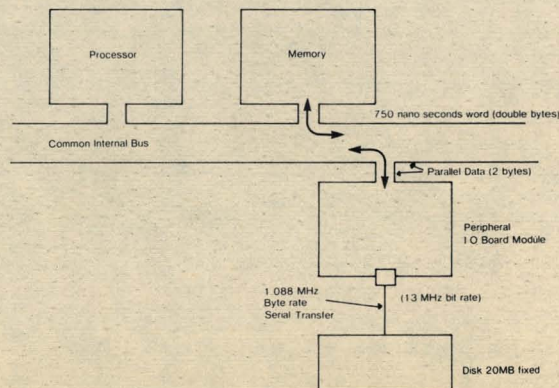
In September, Datapoint announced its new 8600, the second in a new family of Datapoint processors and workstations. Let's take a look at what this new processor can do for your hardware configuration.

Fully Compatible Processor

The 8600 features a powerful central processor unit (CPU) patterned after the current 6600. Its modular design provides cost-effective, multi-function capability in the ARC network. The Resource Interface Module (RIM) for the Attached Resource Computer (ARC) interface is an integral LSI chip, rather than the external black box you've seen. The 8600 has a memory capacity of up to 256K bytes. The 8600 combines word processing and electronic mail with powerful data processing capabilities, high throughput and a unique Datapoint-developed disk system. It can also be configured with a local disk. When the 8600 is operated with RMS™ software, it will have full multi-processing capabilities. For instance, COBOL, word processing, data entry, and electronic mail could all be handled simultaneously with the RMS system. The 8600 also operates Datapoint's Disk Operating System (DOS) as an application processor.

Direct Memory Access

The 8600 processor transfers disk data to and from memory by a direct, high-speed transfer.

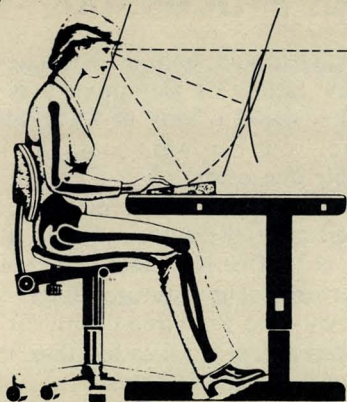


This DMA technique permits very high speed transfers without having to pass through the processor.

continued inside . . .

Ergonomic Features

Ergonomics is the science of human engineering factors. Ergonomics has been a significant market factor in the European countries in the past several years. Datapoint incorporates this technology within the 8600. Its large, high-resolution screen, with a diagonal width of 12 inches, has an amber display. (Studies in Europe have determined that amber is the least tiring color on the eyes.) The intensity of the screen can be controlled from the keyboard, with 16 levels of brightness, and you can also select features such as inverse and two-level video, blinking, and underlining. The 8600 is also available with an optional tilt-rotate base, which allows you to place it at any angle comfortable to you. The keyboard is not attached to the processor but is connected by a coiled cable, like a telephone cord, that can be extended to a length of one meter, or about 39 inches. The 8600 is a quiet machine, equipped with a thermostatically controlled fan that keeps noise to a minimum.

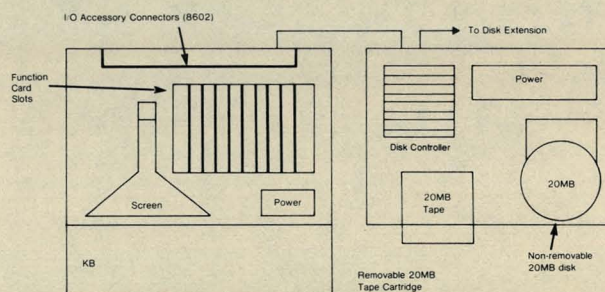


The 8600 Reflects Human Engineering

Advanced Disk System

Introduced with the 8600 is the 9301 disk unit, a high-technology mini-disk system designed and manufactured by Datapoint. By using a special thin-film disk, it can store 20 million bytes on the stack of 5 1/4" platters. You can even extend your maximum storage capacity to 100MB by adding extension units. These extension units include either one drive (for 20MB) or two drives (for 40MB) within one cabinet. An 8600 can support two extension drives (20 or 40MB) plus the original 9301.

The 9301 also includes, in the same housing, an advanced cartridge tape drive that can transfer the contents of the entire disk to a single quarter-inch tape cartridge, allowing the disk to be backed up or the contents transferred to another 9301 drive. The disk is made of a tough, durable ceramic that does not require replacement under normal use. A Datapoint-developed alignment technique precisely aligns the tape recording head to each tape cartridge, allowing full interchange of data between 9301 units.



8600 Processor and 9301 Disk Drive:
Internal Architecture

In this Issue

DATA PROCESSING

<i>Tandy Selects ARC Local Network Structure (ARCNET) for TRS Computer Network</i>	1
<i>The 8600—Part of a Family of Processors</i>	1
<i>8200 Version 2 for DOS and RMS Applications</i>	3
<i>Fundamentals of Systems Design and Analysis: File Access Methods</i>	4
<i>1500s Can Become 1550s</i>	8
<i>DSKGEN18 & LOAD18—Choosing the Right Product</i>	9
<i>RMS CHAIN Makes Life Easier</i>	10
<i>RMS 1.6 Release</i>	12
<i>Automatic RMS?</i>	12
<i>How To Keep RMS Up-To-Date</i>	13

OFFICE APPLICATIONS

<i>Word Processing 1.4.1 Released</i>	14
<i>IEOS Documentation Clarified</i>	14
<i>Word Processing Tricks</i>	15
<i>Electronic Mail as Total Communications: Possibilities, a Pilot, and Performance</i>	16

OFFICE COMMUNICATIONS

<i>Call Accounting and Management Systems</i>	20
<i>LightLink Installations Expand</i>	20

OTHER

<i>ARC User's Survey</i>	19
<i>You Choose the Prize</i>	19
<i>New Products, Catalog Available</i>	21
<i>Expanded Print Option Available for 160 CPS Printer</i>	22
<i>Printing Alternative</i>	23
<i>Datapoint's First Vendor Financing Program</i>	23
<i>Customer Education Schedule</i>	24
<i>Introductory Seminars and Special Education</i>	25
<i>Word Processing Course for IEOS 1.3</i>	25
<i>Customer Education Changes</i>	25
<i>Software Releases</i>	26
<i>SOURCE DATA Advertising</i>	29

SOURCE DATA is a bimonthly educational publication for customers of Datapoint.
Editor: Karrie Reagan, Lori Buffum
Address all manuscripts, comments, questions, subscription requests, advertising to:
SOURCE DATA
9725 Datapoint Dr. #T-41
San Antonio, Texas 78284
Phone (512) 699-7059

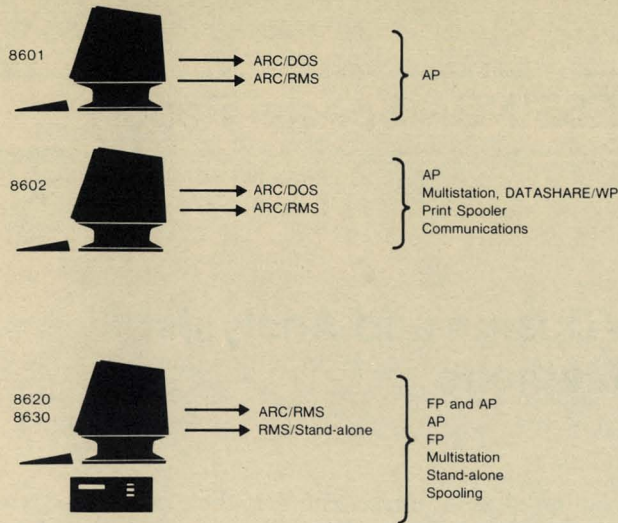
Dated Material: Techniques or facilities described in each issue are accurate as of the publication date; however, computing changes rapidly so please rely on up-to-date permanent documentation such as user's guides for details of software or equipment features.

Copyright © 1981 by Datapoint Corporation. All Rights Reserved.

The "D" logo, Datapoint, Attached Resource Computer, INFOSWITCH, DATASHARE and DATABUS are trademarks of Datapoint Corporation registered in the U.S. Patent and Trademark Office. ARC, RMS, AIM, SHARE, Associative Index Method, Resource Management System, EMS, LightLink and LDCS are trademarks of Datapoint Corporation.

Hardware Configurations

The 8600 is available in four configurations: the 8601, the 8602, the 8620, and the 8630. These are described below:



- 8601 128K or 256K of memory
Serial port for printer
ARC interface
- 8602 128K or 256K of memory
MFCA modem interface (optional)
MPCA terminal interface (optional)
Microbus Interface Board for 9310 disk or peripheral I/O Board for 9301 disk (optional)
Serial port for printer
ARC interface
- 8620 8602 with Microbus Interface Board
10MB Datapoint cartridge disk drive
Supports 40MB with extension disks
1MB diskette
Serial port for printer
ARC or stand-alone processor
- 8630 8602 with Peripheral Interface Board
20MB fixed disk and tape drive
Supports 100MB with extension disks
Serial port for printer
ARC or stand-alone interface

For additional information concerning the new 8600 processor, you can refer to the following documentation:

- 61171 8600 Processor Flysheet
- 61172 8620/8630 Systems Flysheet

- 61115 8600 Product Specification and Hardware Reference Manual
- 61208 9301 Flysheet

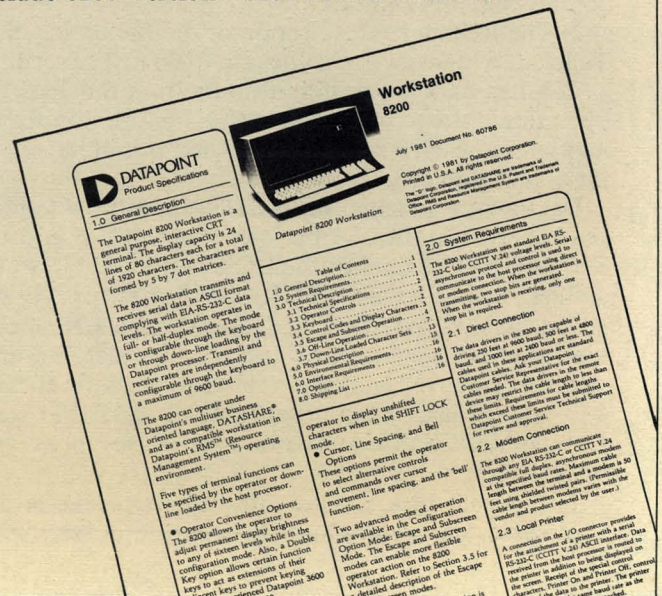
8200 Version 2 for DOS and RMS Applications

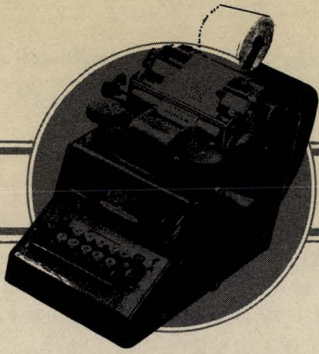


Keeping in step with product compatibility, the 8200 workstation has been updated with Version 2 firmware providing new capabilities that can be used by both DOS and RMS applications.

Among the enhancements that the 8200 Version 2 provides are horizontal scrolling, inverse video, and two-level highlighting (brighter than standard video). The product specification, Document No. 60786, is available describing the product in detail.

You can get your existing 8200 to perform these new functions by ordering model code 0567, a kit for the firmware upgrade (V.2 ROM), for the cost of \$65. Customer Service must install these ROMs in each unit. A one-time site fee of \$80 applies as well as \$25 per terminal upgraded. (The \$80 site fee is waived if the system is being installed.) 8200 orders now in process with Datapoint will have the Version 2 firmware already installed and 8800 orders in process will be adjusted to include 8200 Version 2 ROM at no extra cost.





DATA PROCESSING - Special Report

Fundamentals of Systems Design and Analysis: File Access Methods

One of a system designer's most important jobs is choosing a data file structure and access method. Applications designers often make a very simple choice: make all the files ISAM. Such design work can lead to poor system performance, resulting in excessive system cost or frequent equipment upgrades. This article outlines some of the basic file access methods you can use. With this information, you can choose the file structures and access methods best suited to your needs, and design a better-running system.

File Structures

File structures and file access methods are sometimes confused. The file structure is the manner in which file information is stored on disk. The file access method is the means by which desired information will be retrieved from the file. The file structure is a combination of the physical file structure of the operating system, over which the application has no control, and the file format.

The **DOS User's Guide** describes the physical file structure to store data on a DOS disk (see the chapter on "System Structure"). The most important points to notice are these:

- 1) Each 256-byte disk sector can contain at most 253 bytes of user data, since the first three bytes must contain the PFN and LRN.
- 2) The RIB maps the location of the file on the disk. To locate a segment of the file, the RIB must be read.
- 3) When data is transferred to or from the disk, the operating system must transfer an entire sector, no matter how small a portion of that sector is of interest to the application program.

Datapoint system software supports a single generalized text file format (see Appendix F and the **REFORMAT** chapter of the **DOS User's Guide**), which defines end-of-record (EOR), end-of-sector (EOS), space compression (SC), and deleted data (DEL) control characters. Standard text file format modifies number 1 above, in that a text file can have at most 251 bytes of user data (including EOR and EOS bytes). Datapoint DOS system software recognizes three types of text files:

- 1) Blocked. In a blocked file, the fixed relationship between logical records and physical records (sectors) is

expressed as an integer ratio. If the logical records are shorter than a sector, then the relationship could be 3:1 or 2:1, indicating three or two logical records in each sector. In this case, no record ever crosses a sector boundary. If the logical records are longer than a sector, the relationship could be 1:2 or 1:3, indicating a single logical record occupying two or three sectors. A blocked file does not contain any SC control characters. Normally, every record of a blocked file is the same length.

- 2) Record compressed. In a record compressed file, no special relationship exists between logical and physical records (sectors). A logical record may or may not span a sector boundary, and sectors may hold fractional numbers of logical records. A record compressed file contains no SC control characters.

- 3) Space compressed. A space compressed file is a record compressed file which may contain SC control characters. In blocked and record compressed files, each data character occupies one byte of disk space. In a space compressed file, many spaces may be represented in only two bytes of file space, so no direct relationship exists between data bytes and bytes of disk space.

Access Methods

The access method specifies the means by which information is retrieved from a file. File access in Datapoint DOS system software depends on a current location pointer into the text file, generally an LRN and byte offset, sometimes a PDA and byte offset. Whatever its form, this current location pointer can be called a "cursor" for convenience. Using **DATASHARE®**, **COBOL**, or another high-level language on a Datapoint DOS system, a file read or write operation positions the cursor and then moves the characters of a logical record to/from the disk according to the rules of the file format in use.

Sequential Access

Sequential access is the simplest, least flexible access method available. For a sequential file, the cursor is positioned at the beginning of the file when it is opened and is left positioned just past the end of each record handled. No other positioning of the cursor is possible -- it cannot be backspaced or skipped forward except to reposition it to the beginning of the file. Sequential files are the disk equivalent of tape reels or card decks.

The main advantage of a sequential file structure is speed. The file is always positioned at the correct place for the next operation; practically no I/O work is required aside from the actual transfer of data bytes. The simplicity and speed make a sequential file seem very desirable.

There are three main disadvantages to using a sequential file. First, you cannot update a record in a sequential file. To update a record it must first be read, then the cursor must be repositioned to the beginning of the record again in order to overwrite it. This cursor repositioning is not possible in sequential files. Second, locating a particular record in a sequential file takes a long time, since you must start reading at the beginning of the file and keep reading sequentially until reaching the desired record. The average access would require reading half of the entire file. Third, sequential files are not suitable for shared use. Each user of a file keeps his own cursor for that file. For a sequential file only one cursor position is valid, and it is not possible to communicate that position simultaneously to all users. If an attempt is made to share a sequential file, different users will end up using different cursor values and will damage or destroy the file.

Sequential files are normally written space compressed, which helps save disk space and makes the file I/O work faster. Sequential files are convenient for logging transactions, storing documents, and a variety of other applications.

ISAM Access

For ISAM access, the system builds an index file in addition to the text file. The index file provides a means for rapidly locating one record in the text file, searching by a unique key that identifies each record. The cursor for the associated text file record is stored with each key value in the index file, so locating the key allows direct positioning of the cursor at the text file. Once the text file cursor is positioned, data may be transferred to or from the text file as with sequential access.

ISAM files provide a high-speed search mechanism for applications that must locate particular records very quickly. Since each ISAM transaction positions the cursor as necessary, ISAM files may be shared easily and records in ISAM files may be updated, unless the text file is space compressed. The text file associated with an index file may be space compressed, record compressed, or even blocked. If the text file is record compressed or blocked then records may be updated, since the physical size of the record on disk will not change. If the text file is space compressed the records may not be updated, since the relationship between the logical and physical record length is undefined and the update could change the physical record length on disk.

Since all ISAM accesses must go through the index file, considerable I/O overhead is associated with ISAM access. Unless you need the capability to quickly search for specific records, don't use ISAM.

The index file structure allows quick location of a specific key, but does not provide a structure associating related keys. If some logical relationship exists among groups of records in a file, use an access structure that recognizes that relationship rather than using ISAM.

After the INDEX utility has built an index file, it provides very fast searching for its associated text file.

The structure of this index file degrades as keys are added to it, resulting in slower searching and much more overhead for each ISAM operation. If the file involved will experience a large number of record additions (or update operations affecting the key field), an access structure other than ISAM should be considered.

A single ISAM index can maintain only one key per record. Multiple keys per record require that multiple ISAM indices be created and maintained. Maintaining more than one or two indices produces substantial overhead for on-line systems and can seriously affect performance, and should be avoided if at all possible.

ISAM is useful for parts and materials records, personnel records, and other applications in which each record is a complete logical entity with its own unique identification.

AIM Access

DOS DATASHARE provides an additional indexed access method, called the Associative Index Method™. Like ISAM, AIM™ involves an index file built by the system in addition to the text file. AIM has advantages and disadvantages similar to ISAM as a file access method, but AIM has much more versatility.

AIM search capabilities are tremendously flexible, and allow indexed access for many applications in which ISAM cannot work at all. (See Source Data #9 for a description of AIM.) AIM also allows many keys in a single index, so avoids the multiple index file maintenance problem of ISAM.

Random Access

"Random access" does not actually identify a file access method, but rather a family of access methods in which the application program calculates the cursor according to some set of rules and supplies that cursor to the system software. Random access structures provide the most flexible file access methods and offer the opportunity for very high speed access, but do require some effort on the part of the system designer, who must define the access method and the routines to be used to calculate the cursor and manipulate the text file.

Text files for random access may be record compressed or blocked. Datapoint COBOL and RPG random access use line numbers to specify records of the text file; the language code automatically calculates the cursor value needed to physically access the file. These languages require fixed-length records for random access and use record-compressed files. Datapoint DATABUS® and BASICPLS random access use sector numbers (DOS User LRN) and generally work best with blocked files. The language does not automatically calculate the physical cursor value, so the application program must perform the calculations in program code. Using a file blocked one (1:1) means the sector number and line number are the same, so no cursor calculation is needed. Other blocking factors require some calculation of cursor value, but so long as the file is blocked the calculations are simple and quick.

Random access is often avoided because of its apparent complexity. Random access structures can involve long enqueue counts (FILEPI for DATASHARE) and several separate read and write statements for a single logical operation. A single indexed statement

would require a special batch operation to remove deleted records. Also, these routines assume that only one port at a time will be working on a particular order. If multiple ports may simultaneously attempt to update a particular order, lockout mechanisms beyond the FILEPI statements in these routines would be necessary.

Each routine below is associated with an equivalent operation on the large ISAM file with sequence number keys. In the comment section preceding each routine the equivalent ISAM operation will be cited as an operation on IFILE ORDRFILE.

```

+
. FILE LINKDATA/TXT -- DATA AREA DEFINITIONS
. FILE DECLARATION FOR THE TWO FILES

MSTFILE IFILE          MASTER FILES (ISAM)
MSTRNAME INIT "MASTER/ISI"  NAME OF MASTER FILE
LNKFILE FILE          DETAIL FILE (RANDOM, LINKED LIST)
DTLNAME INIT "DETAIL/TXT"  NAME OF DETAIL FILE

. LINKED LIST POINTER WORKING VARIABLES
. "RECNUM" REFERS TO THE RECORD NUMBER OF A DETAIL RECORD.

LASTLINK FORM 5          RECNUM OF LAST DETAIL RECORD ACCESSED
NXTLINK  FORM 5          RECNUM OF NEXT DETAIL RECORD TO ACCESS
OFFSET   FORM 5          WORK AREA
LNKCOMP  FORM 5          RECNUM WORK AREA
DETLREC  FORM 5          CALCULATED LRN FOR DETAIL FILE READ
LNKEND   FORM "99999"    SPECIAL VALUE TO INDICATE END OF CHAIN

. DETAIL RECORD FORMAT
. "RECNUM" REFERS TO THE RECORD NUMBER OF A DETAIL RECORD. THE DETAIL FILE
. IS A RANDOM FILE BLOCKED WITH BLKNUM RECORDS PER SECTOR. BLKNUM WILL
. NORMALLY BE 2 OR 3. EACH DETAIL RECORD BEGINS WITH A RECNUM (5 BYTES)
. FOLLOWED BY A RECSTAT (RECORD STATUS) (1 BYTE). FOLLOWING THESE 6
. BYTES COME ANY RECORD DATA NECESSARY FOR THE APPLICATION. THE DETAIL
. RECORD IS RECSIZE LONG, COUNTING THE 6 BYTES OF RECORD INFORMATION
. MENTIONED ABOVE.

. RECNUM FORM 5          NEXT RECORD LINK VALUE
. RECSTAT DIM 1         RECORD STATUS
. <detail record>     WHATEVER FURTHER DATA FIELDS THE APPLI-
.                       CATION NEEDS
. EOR EQU 015          LOGICAL END-OF-RECORD BYTE
. EOS EQU 003          LOGICAL END-OF-SECTOR BYTE
. SINCE ALL WRITES TO THE DETAIL FILE ARE DONE WITH "WRITAB" STATEMENTS,
. THE ROUTINES MUST WRITE THE PROPER EOR AND EOS CHARACTERS INTO THE
. SECTOR EXPLICITLY.

. RECSIZE FORM "80"    TOTAL LENGTH OF DETAIL RECORD
.                       (NOT COUNTING EOR)

. BLKNUM FORM "3"      NUMBER OF DETAIL RECORDS IN A SECTOR.
.                       (BLKNUM x (RECSIZE + 1) < 251)
. LASTBYTE FORM "244"  SECTOR OFFSET OF EOS CHARACTER POSITION,
.                       SO ROUTINES CAN WRITE IT IN CORRECTLY
.                       ((RECSIZE + 1) x BLKSIZE + 1)

. MASTER RECORD FORMAT
. RECNUM FORM 5        RECNUM POINTER TO FIRST DETAIL RECORD
. <master record>     WHATEVER FURTHER DATA FIELD THE APPLI-
.                       CATION NEEDS
. KEY DIM 8           ASSUMING THE MASTER FILE IS ISAM, PART
.                       OF EACH RECORD WILL LIKELY BE A KEY

. MISCELLANEOUS OTHER VALUES

ZERO FORM "0"         ZERO VALUE
SEQ FORM "-1"         SEQUENTIAL FILE ACCESS VALUE
DUMMY INIT " "        DUMMY VARIABLE FOR FLAG SETTING
DELETED EQU 0104      RECORD STATUS DELETED BYTE ("D")
CURRENT EQU 0103      RECORD STATUS CURRENT BYTE ("C")

+
. FILE LINKRTN/TXT -- EXECUTABLE ROUTINES
. VARIOUS FILE OPERATION SUBROUTINES

. FILE OPEN OPERATION
. RETURN IF SUCCESSFUL. ABORT PROGRAM IF NOT.

LNKOPEN TRAP PROBLEM IF IO      ABORT WITH MESSAGE IF TROUBLE
OPEN MSTFILE,MSTRNAME          OPEN THE MASTER FILE
OPEN LNKFILE,DTLNAME          OPEN THE DETAIL FILE
TRAPCLR IO
RETURN

. RETURN IF THINGS WENT OK. OTHERWISE DISPLAY A MESSAGE AND STOP.
PROBLEM DISPLAY "UNABLE TO OPEN ",MSTRNAME," OR ",DTLNAME,".":
" FATAL ERROR."
STOP

. READ A RECORD FROM THE MASTER FILE
. Equivalent to "READ ORDRFILE,KEY;<master record>"
. RETURN WITH OVER CONDITION SET IF KEY NOT FOUND (JUST LIKE NORMAL ISAM)
. RETURN WITH EOS SET IF NO DETAIL RECORDS ASSOCIATED WITH THIS MASTER
. ON EXIT: NXTLINK => FIRST ASSOCIATED DETAIL RECORD, OR
. = LNKEND IF NO DETAILS ASSOCIATED.
. LASTLINK = LNKEND, INDICATING NO LAST DETAIL READ
. MASTER FILE LEFT POSITIONED AS NORMAL FOLLOWING ISAM ACCESS.
MASTREAD
. READ THE MASTER RECORD BY KEY
READ MSTFILE,KEY;NXTLINK,<master record>
RETURN IF OVER
COMPARE LNKEND TO NXTLINK
GOTO SETOVER IF EQUAL
MOVE LNKEND TO LASTLINK
RETURN

. READ THE NEXT RECORD FROM THE DETAIL FILE
. Equivalent to "READKS ORDRFILE;<detail record>"
. RETURN WITH OVER FLAG SET IF ATTEMPT TO READ PAST END OF CHAIN.
. RETURN WITH EOS FLAG SET IF RECORD READ IS THE LAST ONE IN THE CHAIN.
. IF A DELETED RECORD IS FOUND IT IS SKIPPED AND THE NEXT DETAIL RECORD
. IN THE CHAIN IS READ.
. ON EXIT: NXTLINK => NEXT DETAIL RECORD OR
. = LNKEND IF NO FURTHER DETAIL RECORDS IN CHAIN
. LASTLINK => RECORD JUST READ

LNKNEXT

```

```

COMPARE LNKEND TO NXTLINK      SEE IF AT END OF CHAIN
GOTO SETOVER IF EQUAL
MOVE NXTLINK TO LASTLINK      SAVE NEW CURRENT LINK
MOVE NXTLINK TO OFFSET
CALL LNKCONV
READ LNKFILE,DETLREC;OFFSET,NXTLINK,RECSTAT,<detail record>
CMATCH DELETED TO RECSTAT    SEE IF RECORD IS DELETED
GOTO LNKEND IF EQUAL          SKIP OVER IT IF SO
COMPARE LNKEND TO NXTLINK
GOTO SETOVER IF EQUAL
RETURN

. CONVERT LINK RECORD NUMBER TO RANDOM ACCESS SECTOR NUMBER AND TAB OFFSET
. No equivalent routine for pure ISAM structure
. ON ENTRY: OFFSET = RECNUM TO CONVERT
. ON EXIT: DETLREC = RANDOM ACCESS RECORD NUMBER
. OFFSET = BYTE OFFSET FOR READ/WRITE TAB IN SECTOR

LNKCONV
MOVE OFFSET TO LNKCOMP
DIVIDE BLKNUM INTO LNKCOMP    DIVIDE BY RECORDS/SECTOR
MOVE LNKCOMP TO DETLREC      TO GET SECTOR NUMBER
ADD "1" TO DETLREC           OFFSET BY ONE TO SKIP HEADER SECTOR
MULT BLKNUM BY LNKCOMP        CALCULATE REMAINDER
SUBTRACT LNKCOMP FROM OFFSET
MULT RECSIZE BY OFFSET       MULTIPLY REMAINDER BY RECORD LENGTH
ADD "1" TO OFFSET            ADD ONE TO GET TAB OFFSET
RETURN

. GET THE NEXT AVAILABLE LINK FILE RECORD NUMBER
. No equivalent routine for pure ISAM structure
. ON EXIT: NXTLINK => NEXT AVAILABLE RECORD IN DETAIL FILE
. DETAIL FILE HEADER RECORD POINTER UPDATED

GETLINK
FILEPI 3;LNKFILE
READ LNKFILE,ZERO;NXTLINK
ADD "1" TO NXTLINK
WRITAB LNKFILE,ZERO;NXTLINK
RETURN

. WRITE A NEW DETAIL RECORD, ADDING TO AN EXISTING DETAIL RECORD CHAIN
. Equivalent to "APP SEQUENCE TO KEY
. READ ORDRFILE,KEY;<detail record>"
. THE OVER FLAG WILL BE SET, AND NO NEW RECORD WRITTEN, IF LASTLINK DOES
. NOT INDICATE THAT A VALID DETAIL RECORD HAS ALREADY BEEN READ.
. ON ENTRY: LASTLINK => DETAIL RECORD THE NEW RECORD WILL LOGICALLY
. FOLLOW.
. ON EXIT: LASTLINK => NEW RECORD JUST WRITTEN
. NXTLINK => NEXT DETAIL RECORD IN CHAIN, OR
. = LNKEND, INDICATING NEW RECORD IS LAST IN CHAIN

WRTLINK
COMPARE LNKEND TO LASTLINK    SEE IF CURRENTLY POSITIONED
GOTO SETOVER IF EQUAL        ERROR EXIT IF NOT
CALL GETLINK                  GET RECNUM FOR NEW RECORD
MOVE LASTLINK TO OFFSET      UPDATE CURRENT RECORD TO POINT
CALL LNKCONV                  TO NEW RECORD
FILEPI 2;LNKFILE
READ LNKFILE,DETLREC;OFFSET, LASTLINK
LASTLINK TEMPORARILY STORES THE NEXT DETAIL RECORD POINTER FROM THE
CURRENT DETAIL RECORD.
WRITAB LNKFILE,DETLREC;OFFSET,NXTLINK WRITE NEW RECORD
MOVE NXTLINK TO OFFSET
CALL LNKCONV
CMOVE CURRENT TO RECSTAT
FILEPI 1;LNKFILE
WRITAB LNKFILE,DETLREC;OFFSET, LASTLINK,RECSTAT,<detail record>;
EOR,*LASTBYTE,EOS
MOVE LASTLINK TO LNKCOMP      SAVE LASTLINK TEMPORARILY
MOVE NXTLINK TO LASTLINK     SET LASTLINK TO CURRENT RECORD
MOVE LNKCOMP TO NXTLINK      SET NXTLINK TO NEXT RECORD
RETURN

. WRITE A NEW DETAIL RECORD, ADDING TO A MASTER RECORD
. Equivalent to "APP SEQUENCE TO KEY
. WRITE ORDRFILE,KEY;<detail record>"
. THE KEY FOR THE MASTER RECORD MUST BE SET PRIOR TO ENTRY. THE NEW DETAIL
. RECORD WRITTEN WILL BE PLACED LOGICALLY BEFORE ANY DETAIL RECORDS
. CURRENTLY ASSOCIATED WITH THE MASTER RECORD.
. ON EXIT: LASTLINK => NEW RECORD JUST WRITTEN
. NXTLINK => NEXT DETAIL RECORD IN CHAIN, OR
. = LNKEND IF NO MORE RECORDS IN CHAIN

MSTLINK
CALL GETLINK
FILEPI 2;MSTFILE
READ MSTFILE,KEY;LASTLINK
LASTLINK TEMPORARILY STORES THE NEXT DETAIL RECORD NUMBER FROM THE
MASTER RECORD.
UPDATE MSTFILE;NXTLINK
MOVE NXTLINK TO OFFSET
CALL LNKCONV
CMOVE CURRENT TO RECSTAT
FILEPI 1;LNKFILE
WRITAB LNKFILE,DETLREC;OFFSET, LASTLINK,RECSTAT,<detail record>;
EOR,*LASTBYTE,EOS
MOVE LASTLINK TO LNKCOMP      SAVE LASTLINK TEMPORARILY
MOVE NXTLINK TO LASTLINK     SET LASTLINK TO NEW RECORD
MOVE LNKCOMP TO NXTLINK      SET NXTLINK TO NEXT RECORD
RETURN

. DELETE THE DETAIL RECORD POINTED TO BY LASTLINK
. Equivalent to "DELETE ORDRFILE,KEY" where KEY has been set to
. reference a line item record.
. THE OVER FLAG WILL BE SET, AND NO ACTION TAKEN, IF LASTLINK DOES NOT
. POINT TO A DETAIL RECORD.
. ON ENTRY: LASTLINK => RECORD TO BE DELETED
. ON EXIT: LASTLINK UNCHANGED
. NXTLINK => NEXT DETAIL RECORD IN CHAIN, OR
. = LNKEND IF NO FURTHER RECORDS IN CHAIN

DELETE
COMPARE LNKEND TO LASTLINK
GOTO SETOVER IF EQUAL
MOVE LASTLINK TO OFFSET
CALL LNKCONV
CMOVE DELETED TO RECSTAT
FILEPI 3;LNKFILE
READ LNKFILE,DETLREC;OFFSET,NXTLINK
ADD "5" TO OFFSET
WRITAB LNKFILE,DETLREC;OFFSET,RECSTAT
RETURN

. UPDATE THE DETAIL RECORD POINTED TO BY LASTLINK
. Equivalent to "APP SEQUENCE TO KEY
. READ ORDRFILE,KEY;<detail record>
. UPDATE ORDRFILE;<detail record>"
. THE OVER FLAG WILL BE SET, AND NO ACTION TAKEN, IF LASTLINK DOES NOT
. POINT TO A DETAIL RECORD.
. ON ENTRY: LASTLINK => RECORD TO BE UPDATED
. ON EXIT: LASTLINK UNCHANGED
. NXTLINK => NEXT DETAIL RECORD IN CHAIN, OR
. = LNKEND IF NO FURTHER RECORDS IN CHAIN

UPDATE
COMPARE LNKEND TO LASTLINK
GOTO SETOVER IF EQUAL
MOVE LASTLINK TO OFFSET

```

program continued on next page . . .


```

CALL LINKCONV
FILEPI 3;LNKFILE
READ LNKFILE,DETLREC;*OFFSET,NXTLINK
ADD "6" TO OFFSET
WRITAB LNKFILE,DETLREC;*OFFSET,<detail record>
RETURN

```

ROUTINES TO SET SPECIFIC CONDITION FLAGS ON EXIT

```

SETOVER MOVE "90" TO ZERO
RETURN
SETEOS CLEAR DUMMY
RESET DUMMY
RETURN

```

The following program reorganizes and cleans up the detail file. It would be used in conjunction with the REFORMATting and reINDEXing the master file.

```

. INCLUDE THE DATA DEFINITION FILE
INC LINKDATA
. DEFINE THE WORK FILE
SCRFILE FILE DETAIL WORK FILE
SCRNAME INIT "DTLTEMP/TXT"
. START DETAIL FILE CLEANUP PROGRAM
CALL LNKOPEN OPEN THE MASTER AND DETAIL FILES
PREP SCRFILE,SCRNAME OPEN THE WORK FILE
TRAPCLR IO CLEAR THE IO TRAP SET BY LNKOPEN
WRITE SCRFILE,ZERO;"00000" INITIALIZE THE RECORD NUMBER COUNT
IN THE SCRATCH FILE
. LOOP
READKS MSTFILE;NXTLINK READ THE NEXT MASTER RECORD
GOTO DONE IF OVER SEE IF AT END OF MASTER FILE
CALL LNKNEXT READ NEXT DETAIL RECORD
GOTO LOOP IF OVER GO DO NEXT MASTER RECORD IF END
OF CHAIN
CALL SMSTLINK REWRITE DETAIL IN SCRATCH FILE,
UPDATE THE MASTER RECORD
. DETLLOOP
CALL LNKNEXT READ NEXT DETAIL RECORD
GOTO LOOP IF OVER GO DO NEXT MASTER RECORD IF END
OF CHAIN
CALL SWRTLINK REWRITE DETAIL IN SCRATCH FILE
GOTO DETLLOOP KEEP DOING DETAIL RECORDS
. DONE

```

```

. AT THIS POINT, THE SCRATCH FILE CONTAINS ALL THE DETAIL RECORDS, PROPERLY
LINKED, AND THE MASTER FILE'S POINTERS HAVE BEEN UPDATED TO POINT INTO THE
NEW RECORD NUMBERS IN THE SCRATCH FILE. AT THIS POINT EXIT THE DATABUS
PROGRAM TO A CHAIN FILE THAT WILL EITHER KILL THE DETAIL FILE AND RENAME
THE SCRATCH FILE AS THE DETAIL FILE, OR WILL COPY THE SCRATCH FILE OVER
THE OLD DETAIL FILE AND THEN KILL THE SCRATCH FILE.

```

INCLUDE THE LINK FILE ROUTINES

```
INC LINKRTRN/TXT
```

INCLUDE THE LINK FILE ROUTINES FOR THE SCRATCH FILE. THIS IS THE SOURCE OF THE "SWRTLINK" AND "SMSTLINK" ROUTINES ABOVE. THE LINK ROUTINES FOR THE SCRATCH FILE ARE IDENTICAL TO THOSE IN LINKRTRN/TXT, BUT REFERENCE SCRFILE INSTEAD OF LNKFILE, AND ALL LABELS HAVE AN "S" STUCK ON THE FRONT OF THEM.

```
INC SLINKRTRN/TXT
```

The SLINKRTRN routines would not be quite identical to the original LINKTRN routines, but the differences would generally be negligible. The only routine that would be particularly different would be the SMSTLINK routine, which would be revised as shown below.

```

SMSTLINK
CALL SGETLINK
UPDATE MSTFILE;SNXTLINK
MOVE SNXTLINK TO SOFFSET
CALL SLINKCONV
WRITAB SCRFILE,SDETLREC;*SOFFSET,LNKEND,CURRENT:
<detail record>,EOR,*LASTBYTE,EOS
MOVE SNXTLINK TO SLASTLINK
MOVE LNKEND TO SNXTLINK
RETURN

```

This sample does not define the only, or even necessarily, the best way to implement this type of file structure. The introduction of this section pointed out some of its weaknesses. The main intent of the example is to show what can be accomplished with random access methods and to provide a starting point for possible actual applications using such structures.



1500s Can Become 1550s

An upgrade kit is now available to convert purchased 1500 systems to 1550 systems. The Z80 2MHz processor will become a Z80A 4MHz

processor with all of its speed. That is a processor upgrade; the diskette drives do not change. Model code 0569 is the kit. The price is \$2500 (quantity discounts are available.) Installation is \$165. The monthly maintenance of \$60 for your 1500/1550 system does not increase for an upgraded system.



DSKGEN 18 & LOAD 18 — Choosing the Right Product

DSKGEN18 is released and available from Software Services. It is a product for DOSGENing DOS.G diskettes on an 1818 system with only a single diskette drive. If you really have a need to DOSGEN diskettes on such a system it will work quite nicely. BUT, please think twice about what function you want to perform before ordering this product. The point is that most people want to DOSGEN diskettes so they can back up files from a 9310/9320. That's not necessary! LOAD18 2.1 is the program to backup 9320 files to a diskette and does not require DOSGENed diskettes to write to.

LOAD18 version 2 must not be confused with LOAD18 version 1. The first version was admittedly slow. The current version however, is really quick and removes many of the first version's other vices. Since LOAD18 2.1 is designed specifically for the backup function, don't use a round-about means like DSKGEN18.

LOAD18 is faster and easier than COPYFILE or ARCOPY:

1. The output diskettes do not need to be DOSGENed; LOAD18 can perform initialization, which only needs to be done once. It takes about 50 seconds.
2. Using single file copy programs to back up a disk requires determining "important" files to copy and "unimportant" files that may be lost. You not only face the possibility of overlooking an important file, but when you have to recover a full backup, it can take a long time to recreate those "unimportant" files of which there was no copy. Using a mirror backup program saves everything so you can get back in operation quickly if you need the backup.
3. A single LOAD18 command line suffices to back up a whole logical volume. COPYFILE or ARCOPY require a command line for each file to transfer. (CHAIN files can be built to handle multiple files but then you have CHAIN programs to write, maintain and store on the diskettes—more work.)
4. An important question is what happens when the important text files being copied exceed the diskette size. A volume on a 9320 disk holds files over 9,000 sectors long. The capacity of even a double-sided diskette is less than half that. ARCOPY or COPYFILE simply can't copy a file that won't fit.

LOAD18 has no such limitations; any file held on a 9320 can be put on diskette(s).

5. LOAD18 can make mirror image copies of 9320 volumes faster than COPYFILE or ARCOPY can copy selected ones. For example, in about 90 seconds, LOAD18 can fill up a single-sided diskette with data from a 9320 volume. Allowing a full half-minute for the operator to swap each diskette, only 10 minutes would be needed to dump a full 2.5 megabyte disk logical volume. Generally, you would only unload allocated space thus requiring three diskettes and only about 6 minutes. (To COPYFILE a 1500-sector file from a 9320 to a diskette takes about 9 minutes. ARCOPY is about the same. Using those programs and copying only selected files actually wastes time and as mentioned before, doesn't provide you the backup with which to recreate working disks as does LOAD18.)

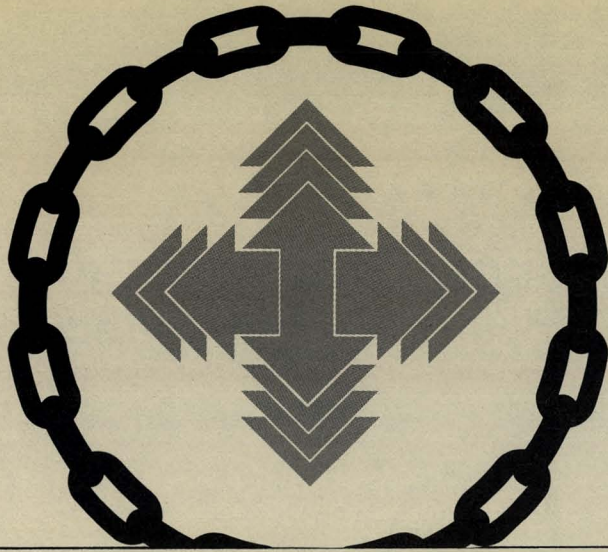
So what is DSKGEN18 good for? DSKGEN18 makes images of diskettes. It does so very quickly, easily, and reliably. If the original diskette to be imaged is simply a DOS.G diskette with system files, CAT, COPYFILE and not much else, use DSKGEN18 to make images of that diskette. These DOSGENed diskettes can then be booted and COPYFILE can copy files from a 9320 to the diskette. That procedure is great if you need to transport the diskette to another system and read the files again, but is not the most efficient way to backup a 9320.

If one identical diskette needs to be sent to several 1800 installations, DSKGEN18 can surface verify the diskettes and copy an image of some master diskette onto them much faster than a string of DOSGENs and BACKUPs run diskette-to-diskette under DOS.G. For people with multiple 1800 installations, the procedure would save time when sending out software revisions.

We hope this article has given you some guidance in choosing the most efficient product for the functions you need to perform.

LOAD18 was released as model code 40426 and the User's Guide is Document No. 50498.

DSKGEN18 was released as model codes 20820 (DMF cassette) and 40465 (double-density diskette) and the User's Guide is Document No. 50642.



RMS CHAIN Makes Life Easier

As an experienced user of Datapoint's Resource Management System™ (RMS) and a data processing professional who understands basic programming techniques and terminology, you will find that RMS CHAIN is a valuable resource for accomplishing your job faster and more efficiently.

RMS CHAIN is a high-level command control language developed by Datapoint to automate the task of repetitively processing commonly used job streams. With CHAIN, you can link together programs and utilities that were once executed one at a time and run them as one job. It even allows you to pass information to programs by including it in the CHAIN file at the point the program will need it.

And there's more. CHAIN also brings you the power and versatility of a programming language in its file managing and data area handling capabilities. Through a comprehensive assortment of directives, functions, constants, and expressions which are elements of the language, CHAIN allows you to:

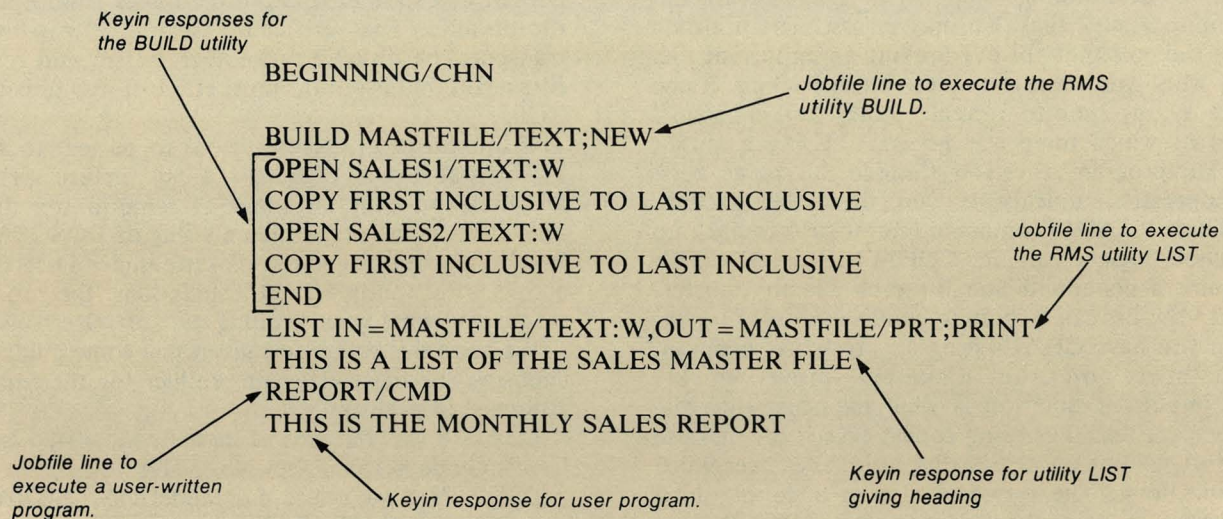
- control job streams
- execute and manipulate programs and utilities

- interact with the workstation
- perform character string manipulation
- perform arithmetic operations
- obtain the status of the system and its components

RMS CHAIN may be used to accomplish very simple tasks as a programming language, or very complex tasks as a sophisticated job stream control language. This versatility lets you simulate program-time decisions that selectively include, exclude, or modify the contents of a job stream.

As a command language, RMS CHAIN allows you to control and conditionally execute a series of programs and utilities. You can AUTOMATE the processing of streams of jobs. It takes the key in requirements of frequently executed programs and utilities from an input disk file that you create and processes them serially with little or no additional interaction.

The job streams executed by CHAIN can consist of RMS utilities or application programs written in such languages as DATABUS, ASSEMBLER, or COBOL. Here is an example of the simplest application of CHAIN:



This example shows a CHAIN file composed of commands for the RMS utilities BUILD and LIST, an application program, and information to be passed to that program. This "job" creates a single file called MASTFILE/TEXT from two input files — SALES1/TEXT and SALES2/TEXT.

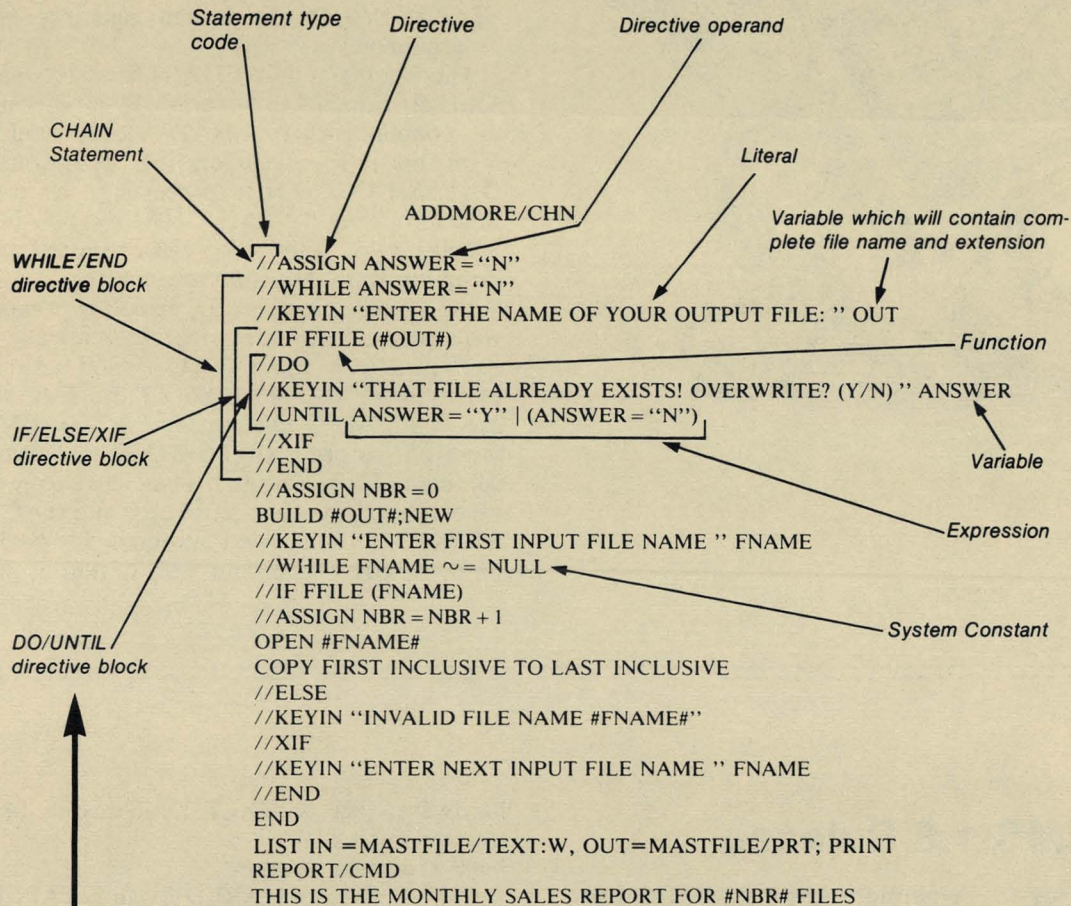
So, by hooking together a series of utilities and programs to be executed automatically by CHAIN, you can use your time to concentrate on other tasks or even sit back and relax.

CHAIN is particularly valuable in providing the capability to:

- operate in a totally unattended mode

- create a multiprogram/utility job stream
- verify the existence of input requirements and then conditionally execute the necessary programs or utilities
- function recursively by calling other CHAINS and using them as subprocedures.

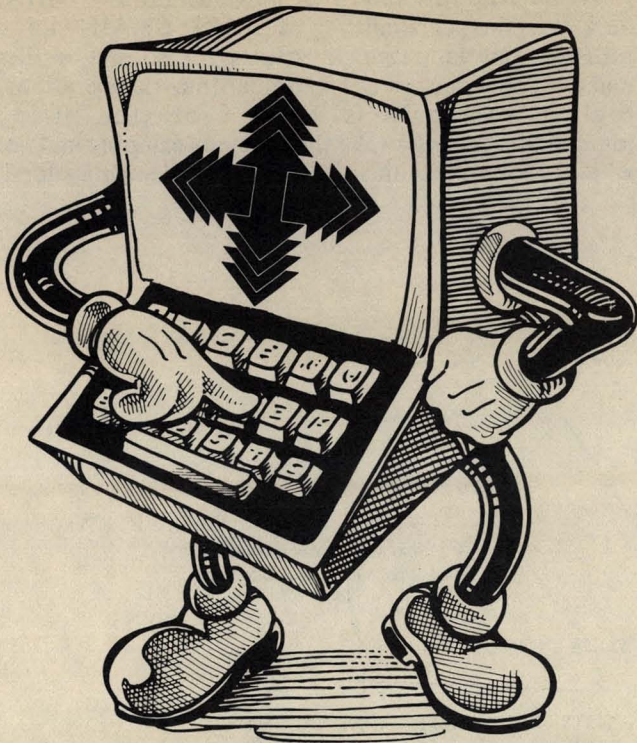
To wind up this very brief introduction to CHAIN, look at the capabilities of RMS CHAIN as a programming language. It enables you to handle files and data areas as well as perform arithmetic operations, logical comparisons, and character string manipulations. Let's take the previous example and see what it looks like with some CHAIN statements added:



Notice the use of program control blocks within program control blocks.

Concepts of RMS CHAIN—Simplified User's Guide is available as Document No. 50641. Another document you may be interested in is the RMS CHAIN Quick Reference Guide, Document No. 61143.

Automatic RMS?



Well, it's not quite all automatic, but you can learn how to make an almost automatic RMS startup from an application that is in use here at Datapoint. One section of the company has applied some nifty techniques to their RMS network to make startup for their workstations and terminals almost completely automatic!

They started by configuring with the ;AUTO option at configuration time. This allowed basic configuration for each node in the catalog called RMSAUTOSTART.networkname. They included the :W, :U, and other environments to be loaded at initialization time. After they entered the correct security passwords, the workstation came up and was downline-loaded with the proper configuration. The RMS Command Interpreter (CI) then looked for STARTUP/CHN or STARTUP/CMD and attempted to execute them. The command file, STARTUP/CMD, is provided with the latest release of RMS STARTUP/CHN is written and provided by the programmer.

These command or CHAIN files are what make this autostart capability so special. By modifying these files to contain other CHAIN files, you can start "automatic" execution of programs such as DATASHARE, batch processing, or regular RMS functions. (See the RMS CHAIN article in this issue.) Whatever you want to do can be started automatically using the RMS Autostart feature.

Let's take a look at an actual application. Say we want to run DATASHARE automatically. We would configure with the ;AUTO option and include the environment that contains all the files we need for execution. We'd take the STARTUP/CMD file and modify it to begin DATASHARE execution when the command file is executed. That's all we'd need to do. If we entered the correct passwords and the CI could find STARTUP/CMD, we'd automatically begin execution of DATASHARE on our workstation or processor.

RMS 1.6 Release

Are you ready for some more RMS? RMS 1.6 was released in September and included:

DATASHARE/DATABUS

Tabbed and partial I/O and AND, OR, NOT, and XOR logic are now part of RMS DATASHARE/DATABUS. Many of the new features from DOS DS6 1.2 are in RMS, including the data entry verbs COUNT, PACK, UNPACK, SCAN, and the WRITE list controls *LL and *PL.

BATCH JOB Facility

The Batch Job Facility (BJF) is now supported as an independent task. Some utilities were modified to operate as an independent tasks to enable you better flexibility. Why is this so good? When BJF runs as an independent task, it does so without tying up screen resources. This allows you to get more use out of your

hardware. (See SOURCE DATA issue 14 for an introduction to BJF.)

8600 Processor Support

CHARLOAD/CHAREEDIT and TAPEUTIL were modified to support the 8600. (See the article on it in this issue.) Also, the 8600 now gets serial printer support from the Multiport Communications Adapter (MPCA). These changes allow those of you with an 8600 to make more effective use of RMS.

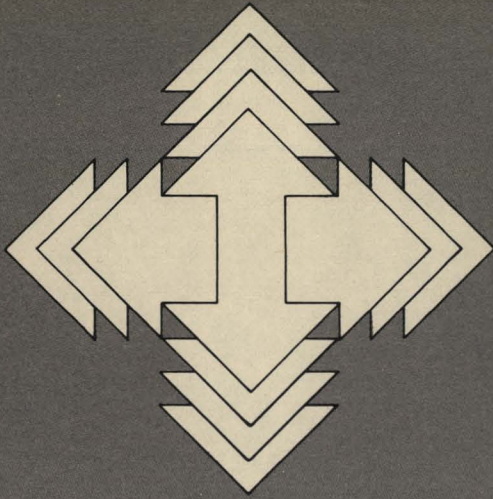
8800 Processor Support

A serial printer is now driven from the MPCA. This diversifies configuration options with the 8800.

Documentation

The **RMS System Installation and Configuration Guide**, Document Number 50624, has been released and should be of great help when installing and configuring the system.

For further information concerning the RMS 1.6 release, contact your local Datapoint office.



How to Keep RMS Up-To-Date

Since the announcement in November of 1980 and its initial release in January of 1981, we have continually enhanced and expanded the features of RMS. The product, as it stands today, is by no means static. We expect several more releases in the near future.

Because RMS is still a relatively new product, we get many questions about it. Many technical questions have been or will be addressed in SOURCE DATA. But we've noticed that many users are bothered by a question that keeps popping up: "Once I get RMS, how can I keep it up-to-date?"

To understand the answer, you must understand how we distribute RMS. When you place your initial order for RMS, you order the nucleus, utilities, and any other features or languages that you want. You order these on a media type that matches your hardware configuration. Software Services completes your order by copying the software on the media you ordered. The software on this RMS Master Pack is the current release of the Resource Management System. That's an important concept: RMS, as a system, has a version number. So, when you hear someone say "that came out in RMS 1.5" or "RMS 1.6 has been released," you can rest assured that they are talking about the release of the entire Resource Management System. Certainly, the features within RMS all bear their own version numbers, such as CAT 1.1, but all of the features rolled together represent a version of RMS itself.

Why should you care about all that? Well, RMS software maintenance is based on RMS versions. Between RMS maintenance releases, enhancements are made to existing features, new features are added, and prior errors are corrected, making each release significant to RMS.

When a maintenance release is nearing time for distribution, we send a mailgram to each RMS customer paying software maintenance. This mailgram briefly outlines the purpose of the release and indicates the action you should take to have your software upgraded. The RMS Maintenance Distribution group in Software Services maintains a current name and address for each RMS customer. Notify them at the following address if your contact name or address changes:

Software Services
RMS Maintenance Distribution
Datapoint Corporation
4319 Medical Drive
San Antonio, Texas 78229
(512) 699-7912

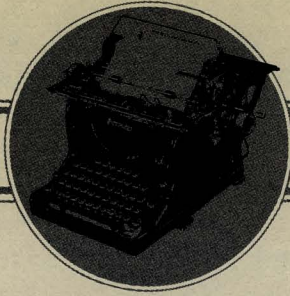
Typically, to get the next release of RMS, you will send your RMS Master Pack to Software Services. Yes, send your Master Pack back to San Antonio! The choice of freight vendor and the shipping charges are up to you and are taken care of at your own cost. We offer disk pack shipping cases specifically designed for RMS Maintenance in the **Supplies Catalog**, Document No. 80001.

No, your RMS system won't stop running while the Master Pack is gone, since you copied the software that you require from that media onto your active system as a part of your set-up procedure. Notice that makes a nice backup for you in case of some sort of data loss; a nice clean operating system is always available.

You must send in your RMS Maintenance Pack whenever you receive an announcement mailgram. The primary purpose of the release may involve features you don't have and don't want, but almost always changes are made that affect the nucleus and/or the utilities. You'll need this new code.

What happens to your Master Pack when it is in San Antonio? Onto your pack, the RMS Distribution Center personnel copies the latest version of all software for which you are currently paying the \$20/mo. software maintenance fee. No guarantee is made that anything you've added to the pack won't be overwritten. The purpose of the pack is to convey and retain the operating system software. Before the pack is returned to you, one copy of all documentation additions/updates made since the last release is added. Additional copies only can be ordered at this time. The mailgram will describe how to order them. The RMS Master Pack is returned to you at your expense as soon as possible. You are then responsible for upgrading your active system packs.

If you have questions about this process or would like further information about RMS, please contact your local Datapoint office.



OFFICE APPLICATIONS

Word Processing 1.4.1 Released

With the announcement of IEOS 1.4.1 come several very important enhancements for 1800, 3800, and potential 8600 users. The most important ones are:

DOS IEOS support for the 8600 processor
1800, 3800, and 8600 support for the new
30 cps serial printer

8600 Support

As you have heard, and possibly seen, the 8600 processor is an exceptional workstation for running IEOS. (See an article on it in this issue.) Though no official benchmarks have been done, the general feeling is that it has excellent operator response. It significantly reduces the pauses during and between functions. The 8600 will run DOS only under ARC.

9611 Printer

The recently released model 9611 30 cps printer is discussed in this issue. Now, you can put it to work with the 8600, the 8200, or the 1800. It is a serial printer, and it runs off the Internal Communications Adaptor (ICA) on the 1800 and 3800. If you are using the 1800 or 3800 for communications now, you are already using the ICA.

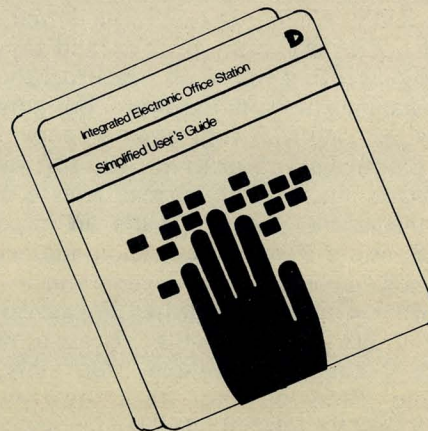
For a short time, those customers who use the 9611 printer on an 1800 with diskettes will be using DOS.G 2.6, which does not support other DOS printer functions. It will operate the printer only under Word Processing. Contact your Systems Engineer for more information.

One more feature will interest those IEOS customers who use their own translation tables. IEOS 1.4.1 allows translation access to octal characters 040 and 177. This access was restricted under 1.3.

The model codes for the new IEOS are:

9620	IEOS/WP for 3800/8600
9621	IEOS/WP for 1800
9623	IEOS/MS for 1800
9624	IEOS/MS for 3800/8600
20653	10MB system disk
20654	20MB system disk
20655	60MB system disk
20651	(5) SS-DD diskettes
20793	(2) DD-DD diskettes
50502	IEOS Simplified User's Guide 1.4
50547	IEOS Supervisor's Users Guide 1.4
50523	IEOS Message Services Addendum 1.4
60926	IEOS Product Specification 1.4

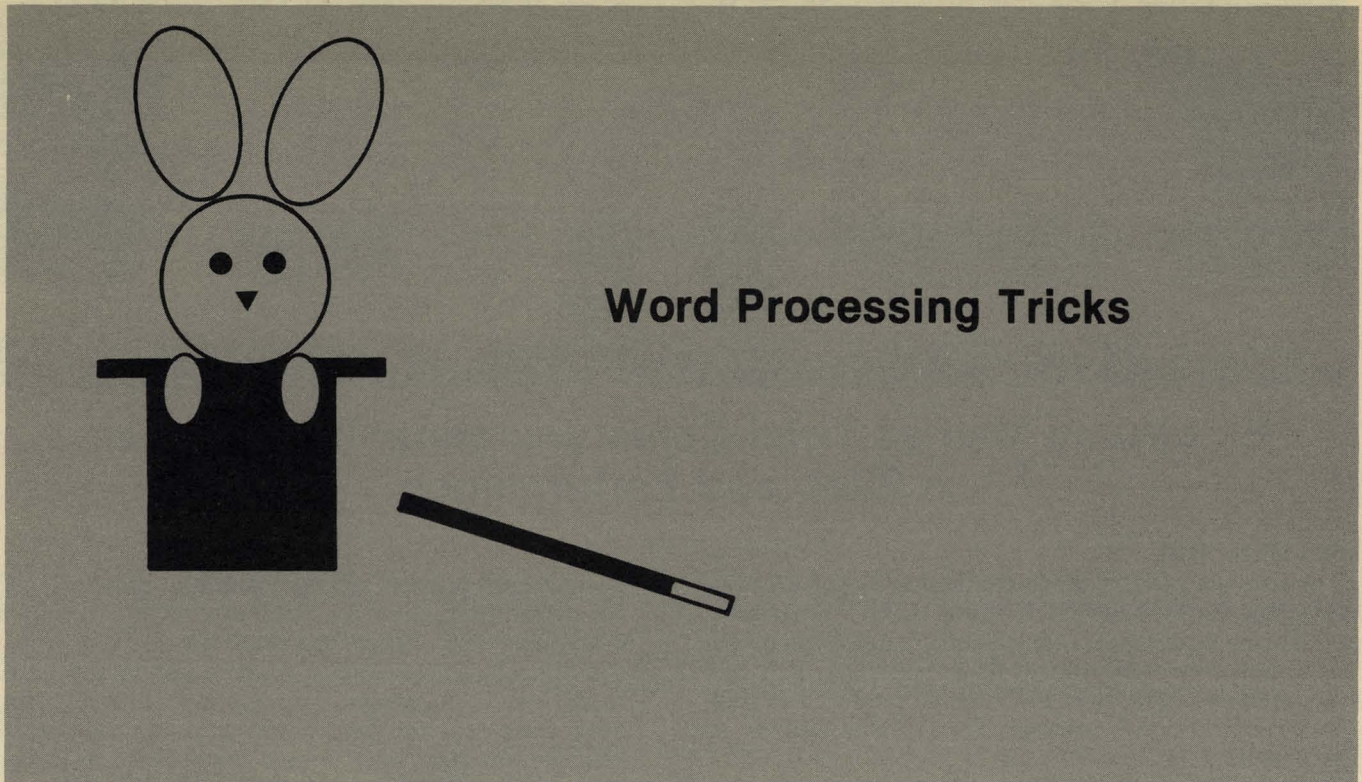
For further information, contact your local Data-point office.



IEOS Documentation Clarified

If you already have the **IEOS Simplified User's Guide** for version 1.3 and are adding Message Services, order only the addendum, Document No. 50523.

If your system is IEOS 1.4, WP only, the **IEOS Simplified User's Guide**, Document No. 50502, for version 1.3 is current and applicable. The **Supervisor's Users Guide**, Document No. 50547, is current for IEOS version 1.4, for both Word Processing and Message Services.



Word Processing Tricks

Word processing has opened up a whole new horizon in the office, and we often hear of new and exciting ways to use the powers of WP under IEOS. Here are three new ideas you might want to use.

A Quick Mass Mailing List

Here's a quick method to generate mass mailings if you don't need to retain a datafile and if the names and addresses will never be used again. First, create your form letter, including all the pertinent information for the first person. Return once after the last line, and END the document. Now, modify it and scroll to that last new line command you put in. Enter a new page command. Now, macro the document into itself (command % document name) and scroll to the first variable. Replace the information for the first person with the next person's name and address. Scroll to the next variable information and edit it.

Continue this procedure throughout the document. Place the cursor on the last new line command and again enter a new page command. Macro again. Repeat as many times as necessary. You will end up with one long document containing each letter, starting on a new page. If you want to select the "letters" needed, just print the pages you want. To make your task even easier, set up a function key for the new page command and one for the macro command. You might also use function keys for some scrolling.

Storing Autotyped Documents in a Library

Here is a technique for storing final copies of autotyped documents in a library. First, set up your document, control file, and data file as usual. When the time comes to Autotype, use the following syntax:

```
AUTO DOC document name USING control file ON TXTFILE  
or
```

```
AUTO DOC doc name USING control file ON TXTFILE=CUTn/WP
```

These commands will generate a file, found as <document>/TXT, that has each of your Autotyped documents complete as separate documents. Now, you can either create a document and place the cut into it or just copy the text file into your library, depending on the syntax you used. If you do want to print one of these copies at a future date, the only additional function you'll have to perform is to delete the "spaces" placed in the letters to retain their word processing format. You can define a function key to do that for you.

Sorting A Datafile For Specifics

Finally, here's a method of "sorting" a datafile in word processing when you only name one criteria, such as all persons living in Michigan. At the Master Menu, enter a command line using one of the following:

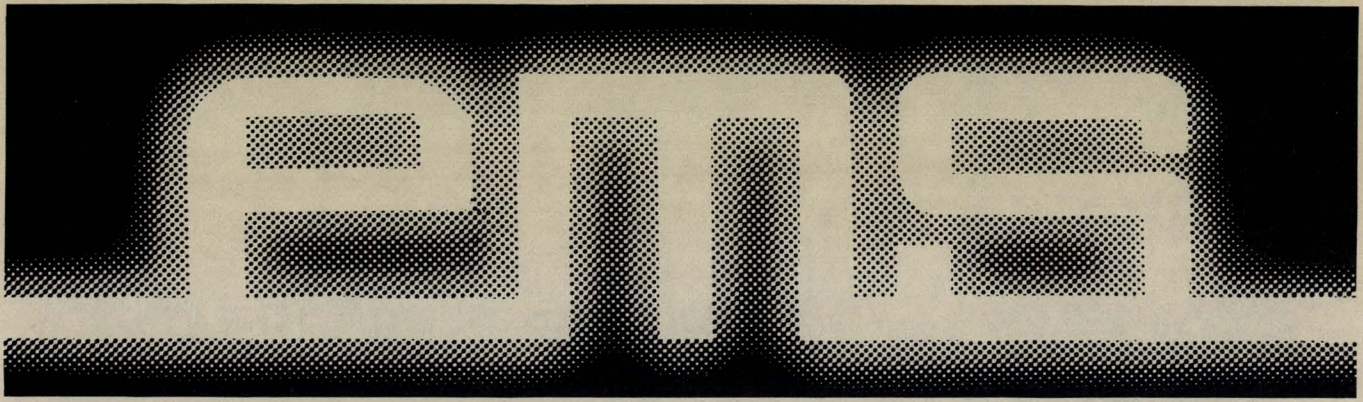
```
SEARCH DOC name of datafile ON TXTFILE=CUTn/WP LINE
```

or

```
SEARCH DOC name of datafile ON TXTFILE=new name LINE
```

If you are looking for all persons living in Michigan, as we are in this example, you would key in Michigan when you are asked for the key. It will then look for all "records" in the data file that contain the word Michigan and select those lines to put in a separate text file or cut that can be used as a "sorted" data file for a specific autotype mailing.

If you have a nifty idea for a use in WP, please send it to us. We'd love to hear from you!



Electronic Mail as Total Communication: Possibilities, a Pilot, and Performance

POSSIBILITIES

A sentiment says that electronic mail is for memos, text, and correspondence. It is not. EMS™ is the next generation of data communications. From Datapoint's view, Electronic Mail should send everything. If it can be stored on a disk, then EMS should send it. The goal is to get rid of the envelope. That is what Electronic Mail is about.

There are thousands of pages of text testifying to the virtues of Word Processing. What about Electronic Mail? First of all, how does it fit with other products?

1. It will work on the complete Datapoint product line, 1500 to ARC.
2. The word processing/data processing common file feature means it isn't a separate system - it is part of the whole computing/WP/data communications resource.
3. It is easy to use (AIM takes some credit there).
4. Messages (anything) can be sent via the local bus or over phone lines.
5. EMS takes care of itself.

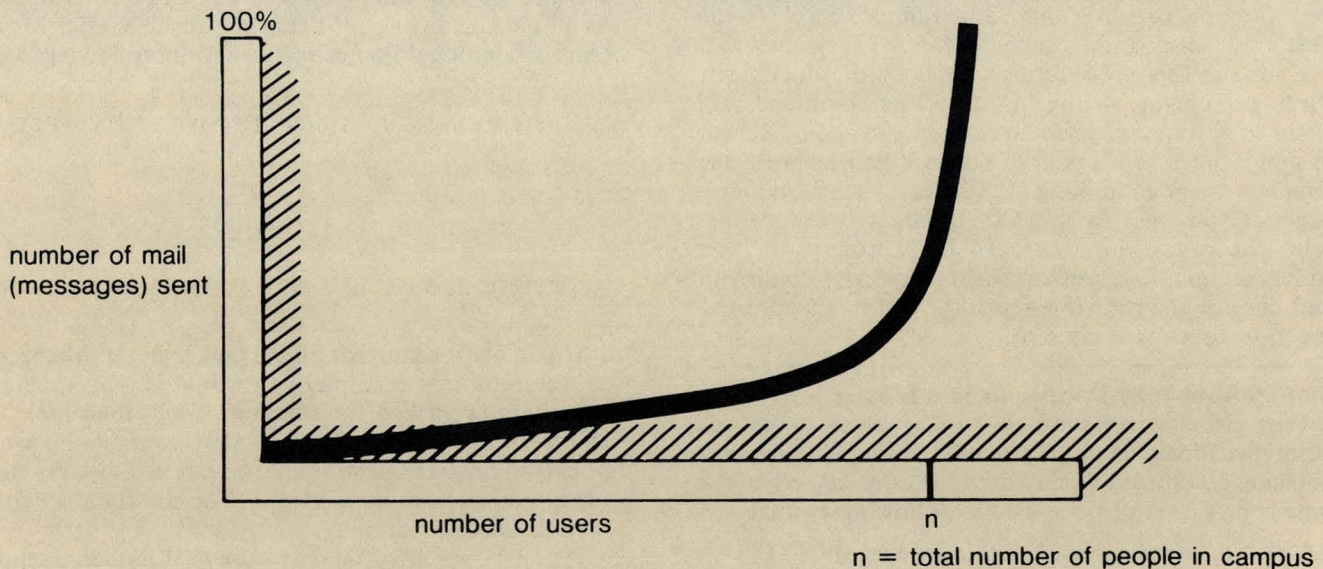
Datapoint began an ambitious EMS installation program in early 1981. The 40-plus buildings in cor-

porate headquarters in San Antonio posed a mail department's nightmare compounded by continual movement and office rearrangement. Since many departments already had WP and a substantial ARC-based data processing installation linked many departments for the company's accounting and order management function, the task was reduced to linking the buildings via coaxial cable, optical links, or microwaves. Approximately 1,000 persons were to be linked eventually.

The project proceeded quietly with various memos issued defining addressee lists and network budgeting. Training was supplied by one system MSR and the EMS documentation itself. Having a technically oriented employee base and heavy WP experience at the clerk and secretary functions was obviously some advantage.

As the network grew and buildings linked, the project still remained a quiet, almost invisible effort. The MSR visited offices to offer training and advice, but the number of potential users far exceeded any ability to seriously train each potential user.

At some point, people who sent mail noticed that the list of people who could receive electronic messages far



exceeded those who could not - and the EM system went from back room status to the hottest topic of interest.

- Guest Services could send the speaker schedules in 10% of the time required before.
- Secretaries could set up meetings and send agendas and follow up notes in minutes.
- Mail took on a new meaning distinct from envelopes.

But the surprising thing was the critical point at which the actual thing took off. Until there were enough people to talk to, no one even noticed it. Like having the only telephone in town, it was technically interesting but had limited use.

The curve shows that until everyone can get on the tube and mail things, EMS appears ineffective. That's the bad news: until the magic critical number of users is reached, nobody really cares about how wonderful and time-saving EMS can be. What they worry about are screen menus, keyboard layout, disk space, MSR availability, and cost. **HOWEVER**, the good news is that once the critical number hit on Datapoint's EMS nobody complained about anything: not the news, not the screen layout, not the documentation, nothing.

Because it worked, and it made life a lot easier. It became a vital part of the operation, not just a side benefit.

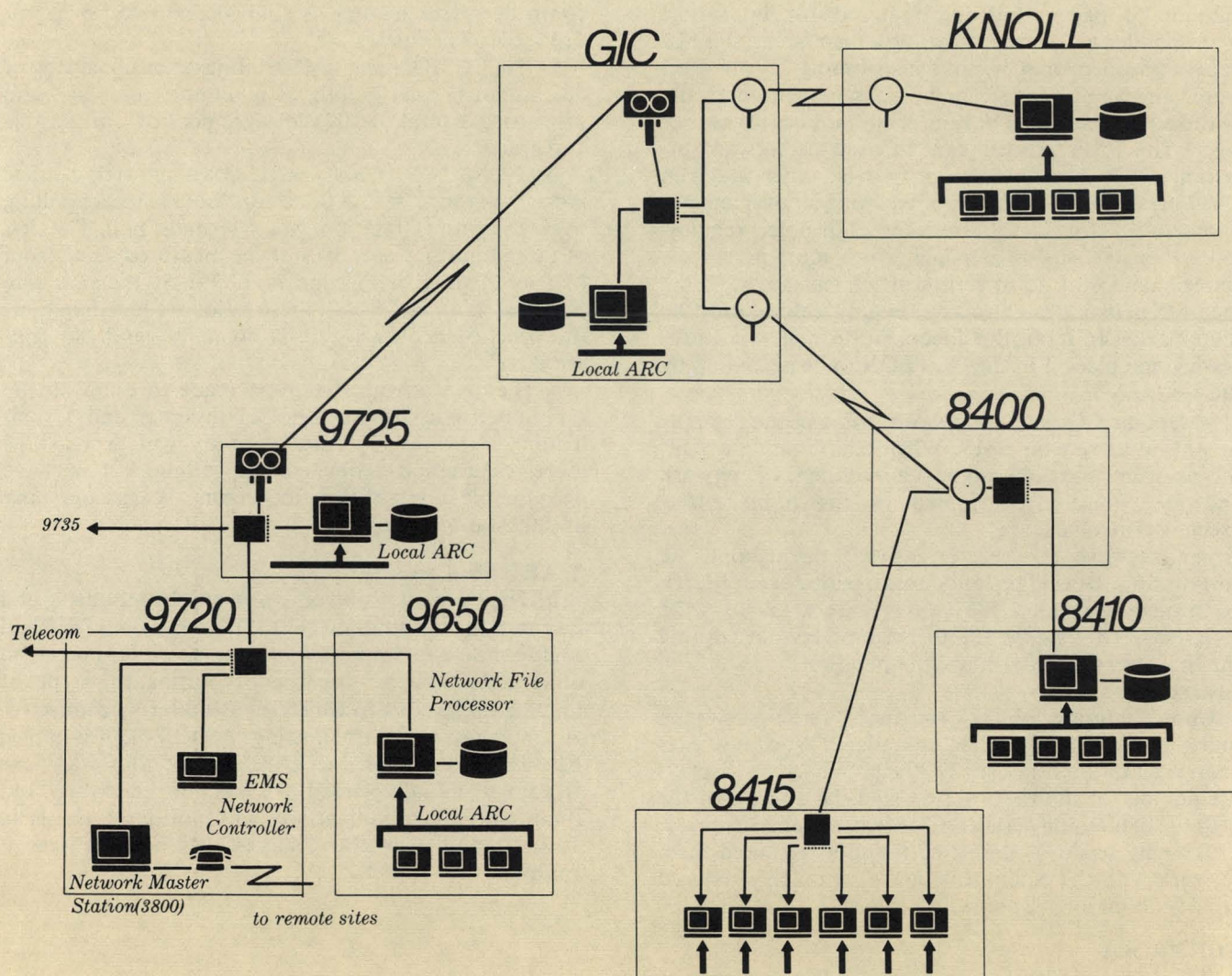
A PILOT

Within San Antonio, 140 local stations serving approximately 350 users are plugged into the network's Electronic Message Service, connected by nearly 7 miles of coax cable. LightLink™ transceivers join buildings up to a mile apart, and microwave transmissions cover an area up to 5 miles. Seventeen remote stations (in California, Dallas, Boston, elsewhere) are accessible over telephone lines.

At the core of this giant network are a 6600 Network Controller and a 3800 processor that functions as a master station. The network ARC is connected to 13 other ARC systems in various San Antonio buildings through double-RIMed file processors. User stations are 3800 series processors connected to the local ARC networks, which have a combined total storage capacity of nearly 11 billion bytes.

Problems Tackled

While plans were being made to implement the network within Datapoint, a survey was taken among the initial users to determine problems a corporate-wide



EMS network could resolve. Most respondents felt that much of the time spent in a meeting was wasted discussing information that the attendees should have had in advance. Another concern was that managers could make better decisions if the necessary information was presented on the screen in front of them rather than coming in over the telephone. Managers said they preferred to tackle a problem without someone on the other end of the line waiting for an immediate response. A third area of concern was to directly affect company business. Many respondents felt that using EMS would result in better communication, which would lead to faster installation of equipment and updated inventories.

Telephone Tag and Paper Shuffling Reduced

EMS has the potential to eliminate much of the "telephone tag" played in any sizable corporation: Joe calls Jane, who is on another call; Joe leaves a message for Jane to call him; Jane calls Joe; Joe is out; Joe calls Jane back, Jane is out; Jane returns Joe's call, and so on. With a few keystrokes into the EMS network, Joe can request a meeting with Jane and explain the topic to be discussed. Jane can respond upon seeing the message on her processor screen. This saves Joe and Jane the time required to dial and redial each other's extensions; plus, telephone interruptions are kept to a minimum.

The network at Datapoint headquarters reduces the amount of paper shuffling required for interoffice correspondence. Instead of typing a memo on a sheet of paper, photocopying it, and distributing it, the electronic message service sends the messages automatically to the addressees, who in turn print hard copies as they wish. The EMS process can be used to forward attachments, such as business proposals, which may run to 30 pages. A 30-page document with a cover memo, photocopied for distribution to 20 people, requires more than 600 sheets of paper which must be sorted, stapled, and stuffed into interoffice envelopes. Using the EMS network can also save time. It requires only the time it takes to input the document through word processing and place it in the OUTBOX to be picked up by the system.

Datapoint's Guest Services office is a prime example of why users rely on EMS. When coordinating a visit, the last-minute agenda can be put into the EMS network and electronically distributed to the home office executives involved.

The network is used extensively throughout the corporation. During the two-month period from March 16 through May 15, 2,533 messages were sent to 4,525 recipients. That's over 100 messages every day, during the first weeks the system was in operation.

Instruction

Upon entering IEOS, the user receives system bulletins and EMS provides an updated list of new sites connected to the network. For help, the screen displays the number of the EMS hotline and the address of the help file containing detailed EMS instructions.

Training sessions conducted for users required them to work with the equipment, and that quickly reduced anxiety about interaction with EMS.

THE PROOF

Occupying 41 different buildings in San Antonio, as well as almost 100 other locations across the country,

Datapoint Corporation is obviously a prime prospect for its own Electronic Message System (EMS). The pilot EMS system installed since January has provided the opportunity to do some interesting quantitative measurements on performance. Results and conclusions are detailed below.

1. Flood Testing

We had expected to reach a bottleneck in system capacity at both grade-of-service (poll cycles) and message through-put. We were pleasantly surprised to find the load levels at which we expected to flood made no measurable impact on performance.

a. Poll Cycles

With 56 users active, and all poll intervals set to one minute (i.e., one poll every 1.07 seconds), we measured message delivery times across the system. Traffic loading was set at 35,000 characters per hour. No delays in excess of four minutes were observed in the course of ten measurements. (Timings were taken by stop-watch, and the interval measured was between completion of the SEND function at the 3800 and appearance of the delivery log entry at the controller's printer.)

b. Traffic

With poll intervals set at 30 minutes for each of 56 active users, a four-page message (28 sectors) was delivered to each within 30 minutes of pickup by the controller. This loading is equivalent to 450 pages or 3136 sectors per hour.

CONCLUSION: An EMS configuration consisting of 500 stations, each polling at 30-minute intervals, and processing a total of 100 messages per hour, is feasible and practical.

ARGUMENT: Total traffic load at 100 average messages/hour = 1200 sectors/hour; total polling overhead with 500 stations = 3.6 seconds/poll. The first of these figures is only 38% of the measured value from b) above while the second is 29.7% of the poll rate obtained in a). Since both these ratios are less than half, the conclusion drawn here is not only valid but conservative.

NOTE: No attempt has been made to establish the optimum trade-off between poll interval and system loading. Obviously, system capacity will decrease as more resources are consumed in polling, but we have been unable to establish a flood point. We are pursuing a 1,000-station emulation.

2. ARC Bus Capacity

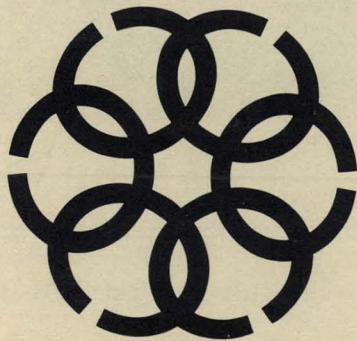
a. The Network Controller operates by mounting and dismounting volumes on ARC file processors. We had some initial reservations as to the possible impact on other ARC systems because of putting this type of loading on the FPs to which the EMS bus is connected. A simple test was the following: A DOS file was copied between two FPs on the EMS system. This was done five times: initially while EMS was down and then four times with 50 stations active, with poll intervals set to 1, 2, 10, and 30 minutes, successively. Results were as follows:

POLLING	TOTAL TIME ELAPSED
none	4:45
30 minutes	4:45
10 minutes	4:46
2 minutes	4:47
1 minute	4:47

In other words, the total degradation on a disk I/O bound job, imposed by an EMS controller polling at 50 mounts per minute, was less than 1%.

b. The ARCSTAT program (a diagnostic tool) was executed at the network master station during the attempted traffic-flood test. The largest observed data packet rate was only 40 per second, which is something like 3% of the theoretical maximum.

CONCLUSION: An EMS system does not impose any significant loading on ARC, either in terms of bus or file processor utilization. Under normal circumstances, it is quite practical to plan to execute normal data processing work-load on a bus which also services EMS.



ARC User's Survey

A new survey has been sent to the current ARC users. Please return yours in the envelope provided to help us solve your problems. If you have lost your envelope, please return it to:

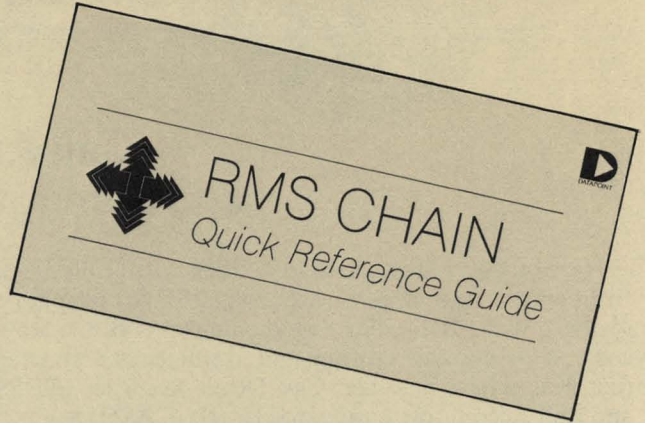
ARC User's Survey
 c/o Al Malinge
 9725 Datapoint Drive #K05
 San Antonio, Texas 78284
 (512) 699-5191

If you have lost your survey or didn't receive one and want to participate, please write to the same address for one.

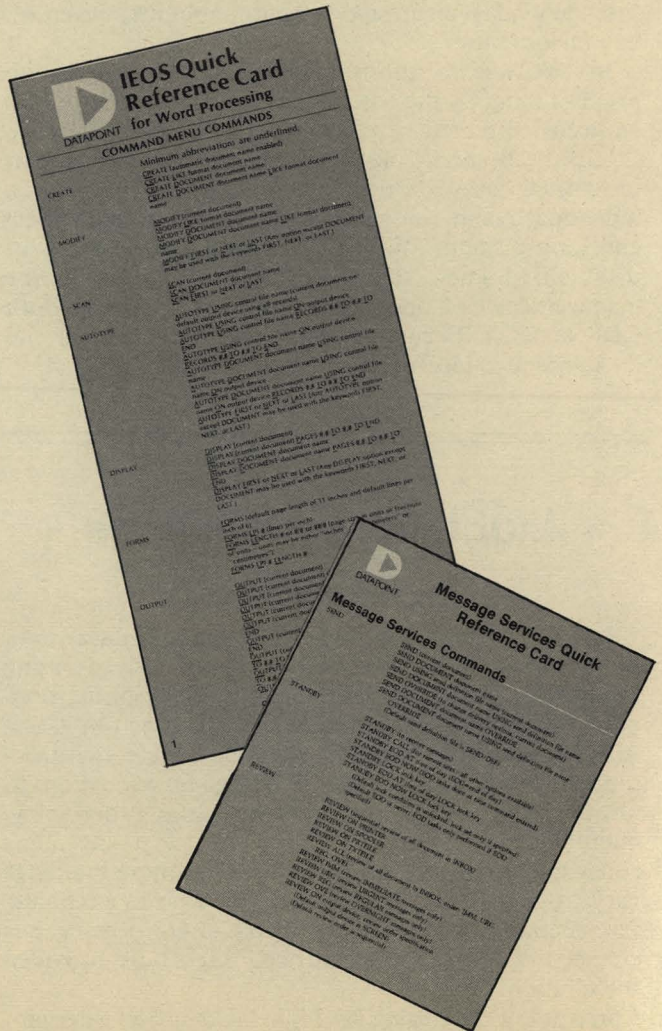
Thanks!

You choose the prize...

We'd like to hear from you! To keep our reader dialog alive, we need questions, comments from you. This issue, if you write to us, you can choose to receive a free



or set of



Don't delay; jot down your thoughts on the Reader Reply Form at the back of this issue.



OFFICE COMMUNICATIONS

Call Accounting and Management Systems

Have you ever wanted a way to track down calls made from your private branch exchange (PBX) or telephone system? Well, Datapoint has announced two new low-cost telephone call costing and management systems that make them possible: Call Detail Recorder (CDR) and Call Accounting System for Hotels (CASH).

CDR and CASH provide the user with an affordable means of recording details on telephone calls placed through the company's PBX or Key Telephone System, calculate call costs, assign charges to the caller, and provide management reports on call volumes, expenses, and facilities use.

In addition to those features, CDR requires no programming by the user. It has been designed to keep an accurate record of telephone call traffic and costs. CASH meets specific needs of the hotel industry, since it provides an easy means of identifying and charging an individual room for guest telephone calls, both local and long distance. With CASH, you can produce individualized guest charge reports in addition to the management and operations reports you expect. Both CDR and CASH can work local tariffs and other call data unique to individual countries into the call costs.

CDR and CASH operate on a Datapoint host processor connected by a standard interface to your existing PBX or Key Telephone System. You'll need a processor with keyboard and video screen, a communications adaptor, up to 60 megabytes of data storage, and a character printer for reports. Other Datapoint terminals, such as the 1800 and 8200, may be added to give you extra workstations.

For more information on CDR or CASH, call your local Datapoint representative.

Charges will be for this area code, exchange, and city

```
REVISE CHARGES
DIALED DESTINATION NUMBER 512699
DIALED DESTINATION NAME San Antonio, Tx
TAX RATE 00 05 (PERCENT)
LEVEL CODE 1 88 (Primary LDCS)
RATE CODE 1 100 (secondary MCI)
LEVEL CODE 2 89
RATE CODE 2 200
LEVEL CODE 3 9 (DDI)
RATE CODE 3 900

ARE YOU SURE Y (Y/N)

PRESS INT KEY TO TERMINATE
```

Access codes for preferred and alternate levels

Rate codes relate level codes to a specific billing rate

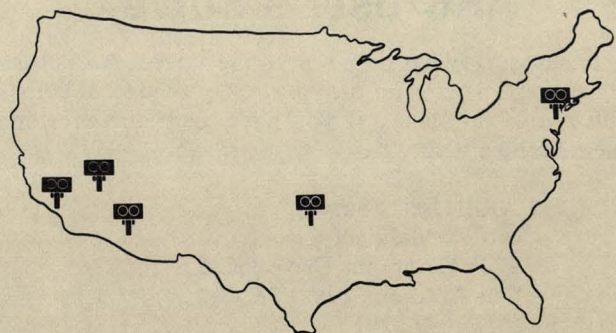
LightLink Installations Expand

Unique problems of re-establishing a data communications link are readily being solved using LightLink. The first use for this free space, non-coherent, near infrared transceiver, was at our home office in San Antonio. Our rapid corporate growth in separate buildings often required frequent relocations to nearby leased offices for services such as order entry, manufacturing resource planning, and accounts receivable/payable. The paths between these buildings vary from 1500 feet to 4200 feet. We needed a reliable, fast method to provide an ARC interprocessor bus connection between these offices. LightLink provided the solution.

Currently, we are using six LightLinks in San Antonio. Besides using them for the activities above, Datapoint makes use of this product by implementing it for the corporate EMS backbone, International order entry/inquiry, and two direct ARC nets between corporate

headquarters and the Research and Development management.

Additionally, units are installed and are providing service across the U.S.



The equipment has now proven itself as a reliable alternative to cable. User application stories are being prepared and will be available shortly.

New Products, Catalogs Available

Several new products were added to the Datapoint supplies product line, and the new software catalog is now available. Some of the new products are listed below.

Cables and Connector Kits

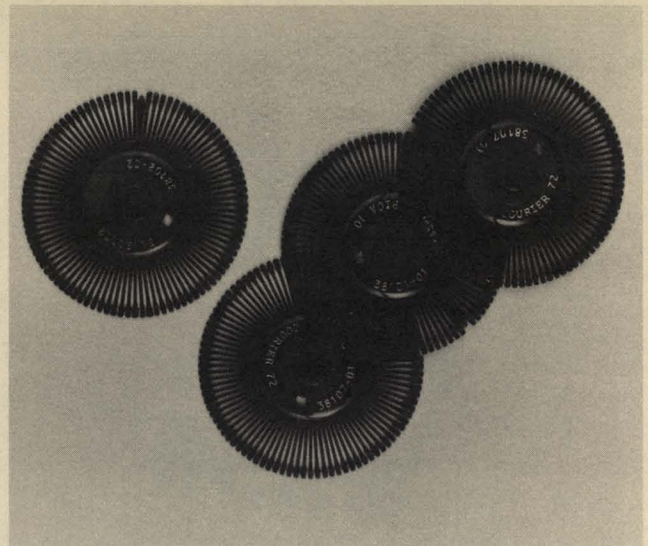
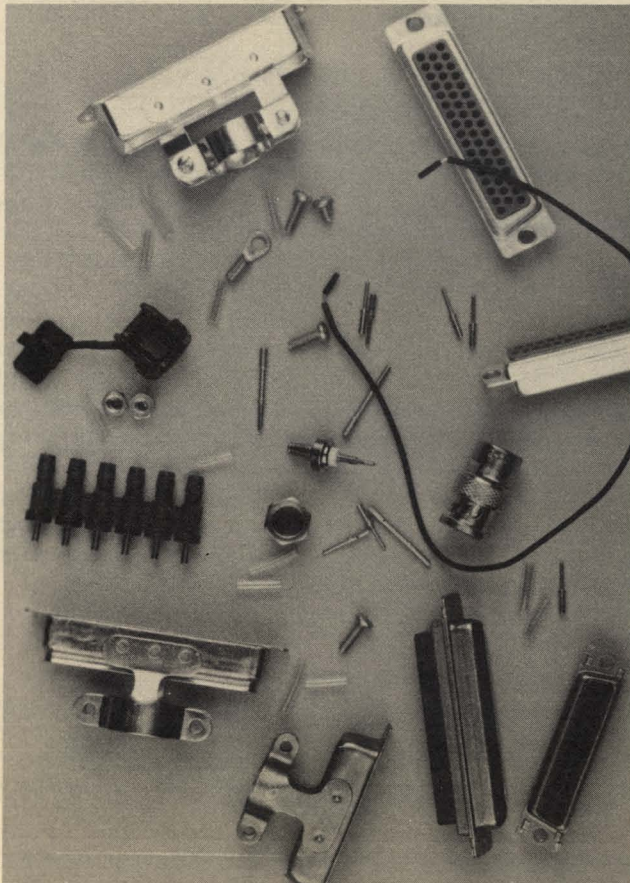
Fifteen cables and connector kits are available through the supplies order channels. The cable and connector kits not listed below must still be ordered through regular channels.

These cables and connector kits can be ordered through customer supplies:

Model

Code Description

3403	Cable from Multiport to Modem
3450	Kit from Modem to 3600
3451	Kit for Multiport to 3600
3452	Three Twisted Pair Cable
3453	Two Pair Cable
3454	Kit for Modem to 3600 and Printer
3455	Kit for Multiport to 3600 and Printer
3460	RG62 Coaxial Cable
3462	Kit for RG62 Coaxial Cable
3469	Kit for Multiport to Printer
9028	1500 to Asynchronous Modem
9038	1800 to Asynchronous Modem
9040	1800 to Synchronous Modem
9160	1500 to Synchronous Modem
9443	1500 to Printer



Print Wheels

Four new styles of plastic print wheels are being added. Seven styles are now available, as listed below:

Model

Code Description

80270	Courier 72
80271	Pica 10
80272	Elite 12
80434	Courier 10
80434	Prestige Elite Legal 12
80438	Courier Legal 10A
80439	Pica Legal 10A

Static Control Floor Mats

Datapoint is introducing two types of static control floor mats. The one for standing applications is of soft, comfortable material and comes in two sizes (3' by 4' and 4' by 8') and three colors (brown, gold, and green). The mat for sitting applications is made of a durable material that allows a casted chair to roll across it. This mat comes in two sizes (4' by 5' and 4' by 8') and is black. All mats are equipped with a ground cord.

ACD Accessories

The starset headphone and various accessories are available for use with the Automatic Call Distributor (ACD).

Model

Code Description

83902	Handset, plug-ended
83903	Headphone Kit
83904	Eyeglass Clip
83906	Acoustic Tube
83907	Kit, Six Flexible Ear Tips (one each, sizes 1-6)

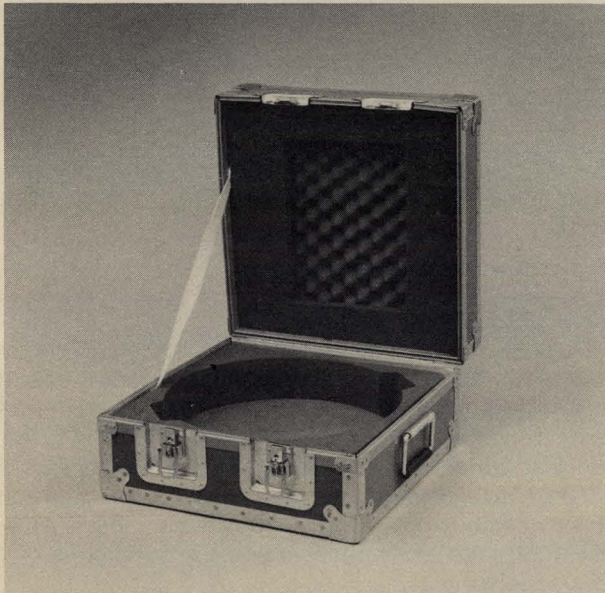
Library Cases

Two library cases, one for cassettes (80510) and one for diskettes (80511) are now available. The cassette case stores eight cassettes, while the diskette case stores ten diskettes.



Disk Pack Carrying Case

The disk pack carrying case is a lightweight, protective carrying case (80538) that can contain two disk cartridges or one disk pack.



Disk Pack Shipping Case

The rugged disk pack shipping case (80539) can contain two disk cartridges or one disk pack. It is built to withstand one hundred shipments by plane, rail, or truck.

Supplies for New Hardware

Supplies that are used on hardware that has been introduced in the past year have been added to the supplies catalog. These include the 8800 processor, the 1400 diskette drive, and the band printers.

Catalogs

The updated **Software Documentation, Supplies, and Price Schedule** (Document No. 60231) and the glossy **Software Catalog** (Document No. 60000) are now available from Software Services.

Both documents have undergone major revisions. The software Pink Sheets now include RMS, a new section for the 1500, and the Integrated Electronic

Office software (the Word Processing, Electronic Message, and Voice Communications Management Systems).

The new Software Catalog is arranged in the same order as are the Pink Sheets. If you want more information on an item in the Software Catalog, it has been arranged so that you can look in Appendix A and find just about any information. This appendix contains the current version, release date, model codes, media, and so forth, for the item you want to know about. Prices are also included in Appendix A.



Expanded Print Option for 160 CPS Printer

The 160 character per second (cps) matrix printer now has expanded print options, providing 42 type sizes and allowing the programmer to design and download custom character fonts. This option is an add-on for Datapoint's 9621 and 9622 matrix printers.

Character Control

You can determine the height of the characters by the line spacing value.

- Line spacing: 8, 6, 4, 3, 2, 1.25, 1, and .75 lines per inch.
- Characters per inch: 16.5, 10, 8.25, 5, 2.5, or 1.25 characters per inch.

If you use the 16.5 characters per inch (cpi) horizontal spacing value, you must specify the lines per inch (lpi) as 6 or 8.

Purchase Options

The 160 cps matrix printer is designed to provide low-cost dot matrix printing for dispersed business locations. The option's list price is \$200 for the 132-column format, bidirectional printer. With the option installed, maintenance for the Matrix Printer is an additional \$3 per month. Monthly lease prices are an additional \$10 for one year, \$8 for two years, and \$5 for three years. The rental price is an additional \$12. For more information concerning the 160 cps Matrix Printer options, Model Code 0061, see the product specification, Document No. 60793, or contact your local Datapoint office.





Printing Alternative

Have you wanted a less expensive printer? Well, you can get one from Datapoint now! The new low-cost 30 cps printer, the 9611, features letter-quality print, micro-processor control, cartridge ribbons, and interchangeable metal and plastic printwheels in a variety of fonts.

The new printer can be used as a local printer in either a stand-alone configuration or as part of Datapoint's Attached Resource Computer (ARC) local network system. The 9611 can also serve as a Datapoint terminal

printer when it is connected to a Datapoint 8200 video workstation. You can even have continuous forms feed if you include the optional Model 0087 Forms Tractor with your order.

Text is printed bidirectionally with configurable line widths, line spacing, form length, and print pitch. You can select from line widths of 132, 158, and 198 columns selected to match print fonts with 10, 12, or 15 characters per inch, respectively. The printer will accept forms in widths of up to 15 inches with the tractor feed and up to 16.5 inches without the mechanism.

The list price for the 9611 is \$3990, and installation is an additional \$165. Leasing is available.

Datapoint's First Vendor Financing Program!



Datapoint, for the first time, has arranged a cooperative program with two third-party financial institutions. The programs with Chase Commercial Leasing and Commercial Credit Corporation are now available to Datapoint customers nationwide.

Under the program, customers wishing to lease products may do so through their Datapoint Sales Representatives, who have lease application forms, rates, and requirements.

The highpoints of the programs are outlined below:

Vendor Financing

- Low Rates, with or without Investment Tax Credit
- Up to 7-year financing (limited)
- Fast turnaround
- Under Datapoint Credit Department Control

Purchase Option Conversions

The Datapoint Credit Department takes responsibility for all paperwork and all price quotes.

For further information on Vendor Financing, please contact Jim Eubank at (512) 699-5117. Diane Evans can give you more information on Purchase Option Conversions at (512) 699-7699.

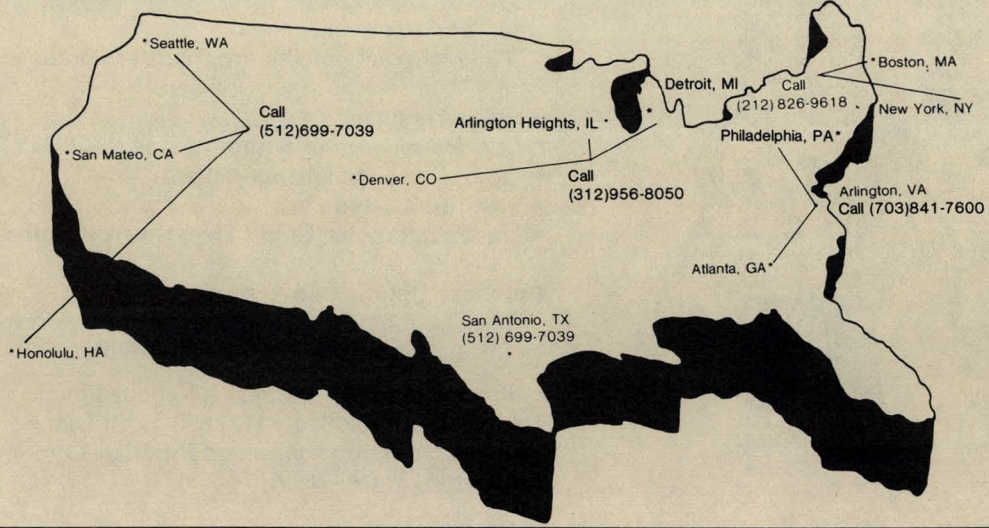
Customer Education November '81 through January '82

Below is the schedule for Customer Education for the next three months. The **Customer Education Course Catalog**, Document No. 60269, contains course descriptions, prerequisites, education center information and cost. Copies are available at your local Datapoint office. Enrollment for courses is handled by the regional education centers as indicated on the accompanying map. General questions about courses may be directed to the San Antonio Education Center.



San Antonio
Seattle
San Mateo
Detroit
Denver
Arlington Heights
Philadelphia
Atlanta
Arlington
Boston
New York

Course	Location										
	Starting Dates										
Introduction to Datapoint Programming	11/16 12/7 1/11	1/25	12/7 1/4 1/25				11/30		11/30	11/2 1/11	11/30 1/25
Disk Concepts and Operations	11/2 1/4 11/9 1/18 11/30 1/25 12/14		11/2 11/30 1/18				11/9 12/14 1/18			12/7	11/2 12/7 1/11
Disk Operating System	11/16 12/14 1/25										1/18
Resource Management System (RMS)	11/2 1/4 11/16 1/18 12/7 1/25		12/14			1/4				11/30	11/9
DATASHARE	11/2 12/14 11/16 1/18 11/30 1/25		1/11	11/16 1/11	12/7	11/2 1/18	12/7	1/25	11/16 12/14 1/25	1/4	11/2 11/16 1/4
Advanced DATASHARE	12/7 1/11					1/4	11/9		12/14		
Attached Resource Computer (ARC)	12/7 1/11		12/14			11/16 1/25					
Word Processing Concepts and Operation	11/2 12/14 11/9 1/18 11/16 1/25 11/30		11/16 12/7 1/4 1/25			11/2 11/30 1/25			11/9 1/4 1/18		11/16 11/30 1/4 1/25
Electronic Message System (EMS)	11/30 1/11										
Basic LDCS™	12/11 1/25										
Advanced LDCS	11/16 1/11										
Automatic Call Distributor (ACD)	12/14										



Customer Education Changes

Effective immediately, registrations for Customer Education classes in San Mateo, Los Angeles, and Seattle will be taken by Customer Education in San Antonio at (512) 699-7039. Please call San Antonio for information regarding classes in these areas or to register for any classes.

This is the first step in centralizing all Customer Education registration to the San Antonio offices. Soon, with the number mentioned above, you will be able to register in any classes across the country. The centralized registration system will be phasing in all facilities within the next few months. We'll keep you posted.

Introductory Seminars and Special Education

Datapoint's Customer Education has developed and successfully presented a new special two-day seminar. Designed for managers and supervisors, the course answers these questions:

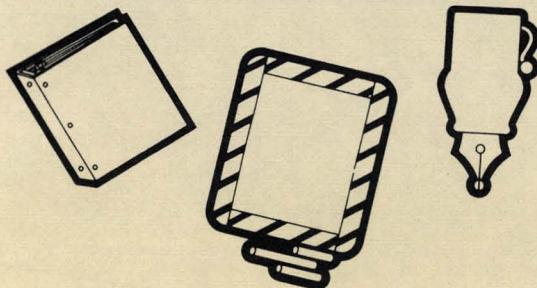
- What are computers?
- What do they do?
- How will they impact my department, my employees, my job?

Topics covered in the class include:

- Introduction to Data Processing
- Overview of Computer Systems
- Symbolic Language
- Languages and Their Uses Modes of Processing
- Attached Resource Computer

If you are interested in arranging for a special course like this, contact your local Datapoint office. Your Sales Representative will work with you and the Customer Education group to answer your seminar requirements.

In addition, Customer Education can tailor a class to your needs. Recent examples have been a one-week class on DATASHARE, Advanced DATASHARE, and ARC concepts, or another similar one with emphasis on security techniques. If you have special education requirements, discuss them with your Sales Rep.



Word Processing Course for IEOS 1.3



The **IEOS Audio Cassette Course**, a self-study package for learning word processing, has been updated to reflect IEOS version 1.3 word processing concepts. (Thus, it is valid for release 1.4 also but does not cover message services.)

The course is designed for people who want to learn to use word processing for day-to-day activities. It is intended for management or administrative/clerical staff and assumes no familiarity with either word processing concepts or computing processor use. (Typing ability will help.) At the end of the course, the "student" will:

- be familiar with the IEOS keyboard and its special function keys
- be able to create, modify, and print a document
- be able to perform several formatting and file management functions; and
- most importantly, know how to use the **IEOS Simplified User's Guide** for further learning and reference.

Each of the four audio cassette lessons is 20 to 30 minutes long. Each can be used independently so you are free to pursue the course at your convenience and review material as desired. One lesson (including exercises) can be accomplished in about an hour.

You may order the course package from Software Services. It is Document No. 60946 and includes audio cassettes, complete instruction materials, exercises, and some documentation. The **IEOS Simplified User's Guide** (Document No. 60931, newly revised for release 1.3) is required for use with the course and must be ordered separately.

Software Releases

Illustrated below is a Software Release Form. These forms are issued for every new release of a software product. They are sent to Datapoint branch offices in the **Software Operations Newsletter** they receive periodically. **SOURCE DATA** publishes a table of condensed information from releases. If you would like to see more detailed information on a particular product, contact your branch office to see the Release Form for that product. If they don't have it in hand at the moment, they can request a copy from Software Support in San Antonio for you.

DATAPOINT COMPUTER SYSTEMS DIVISION PROGRAM RELEASE FORM

NOTE: LICENSE REQUIRED

The software item documented on this form is the property of Datapoint Corporation and may be used or transferred only pursuant to the terms of a license agreement between Datapoint and the user.

SYMBOL/VER.REV: EM3276S 1.1

DESCRIPTION: SDLC 3276 Emulator

PURPOSE: D - New software package

RELEASE MEDIA: Cassette
Double Density Diskette

TOTAL SECTOR SIZE: 144 Sectors

SOFTWARE CANCELLED BY THIS RELEASE: None

EXECUTION SUPPORT:

Software: DOS.D 2.6
DOS.G 2.6
ARC 1.6

Hardware: 1800/3800

Processor: 60K

Minimum Size: 937X/938X/939X

Disk: Local

Printer: Integrated Communications Adapter

Other:

RELEASE ITEMS:	MODEL CODE	RELEASE
User's Guide:	50639	17 Pages
Program Media:	9851	1 DMF Cassette
Program Media:	9851	1 Double Density Diskette

DETAILED DESCRIPTION:

SDLC 3276 Emulator which operates in an IBM SNA environment.

PROGRAM FILES RELEASED:

EM3276S/CMD
EM3276S/RFM

Command file
Release form print file

RELEASED BY:

DATE:

CERTIFIED BY:

DATE:

APPROVED BY:

DATE:

Software Program Releases

<i>Name/Date</i>	<i>Description</i>	<i>Purpose</i>	<i>Model</i>	<i>Media*</i>
ARC 1.7 Released 4 Aug 81	Attached Resource Computer used to construct a dispersed multiprocessing system with the 1800/5500 6600 processors and at least 48K.	Adds new features Cancels ARC 1.6	9801 20464 50299	1 DMF Cassette 1 DDD 1 Diskette User's Guide
CHAREEDIT 2.1 Released 4 Aug 81	Editor for CHARSET/SYS font set definition file and KEYXLATE/SYS 1800/3800/8600 keyboard translate table. Minimum 48K memory.	Adds new features	20788 20789 40447 50604	1 DMF Cassette 1 Diskette 1 DDD User's Guide
DBCMPPLUS 3.2 Released 4 Aug 81	DATABUS compiler that runs on any Datapoint processor with the 5500 instruction set. Compatible with DBCMP version 2.1. At least 28K memory required.	Adds new features Cancels DBCMPPLUS 3.1	40331 20458 20459 50321	1 DDD 2 DMF Cassettes 1 Diskette User's Guide
DS6 1.2 Released 27 Jul 81	DATASHARE VI: high-level multi-user program to interpret DATABUS on 1170/1800/3800/5000/5500/6000/6600/8600 processors with at least 32K memory.	Adds new features Cancels DS6 1.1.1	9828 50536	4 Cassettes 2 Diskettes 1 DDD User's Guide
DOS.D 2.7 Released 17 Aug 81	Disk Operating System for 1800, 5500, 6600, 8600 processors, the 9320/937X disk drives, and 9390, and the 9350. Requires at least 48K memory.	Adds new features Cancels DOS.D 2.6, DOS.D 2.6.1, DOS.D 2.6.2	20581 40427 50432	6 DMF Cassettes 2 DDDs User's Guide
DSKGEN18 1.1 Released 17 Aug 81	DOS.D 1800 utility that allows generation of DOS.G diskettes on a single drive diskette controller.	New software	20820 40465 50642	1 DMF Cassette 1 DDD User's Guide
EM3270 1.3 Released 20 Jul 81	Software support for the 1500 and 3670 Display Units to emulate IBM 3270 Display Unit cluster. Used with 1500 with single or double diskette. At with 32K memory required.	Corrects problems Cancels EM3270 1.2	9815 20681 40420 20682 50486	1 DOS.H Diskette 1 DOS.C Diskette 1 DOS.G Diskette 1 DMF Cassette User's Guide
EMS3276S 1.1 Released 22 Jul 81	SDLC 3276 Emulator that operates in an IBM SNA environment.	New software	9851 50639	1 DMF Cassette 1 DDD User's Guide
EMGRS15 1.1 Released 21 Jul 81	Program that emulates the Honeywell G-115 remote computer terminal. uses 1500 processor with at least 32K memory.	New software	20697 20793 40463 50640	1 SS/SD Diskette 1 DS/DD Diskette EMGRS15 1.1 User's Guide

**Media Charge — \$15.00 for one cassette, diskette, or double density diskette, \$125 for 2.5 MB disk, \$180 for 10 MB disk, \$385 for 25MB disk, \$505 for 60MB disk.*

<i>Name/Date</i>	<i>Description</i>	<i>Purpose</i>	<i>Model</i>	<i>Media*</i>
IEOS/MS 1.4.1 Released 26 Aug 81	Product feature enhancement for the 1800/3800/8600 processors	Cancels IEOS/MS 1.2.2	9823 20651 20793 20653 20654 20655 50502 50547 50523	IEOS/MS (1800/ 3800/8600) 5 DDD (1800) 2 Double-Sided DDD's (1800) 10 MB Disk (3800/8600) 25 MB Disk (3800/8600) 60 MB Disk (3800/8600) Simplified User's Guide Supervisor's User's Guide Message Services Addendum
IEOS/WP 1.4.1 Released 26 Aug 81	Product feature enhancement for the 1800, 3800, and 8600 processors.	Cancels IEOS/WP 1.3.2	9821 20651 20793 9820 20653 20654 20655 50502 50547	IEOS/WP (1800) 4 DDD (1800) 2 Double-Sided DDD (1800) IEOS/WP (3800/8600) 10 MB Disk (3800/8600) 25 MB Disk (3800/8600) 60 MB Disk (3800/8600) Simplified User's Guide Supervisor's User's Guide
INFOSWITCH/ SHARE 5.1.2 Released 5 Aug 81	INFOSWITCH® /SHARE™ V Host and Micro	Corrects problems Adds new features Cancels INFOSWITCH/ SHARE 5.1.1	9846 20652 20653 20654 20655 50618 61051 50619	SHARE 5.1.2 2.5 MB Disk 10 MB Disk 25 MB Disk 60 MB Disk User's Guide Quick Reference Guide Cartridge Tape Loader User's Guide
MLCI 2.1 Released 18 Aug 81	A multilink communications handler using channel adapter to allow DATABUS programs to communicate with application processor. Uses 1170/5000/5500/6000/6600 processors with at least 48K memory.	Adds new features Cancels MLCI 1.1	9810 50366	1 DMF Cassette User's Guide
SHARE 4.2.1 Released 5 Aug 81	INFOSWITCH/SHARE IV Host	Corrects problems Adds new features Cancels SHARE 4.1.4	20672 20673 20676 20678 50476 60899	2.5 MB Disk 10 MB Disk 25 MB Disk 60 MB Disk User's Guide Quick Reference Guide

*Media Charge — \$15.00 for one cassette, diskette, or double density diskette, \$125 for 2.5 MB disk, \$180 for 10 MB disk, \$385 for 25MB disk, \$505 for 60MB disk.

SOURCE DATA Advertising

The advertising for software listed below is presented without verification or review of any kind by Datapoint Corporation. Datapoint Corporation makes no

representation concerning the content of these ads or the quality of any product, software, or service offered. Datapoint Corporation reserves the right to reject any ad at its sole discretion.

DPT-SCREEN

DPTPLUS, Inc., P.O. Box 917, Wichita, Kansas 67201 316/686-5879

Application Software That Works!

Flexible and thoroughly documented. Accounting applications, distribution, production management and more. All DATABUS/DATASHARE. Cross license inquiries welcome. WOLF DATA SERVICES, INC. 9 East 10th, Holland, MI 49423 (616) 396-3006.

DSDOC—DS Documentor and word processor. Access by page; word wraparound, pickup, forward and backward scrolling, etc. DBC \$150; Source, \$300. Software Services, Inc. of Arlington, 3513 N. Powhatan St., Arlington, VA 22213

DATABUS CODING FORMS

10 PADS-500 SHT.\$22.00 NY - Add Sales Tax
100 PADS\$200.00 Add 5% For Shipping
and Handling

Quotation for larger orders
available on request.

C.O.Q.W. 612 Wall St. Station NY, NY 10005

CRAM 22 REM DOS MASTER FOR 2200

ATTN: Reps and Support People

- Install at Home for 24 Hr. Support

LGO Cassette \$500
TOTAL SYSTEM \$5000



CALL (313) 644-8672

Datapoint OEM has immediate need for a proven Pharmaceutical Hospital Inventory & Records Management System. Must have user documentation available. Call or write: Compu-Net Services, Inc., Two Crossroads of Commerce, Suite 225, Rolling Meadows, IL 60008 (312) 577-9494

Technical Systems people experienced in applications programming. Datapoint Hardware/Software. Join a dynamic OEM organization with professional staff. Compu-Net Services, Inc., Two Crossroads of Commerce, Suite 225, Rolling Meadows, IL 60008 (312) 577-9494

RMS SOFTWARE

RMS Business Systems
Software
available from:
CUSTOM COMPUTING, INC.
P.O. BOX 1374
KILGORE, TEXAS 75662
214-984-0639

DATAPOINT® Accountant II

General Accounting Packages

1550 — DATASHARE — ARC

- Payroll
- General Ledger
- Fixed Assets
- Accounts Payable
- Accounts Receivable
- Inventory
- CPA Time Accounting
- Legal Time Accounting
- Mailing Lists

Proven Accountant II Software — Nationwide References



CCI Software

102 E. Main St., Suite 509 • Urbana, IL 61801 • (217) 328-0030

Allocate Your DATASHARE costs!

RCAS records data & produces reports

- for:
- operator usage
 - port usage
 - cost by cost center/job/task and system for usage of
 - processor • printer
 - disk storage

For information, write or call:
Technology Management Corp., 2121
Eisenhower Ave., Alexandria, Va. 22314
(703) 838-5800

High Technology Automation, Inc.
P.O. Box 1824 Richardson, TX 75080
(214) 353-4143

- *Hardware planning, configuration*
- *Software development*
- *Datapoint consultation*
- *Datapoint-to-IBM communication*

DPT-EDIT

- complete DATASHARE® text file editor
- duplicates and surpasses Datapoint's® DOS EDIT commands
- field proven for over two years
- hundreds of users

To request a DPT-EDIT spec sheet -- write or call

DPTPLUS, Inc.
P.O. Box 917, Wichita, KS 67201
316/686-5879

When You Send In Camera-Ready Art . . .

make sure that you use names trademarked by Datapoint correctly. All references to DATASHARE and DATABUS should be set in upper-case letters. If you have questions concerning the trademarking of a Datapoint product, call before you send! Get in touch with the editor, Karrie Reagan, at (512) 699-7059. Thanks!

DOS ON A TERMINAL!

REMOTE gives a user access to all DOS facilities in a remote location from the computing system using an 8200 terminal connected by switched, leased, or local attachment to an MPA. DATANET SYSTEMS, LTD., Box 455, Wellington, New Zealand 64-4-725266.

VENDATA, INC.

Industry leader in communications protocol converters with maximum support in your sophisticated network(s). All major high-level protocols supported. Increase your network throughput! Custom requirements our specialty. VENDATA, INC. 6146 N.W. 11th St., Sunrise, FL 33313 (305) 584-6677

PRODUCTIVITY AID

Computer Assisted Programming

Program Generator For:

FILE DESCRIPTIONS

I/O INCLUDES

FILE MAINTENANCE PROGRAMS

REPORT PROGRAMS

STANDARD PROGRAMS

RUNS UNDER DOS OR RMS

Call or Write: Custom Computing, Inc.

P.O. Box 1374

Kilgore, Texas 75662

214-984-0639

Professional Software — Performance and Reliability
from

The Innovators™

(with an installed user base of more than 250 clients)

Developers of INNOPAK™ for
computer aided design and development,
Inno-Print™ for screen print applications
and SORT/TS, a sort for DATABUS® /DATASHARE®

TO ORDER:

Call or write The Innovators, Inc.
3408-I West Wendover Avenue
Greensboro, North Carolina 27407
(919) 288-3961

"Client Accounting Plus" software for Datapoint 1800 now available. Ideal for client write-up work or user in-house processing. Includes A/C Rec & A/C Pay application, post payroll, as well as G/L and F/S. \$3,000.00 License. For info: Donald S. Case, CPA, P.O. Box 1099, Okanogan, WA 98840



FOX & FOX COMPUTER SERVICES

FOX & FOX COMPUTER SERVICES wishes to announce the availability of S-CHAIN. If you have a DOS function to perform repetitively on a group of this DATABUS utility will instantly create a chain, and upon inspection and approval of the operator, execute it. **Price: \$35.00**

Write Fox & Fox, P.O. Box 9193, Berkeley, California 94709. Phone (415) 548-0880.

COMPARE! Mainframe features at mini price. If you are looking for a G/L system, you owe it to yourself to look at ABACAS. Write or call: Sakom Enterprises, 615 Standish Road, Teaneck, NJ 07666; (201) 836-4338

SOURCE DATA Advertising Form

Ads for publication in issue number 16 - December/January 1982 must be received by December 5.

Classified ad space is 1 inch high by 2 1/4 inches wide - one block. The rate is \$44 for your ad to appear in one issue of SOURCE DATA. Use the space below to type the exact text for your ad. (Note the maximum number of characters is approximately 300 which includes spaces, punctuation, etc.)

Alternatively, you may supply camera-ready copy for a display ad of multiple blocks up to a maximum of 6 blocks. The rate is \$44 per block.

Please supply the information below. Payment must accompany ad. Send to address shown on reverse.

Classified ad text:

Classified as above: \$44 Display: No. blocks _____ Payment: \$44/block \$ _____

I agree to indemnify Datapoint against liability arising from this ad and that Datapoint's liability for any matter connected with this ad shall not exceed \$44.

Your signature _____

Name _____ Company _____

Address _____ City _____

State _____ Zip _____ Phone _____

SOURCE DATA Reader Reply Form

This is your space to send us questions, comments, criticisms, ideas, anecdotes, address corrections. Send to the address shown on reverse.

Your choice of free literature — see page 19



D
DATAPoint

SOURCE DATA #T41
9725 Datapoint Drive
San Antonio, Texas 78284



AUTOMATED DATA SYSTEMS
SCHNAITMAN CHARLES
RD 2, BUSHKILL DR.
EASTON PA 18042