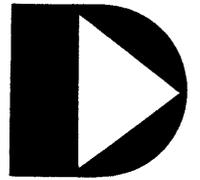


DATAPOINT CORPORATION SOFTWARE CATALOG



The text in this catalog was entered, edited and typeset using
a Datapoint 2200 with the SCRIBE text processing program
and a phototypesetter.

February, 1975

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HOW TO USE THIS CATALOG

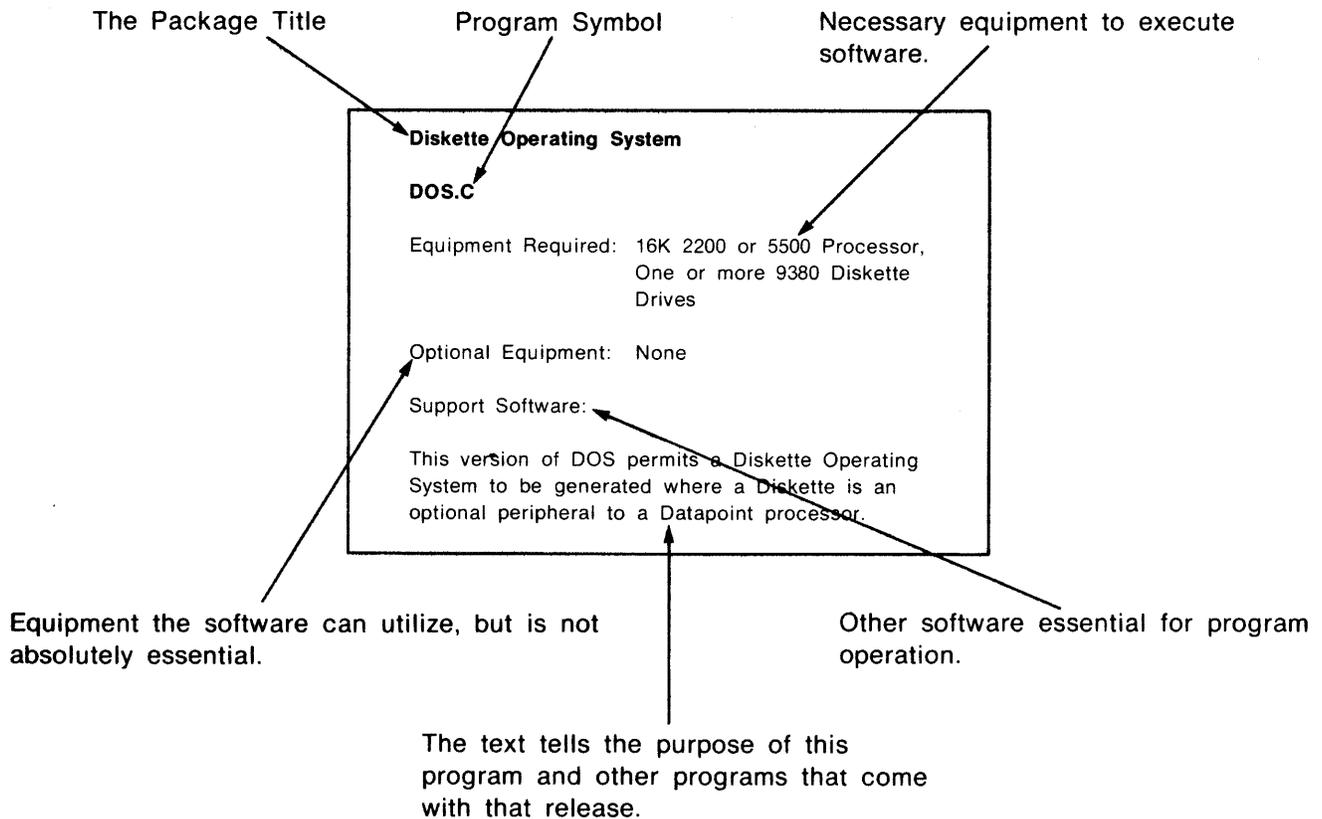
This catalog provides the reader a means of quickly reviewing the capabilities of Datapoint software. Both overviews and specific details are offered allowing extensive system planning. The reader is encouraged to order the detailed Users Guides for programs of interest.

Before ordering or deciding on which software to use, a good plan would be to familiarize yourself with the general sections

and then order by numbers from the detailed schedule. Note that the schedule reproduced in the back of this catalog is not necessarily the most current. This catalog is updated every six months while the schedule is updated every two months. These schedules are available from your nearest Sales Office.

Questions on software should be directed to the nearest Datapoint Sales Office.

FORMAT PRESENTATION



GLOSSARY

Many words have become part of the Datapoint software (and hardware) vocabulary. These words appear throughout this catalog as well as other descriptive literature. This glossary also includes general descriptions of common catalog numbers.

PRINTERS:

- Local - The term for a variety of impact-printers that connect directly to the Datapoint processor. These printers range from 30 to 660 chars/second and appear identical, except for speed, to Datapoint software.
- Servo - The Model Code 9250 Servo impact printer contains many additional features not common to other Datapoint printers.
- Remote - Many programs permit serial data printers to be operated through a Model Code 9400 Communications Adaptor. These serial printers include teletypes, some thermal printers and others requiring serial asynchronous data.

DISKS

- Mass Storage Disk - The Model Code 9370 Disk contains up to 25 million characters of data on a removable pack.
- Cartridge Disk - The Model Code 9350 uses a removable cartridge containing up to 2.4 million characters of data.
- Diskette - The Model Code 9381 Diskette with 256,000 characters per removable diskette.

COMMUNICATIONS

- 9400 - A serial data asynchronous communications adaptor.
- 9401 - Same as 9400 but with internal 300 Baud Modem.
- 9402 - Same as 9400 but with internal 1200 Baud Modem.
- 9404 - A serial data synchronous communications adaptor.
- 9420 - A parallel data interface.

MEMORY SIZE

The machine memory size required is expressed in multiples of 1024 bytes using the K suffix (K = 1024).

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SECTION 1

THE IMPORTANCE OF SOFTWARE

In the selection of data processing equipment the availability of software plays an equal role with hardware selection.

Businessmen familiar with the design and implementation of data processing systems are quick to explain that the most sophisticated, state-of-the-art computer is practically useless unless it's supplied with a comprehensive library of programs that allow a productive system to be created quickly.

The more software that is offered by a computer vendor, the greater the offset to costs of development. Costs that stem from two areas: the cost of a computer that's not producing desired results; and the cost of people developing the application program.

To meet business demands for productive systems, Datapoint offers a wide range of software designed specifically to aid a user in making his system productive as soon as possible.

This range of software covers the programming basics such as assemblers and editors to the powerful, easy-to-program DATASHARE Business Multi-Programming System. The user can plan on his own programmers concentrating on solving application needs and not having to construct the fundamental operating systems of high-level languages - the foundation of any business data processing system.

What Software Will Be Needed?

When a potential user starts to survey Datapoint software he might ask, "I'm going to do some data entry with a good bit of local processing. What do you have?" or, "We're going to need a multi-terminal system with off-line communications capability. What's your offering?"

The answers are varied. There are probably half a dozen approaches to each application and the user will choose an appropriate solution based on examination of immediate problems, long range plans and the experience of his staff.

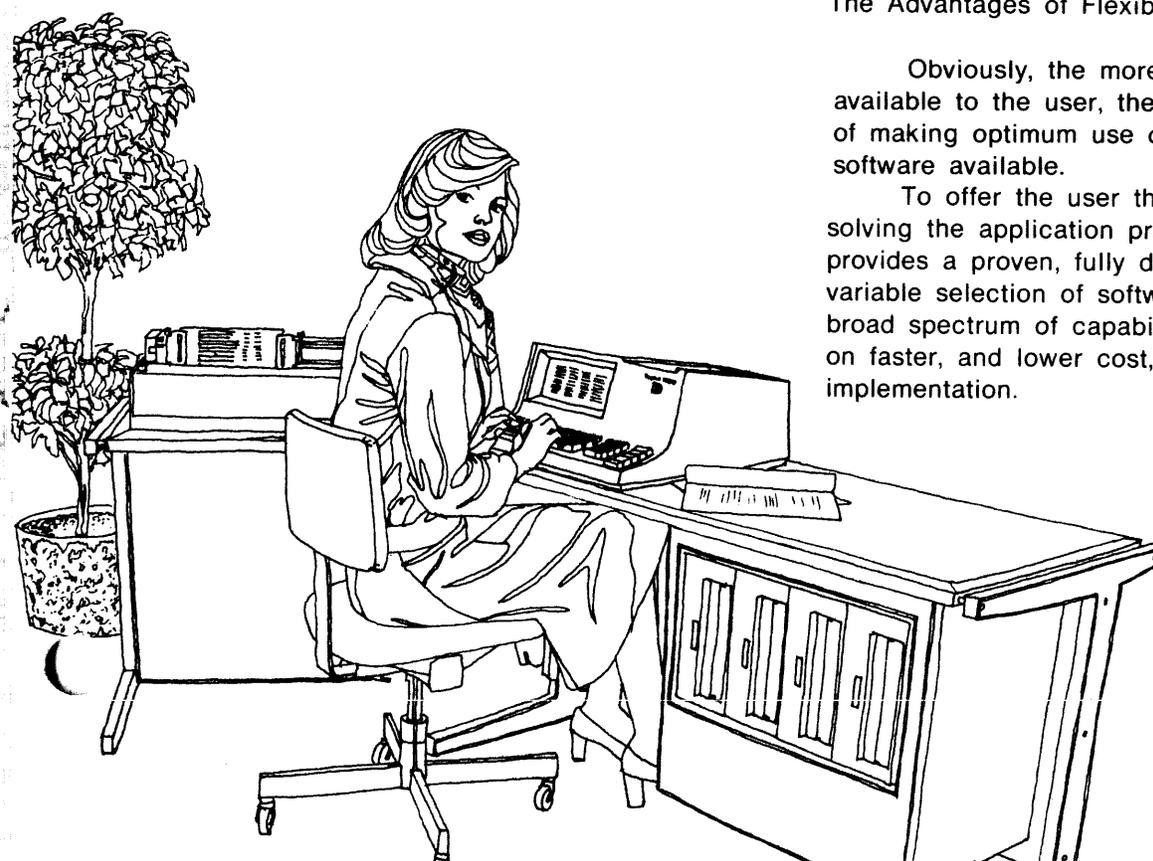
For example, the data entry user could choose from DATABUS or DATAFORM to build a Data Entry system. DATABUS offers more processing power but DATAFORM has advantages in much faster forms creation. So part of his decision will be based on how much processing will be done on the entered data and the number of forms involved.

The user with the multi-terminal application would apply DATASHARE and select from a wide variety of communications packages. He might elect to do some batched-mode processing during off-hours with DATABUS, RPGII or BASIC depending on what best suits his criteria.

The Advantages of Flexibility

Obviously, the more alternatives available to the user, the better his chances of making optimum use of the equipment/software available.

To offer the user the most flexibility in solving the application problem, Datapoint provides a proven, fully documented and variable selection of software. By use of this broad spectrum of capability a user can plan on faster, and lower cost, system implementation.



SECTION 2

GUIDE TO SELECTION OF SOFTWARE

Many software packages find usage in a wide variety of tasks and it is difficult, as well as constraining, to suggest a firm set of software for each application.

However, to help a new or prospective user obtain a feeling for the uses of Datapoint software the following guide will be helpful.

Applications in Datapoint Dispersed Data Processing may be divided into 4 areas; 1) Intelligent Data Entry 2) Multi-Processing System (DATASHARE) 3) Business Languages and 4) Communications Software. These 4 areas are the key to Datapoint's leadership in Dispersed Data Processing.

INTELLIGENT DATA ENTRY

The concept of capturing data at a remote location, creating a file storage

system and subsequently transmitting it to a central site involves many programming tools.

Either DATAFORM or DATABUS may be used for data entry applications. DATAFORM contains a fast, simple-to-use form generation and powerful input edit facilities while DATABUS offers more processing capability. For local processing of the data, the DATABUS language may be used to easily process or reformat the data. For communications, the DATAPOLL communications package or one of the communication emulators can be used.

For off-hours operations, depending on the processor used, the user may elect to run further processing tasks by selecting from a variety of languages. RPG, BASIC, and DATABUS may be used.

If you're planning on implementing a data entry system, the following areas will be of interest:

OPERATING SYSTEMS

Diskette Operating System

Cassette Operating System

PROGRAMMING LANGUAGES

DATAFORM

DATABUS

(See BASIC & RPG II are also useful for local processing)

COMMUNICATIONS

DATAPOLL

Emulators



MULTI-PROCESSING BUSINESS SYSTEMS - DATASHARE

Businesses considering computers need two important items: multiple personnel access to the computer and an easy means of maintaining operator files and records. DATASHARE does this by allowing up to sixteen users to access the power of a 2200 or 5500 processor and by using the flexible file power of the Disk Operating System.

To understand the DATASHARE system a prospective user needs to become familiar with both the DATASHARE program and the Disk Operating System. The Disk System also has the ability to run utilities such as SORT and other file maintenance aids, when not running DATASHARE.

If off-line communications to a central computer are contemplated, a review of the communications packages would be informative.

If you're planning on implementing a DATASHARE system, the following areas will be of interest:

OPERATING SYSTEMS

Disk Operating System

DOS Utilities

PROGRAMMING LANGUAGES

DATASHARE

COMMUNICATIONS

DATAPOLL

Emulators

GENERAL PURPOSE BUSINESS COMPUTING

Many Datapoint computers are used as local, in-house, production computing facilities. Application programs written for these tasks are usually created in a high-level language. If local processing will be part (or the entire goal) of a system the following will be useful:

OPERATING SYSTEMS

ALL

PROGRAMMING LANGUAGES

DATABUS

RPG II

BASIC

SCRIBE

DATA COMMUNICATIONS

With more and more companies placing computer power in their field offices, the task of communicating data to other locations becomes important. The technical problems of communications confronting the system planner can often be more complex than the problem of processing the data. This makes the availability of proven, error-free and operator-oriented communications packages vitally important to keeping development costs to a minimum.

Many of the communications packages available emulate major manufacturers' communications disciplines while others are specifically designed for polling of intelligent terminals and for data collection. DATAPOLL, for instance, is designed as a remote site to central office (polling terminal) communications package. The communications can be handled automatically, with the collected data residing on Disk or an industry-standard magnetic tape, ready to be loaded on the central computer for processing (or processed by the Datapoint computer).

COMMUNICATIONS

DATAPOLL

Emulators

UTILITIES PACKAGES

A utility is a program performing a task that generally assists in the operation of a larger system. Utilities may be program debugging aids, programs that transfer data from one media to another, or groups of useful subroutines that a system designer might incorporate into a larger program.

The utility listings are comprehensive and only a sampling is listed below.

Debugging tools

Math subroutines

Data transfer/print

Recovery and backup

Sort/Index/Reformat

Program generation

SECTION 3 THE OPERATING SYSTEMS

With Datapoint computers an operating system forms the foundation of a program generation system and also becomes the master program under which the final applications program will operate. In many cases, application programs will use sections of the operating system for subroutines. In a disk-based system, the operating system will control interrupt servicing and provide the programmer a convenient means of file control and maintenance.

Datapoint offers five operating systems - one for each major storage media. The critical user will notice that the power of each operating system rivals that of many medium size business computers. It's also important to note that each OS is fundamentally similar in syntax and structure. A programmer, or user, familiar with one OS has a good knowledge of the other three due to their similarity.

The user is encouraged to obtain the user's guides for the operating system

pertinent to his system. The user's guides are detailed reference manuals and provide specific descriptions for each system. Only a thorough reading of these manuals can yield an appreciation of the power contained in the Datapoint Operating Systems.

DISK OPERATING SYSTEMS

The Datapoint Disk Operating Systems are totally dynamic file and interrupt management systems. They are symbolically oriented and designed to completely remove any requirement that the programmer or operator know any disk file parameters about any data file or program other than its name. The DOS Directory maintains 256 eight-character names and also provides a three-character extension to facilitate the segregation of files into types (such as loadable object files, text files, DATABUS intermediate code files, etc.) File location, expansion, contraction and random/sequential and index/sequential (ISAM) access facilities are automatically provided by the Datapoint DOS's.



Complete file and directory manipulation commands are included along with internal foreground task control for keyboard/screen, cassette drivers and user defined foreground processes. For example, user defined communications processes can be run concurrently with background through this facility.

A debug with real-time program-counter display and break-point facilities is resident within the DOS.

These Disk Operating Systems also provide the nucleus for rapid and powerful program generation. Editors, Assemblers and program generation packages such as those associated with the high-level language series are efficiently handled by a DOS, thus making the system programmers time more productive.

Although the DOS's require a 16K machine, the loader area is compatible with CTOS-generated programs and allows them to be cataloged and run directly from the DOS without conversion.

In addition to the powerful facilities described above, DOS has created a large number of powerful programs and utilities based upon it. These are described in the DOS Utility Section.

Cartridge Disk Operating System

DOSGEN 1.2

Equipment Required: 16K 2200 or 5500. One or more 9350 Cartridge Disks

Optional Equipment: None

Support Software: None

DOSGEN provides the means to generate a cartridge DOS System on the Cartridge Disk. Utilities must be ordered on separate cassettes.

Cartridge Disk Operating System

DOS.A

Equipment Required: 16K 2200 or Any 5500 Processor, One or more 9350 Cartridge Disks

Optional Equipment: None

Support Software: None

To be released

DOS.A provides a means to generate a DOS system on the disk cartridge. This release will replace DOSGEN 1.2. See note at bottom of page regarding utilities.

Mass Storage Disk Operating System

DOS.B

Equipment Required: 16K 2200 or Any 5500 Processor. One or more 9370 mass storage disks

Optional Equipment: None

Support Software: None

To be released

Generates a DOS system for the Mass Storage disk. See utilities note at page bottom.

Diskette Operating System

DOS.C

Equipment Required: 16K 2200 or Any 5500 Processor, One or more 9370 Disks

Optional Equipment: None

Support Software: None

Media: Cassette

To be released

This version of DOS permits a Diskette DOS to be generated where the diskette is an optional peripheral to the 2200 or 5500 processor. See utilities note at page bottom.

Diskette 1100 Operating System

DOS.C

Equipment Required: Diskette 1100 Processor

Optional Equipment: None

Media: Diskette

Support Software: None

To be released

The Diskette 1100 contains no cassette tape decks. This program allows a DOS to be generated from Diskettes for the Diskette 1100. This version is used only on the Diskette 1100 and has been specifically optimized for the diskette media. Utilities are included on this release.

Note: DOS.A, DOS.B, DOS.C will include Operating System, System Generation, and all applicable DOS utilities.

DOS UTILITIES

The power of the Disk Operating Systems are enhanced by the availability of useful general purpose utilities.

These utilities provide the system programmer with a quick and easy means of rearranging formatted data, patching disks, media-to-media transfers and other common data processing operations.

A short description is provided for each package.

These programs were formerly available individually under the first release of the DOS program. At the present time, however, the "dot series", i.e., DOS.B Operating System, contains all these utilities plus the operating system on a disk file. If cassettes are used, these utilities can still be obtained individually on a cassette. The user is encouraged to order the appropriate Disk Operating System (when made available) containing all the utilities, if operation under a "dot series" is contemplated.

Disk Copy and De-Fragmentation Program

BACKUP

Equipment Required: 16K 2200 or 5500 Processor,
(2) 9350 or (1) 9350 Disk

Optional Equipment: None

Support Software: None

BACKUP provides a convenient, high speed means for transferring data from one disk pack to another disk pack. In the process of transferring data, the receiving disk pack can be optionally reformatted, sequenced and packed with the transferred data.

Program Chaining Command

CHAIN

Equipment Required: 16K Processor, Any Disk

Optional Equipment: None

Support Software: Appropriate DOS

CHAIN is a powerful Job-Control Language using macro and symbolic substitution facilities. This allows jobs to be queued and program questions automatically answered which normally would require constant console attention and manual command entering. The operator commands are entered through the standard DOS EDITOR or by other programs to a standard file.

Block Text Editor

BLOKEDIT

Equipment Required: 16K Processor, Any Disk

Optional Equipment: None

Support Software: Appropriate DOS

BLOKEDIT is a text file block editor which provides (from line-number listings on screen or printer) the facility to create a new file from any line-numbered-indicated segments from any other file.

Text File Lister

DOSLIST

Equipment Required: 16K Processor, Any Disk

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DOS

Text file lister is a program that lists data files on the screen or on a printer. Optional line numbering and initiation at special line numbers or logical record number positions provided for general file inspection.

Cyclic Redundancy Check Fixer

CRCFIX

Equipment Required: 16K 2200 or 5500 Processor,
9350 Disk

Optional Equipment: None

Support Software: None

Where cartridge disk pack data files have been damaged by hardware failure or by program errors, this utility will examine all data files for parity errors and offers the opportunity to recompute the parity or fix it later.

Object File Patcher

DOSFIX

Equipment Required: 16K Processor, Any Disk

Optional Equipment: None

Support Software: Appropriate DOS

DOSFIX permits users to operate upon object code disk files in the manner of the debug routine operating on memory. Bytes are addressed by the memory location they load to and may be inspected or modified directly.

Visual Dump Program

DDUMP

Equipment Required: 16K 2200 or 5500 Processor,
9350 or 9370 Disk

Optional Equipment: None

Support Software: None

DUMP will print or display any sector or continuous sequence of sectors from the disk, either in Alpha or Octal. Additional formatted directory inspection displays are also provided.

Source and Object Cassette Output Command

SOBO

Equipment Required: 16K 2200 or 5500 Processor,
Disk

Optional Equipment: None

Support Software: Appropriate DOS

SOBO allows easy creation of a source/object tape taking disk file data and creating a cassette source/object tape.

Disk Bootstrap Generator

BOOTMAKE

Equipment Required: 16K 2200 or 5500 Processor,
9350 or 9370 Disk

Optional Equipment: None

Support Software: None

BOOTMAKE creates additional cassette bootblocks for DOS upon command without having to generate them under CTOS and the DOS GENERATING SYSTEM.

Mass Storage Disk Initializer

INIT9370

Equipment Required: 16K 2200 or 5500 Processor,
9370 Disk

Optional Equipment: None

Support Software: None

To be released

This utility is used only once on a 9370 pack to initialize a new pack. It does not include the generation system.

Sorted File Description List Command

FILES

Equipment Required: 16K 2200 or 5500 Processor,
9350 or 9370 Disk

Optional Equipment: Local or Servo Printer

Support Software: DOS 1.2 (order DOSGEN)

FILES permits interactive inspection of the DIRECTORY in the DOS and gives an alphabetical display or printout of the DIRECTORY names or part of the directory names. It optionally presents the segment list and location of space allocated to each file.

DOS Pack Sleep

SYSLEEP

Equipment Required: 16K 2200 or 5500 Processor,
9350 Disk

Optional Equipment: None

Support Software: DOS 1.2 (order DOSGEN)

SLEEP is a powerful and complete disk pack check and system sleep, employing three subprograms called Wake, Sleep and Pakchek. Pakchek provides a complete check of the Directory, Cluster Allocation Table and Retrieval Information Blocks and a comprehensive diagnostic display with 30 listed error types. Wake produces a reloadable copy of the Catalog, Directory and RIB's can completely restore these critical data areas in the event of a catastrophe. Sleep retrieves data from the disk for disk storage and safekeeping.

Cassette Input/Output Utilities

MIN/MOUT

Equipment Required: 16K 2200 or 5500 Processor,
9350 or 9370 Disk

Optional Equipment: None

Support Software: DOS 1.2 (order DOSGEN)

Where user requirements dictate transferral of cassette data in either source or object files (where multiple file transfer is also required) the MIN/MOUT facilities provide powerful utilities. With MIN/MOUT, multiple cassette files may be transferred to the disk, maintaining file integrity, or files may be transferred from disk to cassette. In the transfer operation, a directory, loader, date and verification may be selected. This facility will handle all types of Datapoint files except Index tables associated with ISAM files, i.e. those of extension "/ISI".

Disk-based Sorting Facility

SORT

Equipment Required: 16K Processor, Any Disk

Optional Equipment: Local or Servo Printer

Support Equipment: Appropriate DOS

For users with a Datapoint processing system which includes disk storage, Datapoint offers SORT, an efficient and economical method of generating new data files from existing disc-resident data. Representing a sophisticated approach to reordering file data, SORT provides speed and versatility formerly available only to users with large-scale data processing systems.

Additionally, SORT allows the user to resolve, via the console, the problem of sorting data while permitting original data files to remain intact. Regardless of the Datapoint system software (i.e., DATABUS, DATASHARE, RPG II, BASIC, SCRIBE, Editor, Assembler, etc.) or the disk file format (i.e., indexed or sequential) utilized when the original data file was created, SORT can generate a new file which is fully compatible with any Datapoint system.

Once loaded, SORT, upon receipt of a single command from the keyboard, not only performs multi-key sorting procedures but also reformats the output files. When issuing the command to initiate SORT, the user need only specify the following:

1. The name of the data file to be located and sorted.
2. The character positions (i.e., the location or key) of the sort field and, if desired, the positions of additional fields to be subsequently reordered.
3. The name of the resulting output data file.

In addition to the above, the following optional specifications can be designated:

1. Output format as either indexed or sequential.
2. Ascending or descending collating sequences.
3. Required portions of the records to be placed in the new file.
4. Hardcopy output of the new file.
5. Sorting of primary and secondary records.
6. Conditional parts.
7. Insertion of constant data.
8. Tag files, i.e., one with pointers or tags to designate several sequences of the same file.

By providing the options listed in the preceding paragraphs, SORT is suitable to a wide range of applications -- from simple tasks such as generating telephone lists to more complex procedures such as producing files to be used by assembly programs.

Magnetic Tape Utility Routine

TAPE

Equipment Required: 16K Processor, Cartridge or Mass Storage Disk and 9-Track Tape Transport

Optional Equipment: None

Support Software: Appropriate DOS

For backup of critical disk data the tape program provides a means to transfer entire disk file contents onto a 7 or 9 track BPI tape deck and subsequently transfer back to disk. Operation is automatic once the user specifies the disk drive, type of data (ASCII, EBCDIC), etc. It is a versatile routine, and offers pack de-fragmentation.

DOS Pack Repair Program

REPAIR

Equipment Required: 16K 2200 or 5500 Processor, 9350 or 9370 Disk

Optional Equipment: None

Support Software: None

REPAIR attempts to make a best-possible recovery from catastrophic disk failure caused by hardware failure or software errors. It will indicate problems with the Directory, Cluster Allocation Table, Retrieval Information Blocks and other pertinent systems problems. You will be offered the opportunity to delete files, fix it later (using other utilities), recopy the Directory, regenerate the CAT from the RIB's, etc. REPAIR should be in the facility of every Datapoint DOS.

INDEXED SEQUENTIAL FILE ROUTINES (ISAM)

Files created under any system program such as DATASHARE, DATABUS or RPG II which use the standard DOS file format, can be accessed either sequentially or by an indexed method which allows access via any field in the record.

ISAM Index File Reformatter

REFORMAT

Equipment Required: 16K Processor, Any Disk

Optional Equipment: None

Support Software: Appropriate DOS, SORT,
INDEX

Disk file data can exist in three forms: Record compressed, space and record compressed and random or blocked format. The REFORMAT program permits non-object files on disks to be changed from one format to another, and recovers unused space from ISAM Update. It is required in an ISAM System.

ISAM Index File Generation

INDEX

Equipment Required: 16K Processor, Any Disk

Optional Equipment: None

Support Software: Appropriate DOS, SORT,
REFORMAT

INDEX generates the access structure for a file required by the Datapoint ISAM System. Regeneration for old, fragmented data files is also provided. Its speed permits frequent usage. INDEX is required in an ISAM System.

CASSETTE TAPE OPERATING SYSTEM

The Cassette Tape Operating System is an interactive program enabling the user to create, debug and execute programs utilizing any Datapoint processor containing at least 8K of user memory and cassettes. A file structure for cassettes is defined so that programs may be cataloged onto the CTOS tape.

Up to fourteen source and/or object files may be cataloged by name and another sixteen files may be cataloged by number. Once cataloged, files may be run by name or number, or they may be copied to another tape in either a load-and-go form or in their object form.

The utility routines included enable the user to program the keyboard, CRT, and cassettes with ease. These routines, including a debugger, occupy less than 2K of memory. In addition, facilities for listing tapes and for patching program tapes are available as a part of CTOS. The operating system is designed to be overlaid by application programs that do not utilize all of the subroutine capabilities contained.

The command repertoire includes the following file manipulation commands and utilities.

IN - input a program file and assign a name to it.

DELETE - delete the specified file from the catalog and from the CTOS tape.

CHOP - delete the specified file and all subsequent files from the catalog and from the CTOS tape.

SYMBOLIC - input a source file and assign a name to it.

REPLACE - replace the specified file with a new object file.

INSERT - place a new object file on the CTOS tape in front of the cataloged file.

OUT - copy the specified file from the CTOS tape onto another cassette in object file format.

LGO - write a loader followed by the specified file(s) from the CTOS tape.

APPEND - append an object file to the cataloged file.

ATTACH - attach the source file to the object file in front deck.

ATO - attach the object file to the object file in the front deck.

AUTO - to set a program to be automatically loaded by CTOS without operator command.

MANUAL - clears the auto-load entry.

RUN - load and execute specified file.

SREPLACE - replace the specified file with a new source file.

SINSERT - place a new source file on the CTOS tape in front of the cataloged file.

In addition, there are tape manipulation commands: REWIND, BACKSPACE, FAD, (file advance), and RAD (record advance). The LIST command will read and display any tape on the video screen. Either an octal or ASCII display of the data may be specified. Another powerful command, FIX, permits the user to make changes to a program tape and thus avoid frequent reassembly while debugging.

There are utility commands for duplicating the system (OUT\$), for making new CTOS systems with no files cataloged (OUT OS\$), for inputting (IN\$) the files from another CTOS (or tape specially made by MTOS) and to make a special tape (three bytes long) to enter debugger (OUT!).

Cassette Tape Operating System

CTOS

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

This is the basic CTOS tape containing fundamental cassette tape operating system along with all the CTOS utilities.

Assembly Program Generation System

CTOSPGS

Equipment Required: 8K Processor

Optional Equipment: Local or Servo Printer

Support Software: None

This system tape contains the basic CTOS operating system program, the current assembler, current editor and several powerful utilities.

Boot Block Core Dump Configuration/Generator

CORDMP

Equipment Required: 8K Processor. (4K Processor for execution after generation), Local or Remote Printer

Optional Equipment: None

Support Software: None

This loader-resident memory-to-printer dump gives a hard-copy octal image of memory contents on a Datapoint local printer.

CTOS UTILITIES

Cassette General Purpose Lister

LISTER

Equipment Required: 8K Processor

Optional Equipment: Local or Servo Printer

Support Software: None

LISTER permits a hard copy printout or local visual display of cassette file data. The file data may be printed in either alpha-numeric or octal equivalent form.

Cassette Object Tape Patcher

FIX

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: CTOS

FIX allows examination and correction-in-place in cassette object file data. The programmer need only specify the location by visually examining the tape through the video screen and correcting that data in place without need to completely rewrite a cassette tape.

Memory to Cassette Tape Dump

DUMP

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: CTOS

DUMP provides a means of saving binary data in memory on a cassette tape.

Expanded Cassette Tape Duplicating Program

RCOPY

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

RCOPY produces a duplicate of a program tape with the loader replaced by the RAM display initialization loader for those processors incorporating the high-speed display option.

Boot Block Resident Debugging Routine

DEBUG

Equipment Required: 8K Processor, (4K Processor to execute after generation)

Optional Equipment: None

Support Software: None

For programs that require modification without the need of reassembling for program evaluation or analysis or for finding errors, the DEBUG program provides a means of changing memory locations by the keyboard and examining memory locations. The program itself is resident in the boot block location and requires only execution of that area to modify memory and not execution of the entire program area.

Cassette Tape Duplicating Program

COPY

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

COPY provides the same functions as RCOPY with the elimination of the random access programmable display loading feature.

MAGNETIC TAPE OPERATING SYSTEM

The Magnetic Tape Operating System (MTOS) is an interactive program enabling the user to create, debug and execute programs utilizing an 8K or larger Datapoint 2200 and a 9-track magnetic tape transport. The file structure and record format defined by CTOS is maintained so the programs may be easily transferred between cassettes and magnetic tape.

As in CTOS, up to fourteen source and/or object files may be cataloged by name and another sixteen files may be cataloged by number. Software end-of-file markers separate files on magnetic tape. Once cataloged, files may be run by name or number, or they may be copied to another tape in either a load-and-go form or in their original object form.

Utility routines included enable the user to program the keyboard, CRT, cassettes and 9-track tape with ease. These routines, including a debugger, occupy slightly more than 2K of memory. In addition to the standard MTOS drivers, the source of some general purpose magnetic tape driver routines (TDRIVE) is available on the system generation tape. These routines take less than .5K and are suitable for either 7 or 9 track tape transports.

The command repertoire includes the following file manipulation commands and utilities:

IN - input a program file and assign a name to it.

DELETE - delete the specified file from the catalog and from the MTOS tape.

CHOP - delete the specified file and all subsequent files from the catalog and from the MTOS tape.

SYMBOLIC - input a source file and assign a name to it.

REPLACE - replace the specified file by a new object file.

INSERT - place a new file on the MTOS tape in front of the cataloged file.

OUT - copy the specified file from the MTOS tape onto a cassette in object file format.

LGO - write a loader followed by the specified file(s) from the MTOS tape.

APPEND - append an object file to the cataloged file.

ATTACH - attach the source file to the source file in the front deck.

ATO - attach the object file to the object file in the front cassette deck.

AUTO - set a program to be automatically loaded by MTOS.

RUN - load and execute specified file.

SREPLACE - replace the specified file with a new source file.

SINSERT - place a new file on the MTOS tape in front of the cataloged file.

MANUAL - clears the auto-load entry

There are also utility commands for duplicating the system (**OUT\$**) - this writes the catalog and files to a cassette (or MTOS tape) - and for inputting (**IN\$**) the files from MTOS cassette (or tape made by the **OUT\$** command).

Magnetic Tape Operating System Generation

MTOSGEN

Equipment Required: Any Processor with at least 8K Memory, 9550 Mag Tape

Optional Equipment: None

Support Software: None

This program provides all that is needed to generate a cassette loader and complete MTOS resident on the tape. All MTOS utilities are included.

7 and 9 Track Tape Dump

TDUMP

Equipment Required: 8K Processor, 7 or 9 Track Magnetic Tape

Optional Equipment: None

Support Software: None

This program provides a console controlled visual inspection in octal of the contents of each record of a 7 or 9 track tape. This is useful in diagnostic work and program debugging for this media.

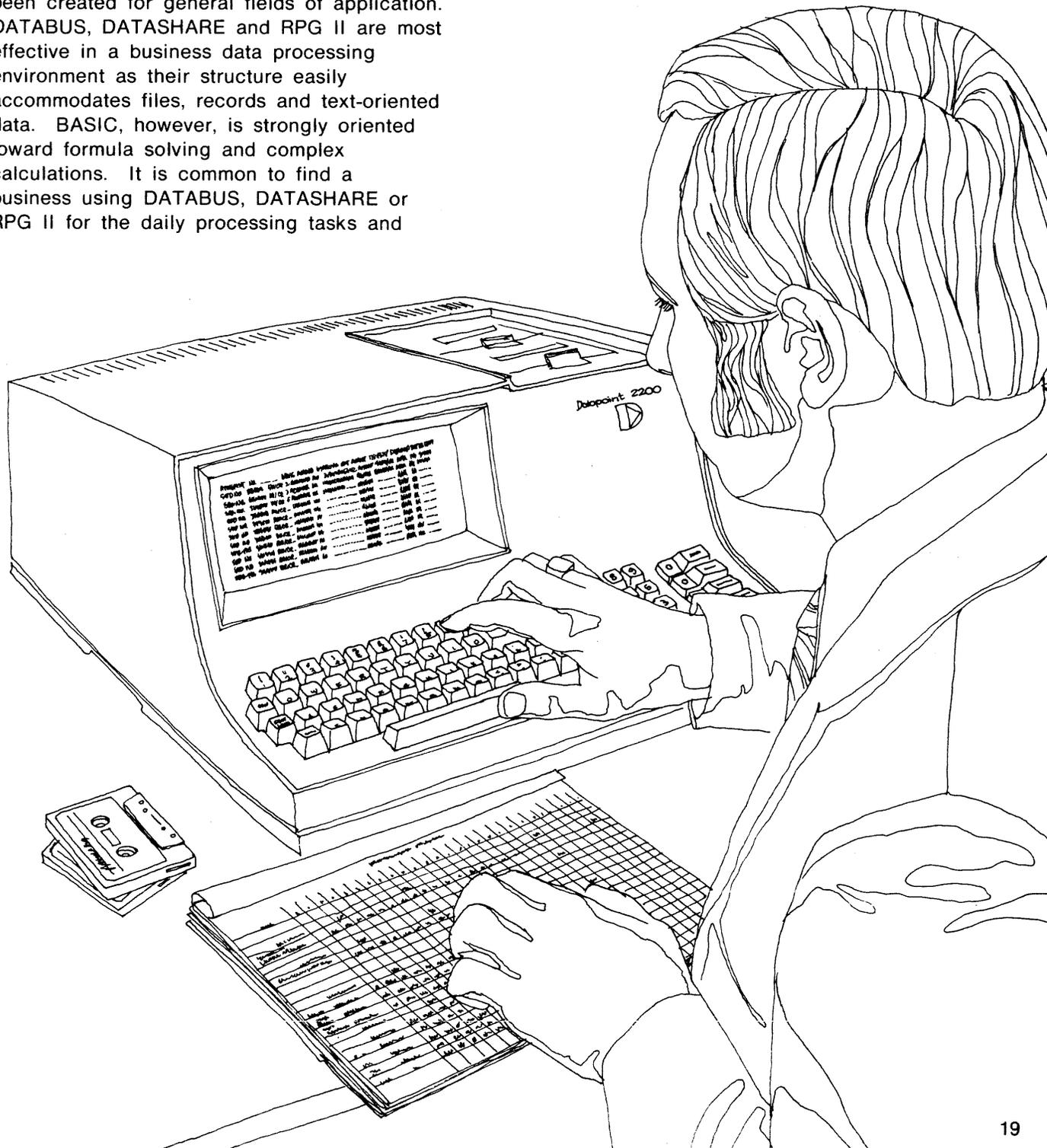
SECTION 4 PROGRAMMING LANGUAGES

A high-level programming language allows a programmer to create his application task in an almost English-language manner. These languages eliminate the task of dealing with the fundamental logical operations of the processors thus allowing a programmer to concentrate on the business problem rather than concerning himself with machine sequence operation.

A variety of high-level languages have been created for general fields of application. DATABUS, DATASHARE and RPG II are most effective in a business data processing environment as their structure easily accommodates files, records and text-oriented data. BASIC, however, is strongly oriented toward formula solving and complex calculations. It is common to find a business using DATABUS, DATASHARE or RPG II for the daily processing tasks and

BASIC for solving marketing problems that involve complex mathematics.

Datapoint has taken this need for easy-to-use languages and added such utilities as DATAPOLL, a high-level communications package and SCRIBE, a text-processing language to an already impressive list. The end result to the businessman is lower costs in creating applications programs.



DATABUS

DATABUS, the Datapoint Business Language, is a family of high level programming languages designed especially for any Datapoint processor (with the necessary amount of memory) and its peripherals. The language is especially useful in commercial environments where time is an essential element of production. This easy-to-learn language can be used to write sophisticated software packages and is therefore particularly useful to Datapoint users who are just beginning implementation.

For users requiring disk file capability, the DATASHARE language has been specifically designed to operate in a single-user mode using the video screen and keyboard of the processor as the operator interface. This concept has many advantages; the language is essentially the same as DATABUS, the language utilizes all the disk file features of DOS, and easily upgrades to the full multi-terminal DATASHARE system.

There are four different packages (not including single-user DATASHARE) in the CTOS DATABUS family, each providing a different set of capabilities. The programmer may select the DATABUS system which contains the features needed to accomplish his task. DATABUS 1 provides full arithmetic, file handling, keyboard input, screen display, and printer formatting capabilities. DATABUS 2 provides the complete range of DATABUS 1 plus character string handling facilities. Although the user space is slightly smaller than DATABUS 1, this version has the most versatile command structure.

DATABUS 3 contains an extensive set of communication commands to permit transmission and reception of data between Datapoint 1100, 2200 or 5500 processors using a 9402 1200 baud modem. It takes advantage of the auto-dial and auto-answer features of the 9402 and is capable of data reception from any Datapoint file. This version provides all the capabilities of DATABUS 2 except full arithmetic, which has been replaced by a set of limited integer arithmetic instructions. DATABUS 3 also provides the capability to read and write 7 or 9 track industry compatible magnetic tapes written in ASCII, EBCDIC, or BCD.

DATABUS 4 will run in a minimum of 4K of memory and is especially powerful for users not requiring an arithmetic package. Any memory above the 4K minimum is allotted to the user for additional

programming space. DATABUS 4 provides limited string handling, and numeric integer arithmetic, keyboard input, screen display, printer formatting and cassette tape file handling.

DATABUS 5 provides all the facilities of DATABUS 4 plus an assembly language call instruction and the capability to move strings to numeric indexes and back. The increased instruction set expands user flexibility significantly and only slightly reduces user space in a 4K machine.

DATABUS 6 runs in a 4K machine and offers a highly sophisticated keypunch replacement. DATABUS 6 requires no programming by the user. Taking advantage of the features provided, he can initialize a series of "control cards." The system provides the standard keypunch operations, such as punching, editing, verifying and duplicating. An additional feature is the capability to transmit data over a communications line to a DATABUS 3 program for possible pooling on a magnetic tape. DATABUS 6 has been largely superseded by DATAFORM.

The cassette tape format is compatible for all DATABUS systems. One DATABUS system can generate cassette tapes to be read and processed by another.

Each of the DATABUS 1 through 5 systems is made up of a program generation tape and an interpretive tape. The program generation tape compiles user programs and generates an object file which will be interpreted by the interpretive system at execution time. The compiler and interpreter may be configured at any time for machine size and version and printer type to meet the user requirements.

DATABUS 1

DB1PGS -Program Generation System

DB1SYS -Interpretive System

Equipment Required: 8K Processor

Optional Equipment: Local or Remote Printer

Support Software: CTOS

The Program Generation System is CTOS based (included) and contains the DATABUS editor, equipment configurator and compiler. The Interpretive System is also CTOS-based and contains an Interpreter for the compiled code, and equipment configurator. The combination of these two types provides a complete DATABUS 1 cassette-based facility. DATABUS 1 is generally obsolete by DATABUS 2.

DATABUS 2**DB2PGS** -Program Generation System**DB2SYS** -Interpretive System

Equipment Required: 12K* Processor

Optional Equipment: Local or Servo Printer

Support Software: CTOS

* (A new release of DATABUS 2 will require only 8K)

DATABUS 2 is the most popular and, for many applications, the most powerful of the DATABUS series. The program tapes contain CTOS. DB2CON converts pre 1973 releases of DATABUS to a new GEDIT file format and will not be useful to new users. This language is essentially the same as DATASHARE, although the latter contains commands relating to the disk media.

DATABUS 3**DB3PGS** -Program Generation System**DB3SYS** -Interpretive System (9-Track)**DB3SYS7** -Interpretive System (7-Track)

Equipment Required: 8K Processor, 7 or 9 Track Mag Tape

Optional Equipment: Local or Remote Printer 9402 Communications Adaptor

Support Software: CTOS

The user should order the PGS tape and an appropriate version of the SYS tape. CTOS is included in the tape.

DATABUS 4**DB4PGS** -Program Generation System**DB4SYS** -Interpretive System

Equipment Required: 8K Processor , (4K Processor for execution after generation)

Optional Equipment: Local or Remote Printer

Support Software: None

Both tapes are essential for program generation. Note that at least one 8K processor is required for program generation.

DATABUS 5**DB5PGS** -Program Generation System**DB5SYS** -Interpretive System

Equipment Required: 8K Processor, (4K Processor for execution after generation)

Optional Equipment: Local or Remote Printer

Support Software: None

Both tapes are required.

DATABUS 6**DB6SYS**

Equipment Required: 4K Processor

Optional Equipment: None

Support Software: None

The SYS tape contains all functions and programs in an essentially interactive manner. Users contemplating this program should also investigate DATAFORM.

DATABUS 7**DB7SYS**

Equipment Required: 16K 2200 or 5500 Processor, 9350 Disk

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DOS

Users considering DATABUS 7 and disk file operations should consider the capabilities of single-user DATASHARE. More power and programming capabilities are available.

DATABUS for Diskette 1100**DB11**

Equipment Required: Diskette 1100 (16K), with one or more Diskettes

Optional Equipment: Local or Servo Printer

Support Software: DOS.C

To be released

This is a version of DATABUS designed to take advantage of the processing power and storage of the DISKETTE system. It contains the entire instruction set of DATASHARE and runs under DOS.C, an operating system that makes efficient use of the diskette media. Both programs are contained on diskettes.

DATAFORM

Forms oriented, straight forward data entry applications are best handled by a data entry language with the same characteristics. DATAFORM is a straightforward, forms generating facility providing the user with simplified implementation and an uncomplicated change and update capability.

Level I is the forms generation facility of DATAFORM. Forms may be generated and utilized for data transcription to cassette or diskette media with absolutely no programming required. Basic data entry edit criteria such as alpha, numeric, justification, and fill requirements may be assigned to fields within a record with Level I.

Level II provides an extension of the error checking capability of DATAFORM through a high level programming language capability. Arithmetic, logical, and data manipulation functions may be performed. Table lookups, range checks, and reasonability criteria may be utilized under Level II.

DATAFORM 2 is the cassette based version of DATAFORM. An 8K or greater machine is required.

DATAFORM 1100 is diskette based and has been enhanced for use with the Diskettes. It operates under DOS.C.

Disk Based DATAFORM provides for form and program generation and testing for DATAFORM 2 users, using the facilities of a disk based system. It's generally used with the cartridge disk.

DATAFORM 2, Disk Based DATAFORM and DATAFORM for Diskette 1100 are identical in function. The user area available in the cassette version is 1.5K while the diskette version provides approximately 5K.

For many users DATAFORM provides the easiest and most efficient manner of placing intelligent terminals in service. The Level I capabilities permit forms to be literally typed across the screen. This feature can eliminate the initial need for a highly trained programming staff when data entry is to be the only, or primary task.

Cassette DATAFORM

DF2FGS -Form Generation System

DF2PGS -Program Generation System

DF2SYS -Data Entry System

Equipment Required: 8K Processor

Optional Equipment: Local or Servo Printer

Support Software: None

Using these three tapes a complete DATAFORM system can be set up on an 8K 1100 or 2200 processor. This system provides a complete data entry operation, producing a compatible data tape ready to be transmitted or processed. Files generated are compatible with other Datapoint packages such as DATABUS or DATAPOLL.

DOS DATAFORM

DF2DOSG

Equipment Required: 16K Processor and Any Disk

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DOS

This tape will establish the complete library of programs necessary to run DOS DATAFORM on the disk under any of the Datapoint disk operating systems. This provides an identical operation to that of the Cassette DATAFORM with the exception that form linking and file processing is greatly speeded. DOS DATAFORM is also useful for rapid generation of Cassette DATAFORM systems for use in other cassette processors.

DATAFORM for Diskette 1100

DF11

Equipment Required: Diskette 1100, one or more Diskettes

Optional Equipment: Local or Servo Printer

Support Software: DOS.C

This system provides the complete library of software necessary to operate DATAFORM on the Diskette 1100. It is distributed on a Diskette intended for use with the DOS.C operating system. Many features have been added to this DATAFORM. Among them are much faster form loading and expanded user areas.

DATASHARE

Datashare permits the simultaneous execution of independent DATASHARE programs, each dealing with its own remote Datapoint CRT terminal. The Datashare interpreter runs under the Disk Operating System (taking advantage of all of its file handling characteristics), handles a high-speed line printer, and allows intra-file access, thus providing a powerful data entry and processing facility. This configuration allows a flexible mix of remote, batch, and interactive processing all under the control of a high level language program, enabling the user to configure the system to best suit his data processing needs.

In addition, the DOS with its variety of Assembly and DATABUS language systems may be used alternately with DATASHARE, enabling off-line processing of tasks not applicable to the multiple terminal configuration. DOS routines provide for easy program preparation with a disk-based editor for programs and data. Complete file manipulation routines are also available.

Routines are available (SORT) for sorting files by desired parameters. An index utility is also available which provides the capabilities for use of ISAM (Index Sequential Access Method). This allows users to retrieve data by indexed parameters within a file.

A "JCL" type utility (CHAIN) can be used to provide for automatic processing of data with no operator intervention. Thus communications routines or processing programs can be scheduled automatically for off-hour execution.

Using Virtual Memory techniques, DATASHARE provides each program with a 16K area for user programs. This, in combination with the ability of the compiler to accommodate over 3400 labels, enables the user to create and use large sophisticated applications programs. To provide rapid program execution, the data area for each program is maintained in main memory and not swapped.

Standard operating systems are used with all software for compatibility. Thus application programs written in DATASHARE for the 2200 can be run on the 5500 with either disk. File structures are also maintained in a consistent format so the same files which are created using DATASHARE can be processed by DATASHARE or any other standard Datapoint software.

DATASHARE will support up to 8 terminals on a 2200 and up to 16 terminals

on a 5500 (using the mass storage disk). Either the cartridge (2.4 million character) or the Mass Storage (20 million character) disks may be used with DATASHARE. Since the terminals can be connected over telephone lines, there is no limit to the number of terminals in a dial-up system.

Any of the Datapoint 2200-series printers may be connected to the DATASHARE processor with printing being controlled from any of the ports. If the printer is busy with one port, another port trying to access the printer will wait until the first port releases the printer. Serial printers may also be attached to the CRT terminals.

All program execution in DATASHARE occurs in DATASHARE, a DATABUS language. Terminal command interpretation is handled in special ANSWER and MASTER programs (unique for each port) which also handle system security. These programs are provided with the system but may be compiled like any other DATASHARE program, enabling the user to completely define his own terminal command and security system.

Program generation is performed under the DOS using the general purpose editor and DATASHARE compiler.

Other standard software packages which can be used on DATASHARE systems are communications packages to other mainframes, BASIC, and RPG II. However, these software packages cannot be run while DATASHARE is running.

The prospective user should also note that a processor and disk (without terminals) can run as a single-user system thus providing the economics of a small system and permit easy growth into a multi-user DATASHARE system using the same programs.

DATASHARE 3 for Datapoint 2200, Cartridge Disk and 3360 Terminals

DS3.3360

Equipment Required: 16K 2200 or 5500 Processor,
9350 Disk

Optional Equipment: 9460 Communications
Adaptor, Local or Servo
Printer, 1 to 8 Teletype
Compatible Terminals or
Model Code (3360's) 3502
Terminals

Support Software: DOS 1.2,
INDEX, REFORMAT and
SORT

The most powerful DATABUS system, this serves the console and/or remote terminals with expanded DATABUS, and includes indexed sequential file structure. The latest versions of SORT, INDEX and REFORMAT should be obtained for this last feature. Users contemplating a disk DATABUS system would do well to consider writing their programs in DATASHARE and operating in a single user mode.

Text Processor (SCRIBE) for DATASHARE

DSSCRSYS

Equipment Required: Same as DATASHARE
additional 8K Processor is
required (to be used as
terminal to DATASHARE and a
9400 Communications
Adaptor Local or Servo
Printer (to be used with
terminal processor)

Optional Equipment: None

Support Software: DATASHARE

DATASHARE SCRIBE permits one or more ports to operate in a text processing mode under DATASHARE. One port is reserved for printing concurrently with editing. Ports operating the editor must have an 8K processor (1100 or 2200) as the terminal. The printing port also requires an 8K processor and local or servo printer. One port may serve dual functions, but not simultaneously. The complete compliment of hardware is described in the operating manual for this system. The DATASHARE SCRIBE software package consists of all the software necessary for the servo-printing, terminal-emulating 1100. All other programs run normally in the other DATASHARE ports associated with this system.

DATASHARE 3 for 2200, Mass Storage Disk and 3360 Terminal

DS3B3360

Equipment Required: 16K 2200 or 5500 Processor,
9370 Disk

Optional Equipment: 9460 Communications
Adaptor, Local or Servo
Printer, 1 to 8 Teletype
Compatible Terminals or
Model Code (3360's) 3502
Terminals

Support Software: DOS.B

To be released

DATASHARE-3 for 2200 and mass storage disk provides greatly enhanced mass storage capabilities and significantly faster processing capabilities when several terminals are active. Running under DOS.B, this system provides the maximum of 40 megabyte disk support, the significantly faster access times and other features due to the speed of the large mass storage disk drives. In addition the 16 buffers in the controller are utilized to greatly reduce page faulting and multi-processing conflicts, thus greatly speeding up the response time when multiple terminals are used.

DATASHARE 3 for 2200, Cartridge Disk and 3600 Terminals

DS3.3600

Equipment Required: 16K 2200 or 5500 Processor,
9350 Disk

Optional Equipment: 9460 Communications
Adaptor, 1 to 8 3601
Datastations, Local or Servo
Printer

Support Software: DOS 1.2 (order DOSGEN)

To be released

DATASHARE-3 for 2200 cartridge disk and 3600 terminal provides a total applications software compatible version of DATASHARE-3 for the 3600 terminal. Although the 3600 and 3360 terminals may not be mixed on the same DATASHARE system, this DATASHARE-3 provides total compatibility for the applications software when the 3600 terminal is used.

DATASHARE 3 for 2200, Mass Storage Disk and 3600 Terminals

DS3B3600

Equipment Required: 16K 2200 or 5500 Processor,
9370 Disk

Optional Equipment: 9460 Communications
Adaptor, 1 to 8 3601
Datastations, Local or Servo
Printer

Support Software: DOS.B

To be released

This DATASHARE operates under DOS.B and provides all the enhancements mentioned in DATASHARE-3 for 2200 mass storage and 3360 terminals except that it provides service to the 3600 terminal. 3360 and 3600 terminals may not be mixed under this DATASHARE system.

DATASHARE Remote Program Generation Packages

DS3REMOT

Equipment Required: Same as DATASHARE

Optional Equipment: Same as DATASHARE

Support Software: Same as DATASHARE

DATASHARE remote program generation provides the user the capability of editing source files in the DATASHARE language from a remote terminal and, through the ROLLOUT feature, provides total remote compilation and listing. Remote program generation is a significant advantage when further program development must proceed simultaneously with the production utilization of a DATASHARE system. DSREMOTE is for DATASHARE 2 users, DS3REMOT is for DATASHARE 3 users.

RPG II

Datapoint RPG II (Report Program Generator II) is a language specifically oriented for efficient business data processing. RPG II is a language widely recognized in the data processing industry because of its use with the IBM System/3. Those users acquainted with the IBM RPG II need not learn a new programming language in order to achieve results on the Datapoint processors. Those users not familiar with RPG II will discover the ease of program generation with it. This language has its own internal logic which eliminates duplication of programming effort. For example, the programmer only needs to specify an output format specification for a specific event and output will automatically be generated and formatted when the event occurs.

RPG II is a cassette or disk based system for using and creating Datapoint compatible disk files.

RPGPREP

Conventional RPG systems require the programmer to punch the program on cards for entry into the computer. If errors occur, the card must be repunched and the job submitted again. This can cause delays and unnecessary expense.

With RPGPREP on a Datapoint processor, the programmer types the program in directly using the keyboard and display. The RPGPREP program checks code instruction for proper structure and syntax. Errors are pointed out to the programmer and editing can be accomplished immediately. This combination of interactive program entry and computer-aided editing, produces much faster results.

RPG II Compiler for Diskette 1100

RPG

Equipment Required: Diskette 1100

Optional Equipment: Local or Servo Printer

Support Software: DOS.C

Media: Diskette

To be released

Same as RPG except Diskette media release.

RPG II Compiler

RPG

Equipment Required: 16K 2200 or 5500 Processor,
9350 or 9370 Disk

Optional Equipment: Local or Servo Printer, Card
Reader, 9550 Mag Tape

Support Software: Appropriate DOS, appropriate
RPGPREP

RPG II compiler provides the Datapoint user the facility for generating programs using the RPG II language. Although the language and most of the structures are identical to those used in other popular computers, this system additionally maintains complete data file compatibility with Datapoint's other processing systems such as DATASHARE and BASIC. Included in this version are the capacities for handling larger record sizes and index sequential file processing. The resulting programs from RPG compilation are Datapoint DOS Object Files in machine language. Consequently the RPG II compiler from Datapoint is not interpreted and runs very fast.

RPG Preparation for Cassette Systems

CRPGPREP

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

This is a time-saving facility for generating the RPG program file equivalent to the card deck in other card-based systems. CRPGPREP offers checking, editing and manipulation techniques at fingertip request. This system permits 8K 1100 or 2200 system to participate in the program generation for a larger disk system when more than one program generation station may be desired without having to acquire a second disk system.

RPG Preparation for DOS

RPGPREP

Equipment Required: 16K 2200 or 5500 Processor,
9350 or 9370 Disk

Optional Equipment: None

Support Software: Appropriate DOS

Same as CRPGPREP but disk based.

BASIC

The Datapoint BASIC language is patterned after the standard Dartmouth BASIC which was the first version of this comprehensive English statement language and remains one of the most generally used programming languages. It is a fully interactive programming language with line-at-a-time entry for storage and/or immediate execution. It is a stand-alone system requiring only a 16K Datapoint processor. Input can be entered via the keyboard or from file media such as cassettes or disks. Output can be routed to the processor screen, the cassette tapes or to an optional printer. The cassette tapes or disks may be utilized for loading programs, saving programs, storage of user data, and retrieval of user data. Because of its interactive capabilities, program errors are flagged immediately without the intermediate step of compiling the program.

This English-like language is especially useful for scientific and engineering applications, as a programming instruction tool and for certain types of business applications such as interest, rate-of-return, and statistical calculations. The features of BASIC include floating point arithmetic functions, two dimensional arrays (strings and numbers), keyboard input, cassette and disk input, CRT display output, cassette and disk output, standard condition flags, and inquiry as to remaining amount of unused user space.

BASIC for Cassette Systems

BASIC

Equipment Required: 16K Processor

Optional Equipment: Local or Servo Printer

Support Software: None

A completely self contained system providing a complete BASIC language capability with a 2200 16K processor. Although no other peripherals are required local and servo printers are supported with the addition of plotting directory from functions available when the servo printer is used. Approximately 3,000 bytes of user area are permitted. String variables and file processors are also included. File processing employs compatible Datapoint standard files, consequently files produced by any other system may be processed by this BASIC and vice versa.

BASIC for Disk-based Processors

DOSBASIC

Equipment Required: Any 16K Processor, Disk

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DOS

Essentially operates the same as Cassette BASIC, however, this version can be used with any Datapoint disk. Disk files may be dynamically opened and closed. A portion of the standard operating system editor "GEDIT" is incorporated within the BASIC providing interactive modification of statements without complete retyping. DOS BASIC also includes the facilities to be driven from the DOS Chain procedural systems as well as automatic invoking of a run-time file.

BASIC Library Programs

BLCURVE - Curve Fitting Package
BLEDITOR - Editor and Renumbering Package
BLMATH1 - Mathematics Package #1
BLMATH2 - Mathematics Package #2
BLPLOT - Plotting Package for Servo Printer
BLSTAT - Statistics Package

Equipment Required: 16K Processor (Servo Printer required for BLPLOT)

Optional Equipment: Local or Servo Printer

Support Software: BASIC

These programs provide many useful packages for a variety of mathematical and computational tasks. Experienced users can tailor these programs to disk systems, however, the above programs operate only with the cassette BASIC.

BASIC Renumbering Package

RENUMBER

Equipment Required: 16K Processor, Disk

Optional Equipment: Local or Servo Printer

Support Software: DOSBASIC

Provides a rapid program renumbering facility. Useful during program development.

SCRIBE

SCRIBE is a text processing language and print utility of unusual capability and power. Used in conjunction with the general purpose text editor (GEDIT) it provides a complete automatic typing and text processing system. Used in conjunction with other Datapoint programs, it greatly enhances the printing and text output power available to the Datapoint user. SCRIBE was used to develop this catalog.

When used as a complete text processing system, SCRIBE mates with the text editor (GEDIT) to use the Datapoint processor keyboard and screen for creation of text on cassette tapes for storage. Once the text has been recorded on the cassette, the text is printed by the SCRIBE program which recognizes and responds to the SCRIBE commands embedded in the text. Creating the text on the screen eliminates the time consuming correction of hard copy errors. All errors can be corrected before the text is recorded on the cassette. If an error is recorded, the GEDIT program facilitates error location and correction with automatic text reformatting.

In addition to the error reduction and error correction features, the SCRIBE system allows the typist the option of controlling the format of the printed text with typed commands rather than with manual operations. The operator can type completely free-form, embedding SCRIBE commands in place of performing manual operations such as carriage return, margin changes and tabstop setting.

The dozens of SCRIBE commands allow the most complicated charts and text formats to be handled quickly. And, with the exception of changing pages (even this can be avoided by use of continuous forms), the typing of the final document requires no supervision by the operator.

SCRIBE may also be used for the creation and production of computer typed form letters and mailing labels. The files can be used, one for the form letter text and another for the names and addresses. The name can be printed in the customary location and the name inserted after the salutation.

Names inserted in the body text are automatically sized and the surrounding body copy adjusted to correctly fit. The result is a perfectly typed, justified or ragged edge letter.

Text Processor for Cassette

SCRIBE(1)

Equipment Required: 8K Processor

Optional Equipment: Local, Remote or Selectric Typewriter with Interface

Support Software: CTOS, GEDIT

The SCRIBE version is a text processing system which is used with the standard cassette editor. The cassette editor produces the files which SCRIBE then processes. All of the features necessary for complete text manipulation and printing are included. SCRIBE 1 will operate in an 8K processor and provides output to either local, remote or Selectric typewriter printers. This tape includes CTOS and GEDIT.

Text Processor for Cassette

SCRIBE(2)

Equipment Required: 12K Processor

Optional Equipment: Servo Printer

Support Software: None

SCRIBE 2 provides identical service to that of SCRIBE 1 for all SCRIBE functions except printer output is available for the servo printer.

Text Processor for DOS

DSCRIBE

Equipment Required: 16K Processor, Any Disk

Optional Equipment: Local or Servo Printer or Selectric Typewriter with Interface

Support Software: Appropriate DOS

This version of SCRIBE contains disk file capability. These files may be dynamically opened and closed during the operation. In addition, local and servo printers and Selectric typewriters are included. The Editor is the DOS Edit Utility.

Also see DSSCRSYS under DATASHARE.

Assembly Language

The ASSEMBLER Provides the means for the programmer to create executable object code from a source file containing mnemonic operation codes. The source and object files may reside on either cassette tape or disk with a choice of local, remote, or servo printers for the output listing.

A programmer for the Datapoint processor may use symbolic names within the source code file to specify memory locations. These names will be defined and replaced by their octal equivalents by the ASSEMBLER. The user may request a variety of arithmetic and logical operations to be performed by the ASSEMBLER ranging from simple addition and subtraction to more complex variable shift counts. These arithmetic operations give the programmer an easy manner in which to set up data blocks in a style which can be readily manipulated by the 2200 processors. A limited set of macros are built into the ASSEMBLER and provide the programmer with single line memory reference mnemonics which would otherwise require two or more instructions. This list of macros also includes double register loads and shift counts.

The programmer running under the Disk Operating System has many additional assembly capabilities with versions of the Datapoint ASSEMBLER. ASSEMBLER 5 contains conditional assembly and list control directives, an expanded set of arithmetic operations, and an internal order loader. Although the internal loader is a simplified one, it does allow the programmer to perform entry point/external symbol linking address register relocation which will generate a form of relocatable object code. Program subroutines and system variables may be placed on separate files from the main program and its overlays with ASSEMBLER 5 performing the source code inclusion. In addition, this version of the ASSEMBLER introduces a sorted cross-reference listing of all symbolic names used in the program, their assigned octal value, and all reference to the name.

Cassette Assembler

ASM

Equipment Required: 8K Processor

Optional Equipment: Local or Servo Printer

Support Software: CTOS

Cassette Assembler ASM is an assembler for assembling source files in Datapoint machine language assembler code. An 8K minimum processor is required with larger processors yielding more label capability. No other support is required although a local or servo printer will provide hard copy output.

Dos Assembler

DOSASM5 - Assembler 5

Equipment Required: 16K Processor, Any Disk

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DOS

Assembler 5 provides all the basic assembly functions required for standard assembly of Datapoint machine language programs and also includes many enhancements such as file inclusion, limited arithmetic in expression fields, cross reference listings and others.

SECTION 5 GENERAL PURPOSE UTILITIES

The utility programs could be considered as a programmer's tool box. They're used to aid in the generation of applications programs by providing handy modules that are commonly used in most computer applications.

These utilities range from a general-purpose Editor, which with the Assembler is used to create machine language programs, to a variety of media-to-media transfer routines.

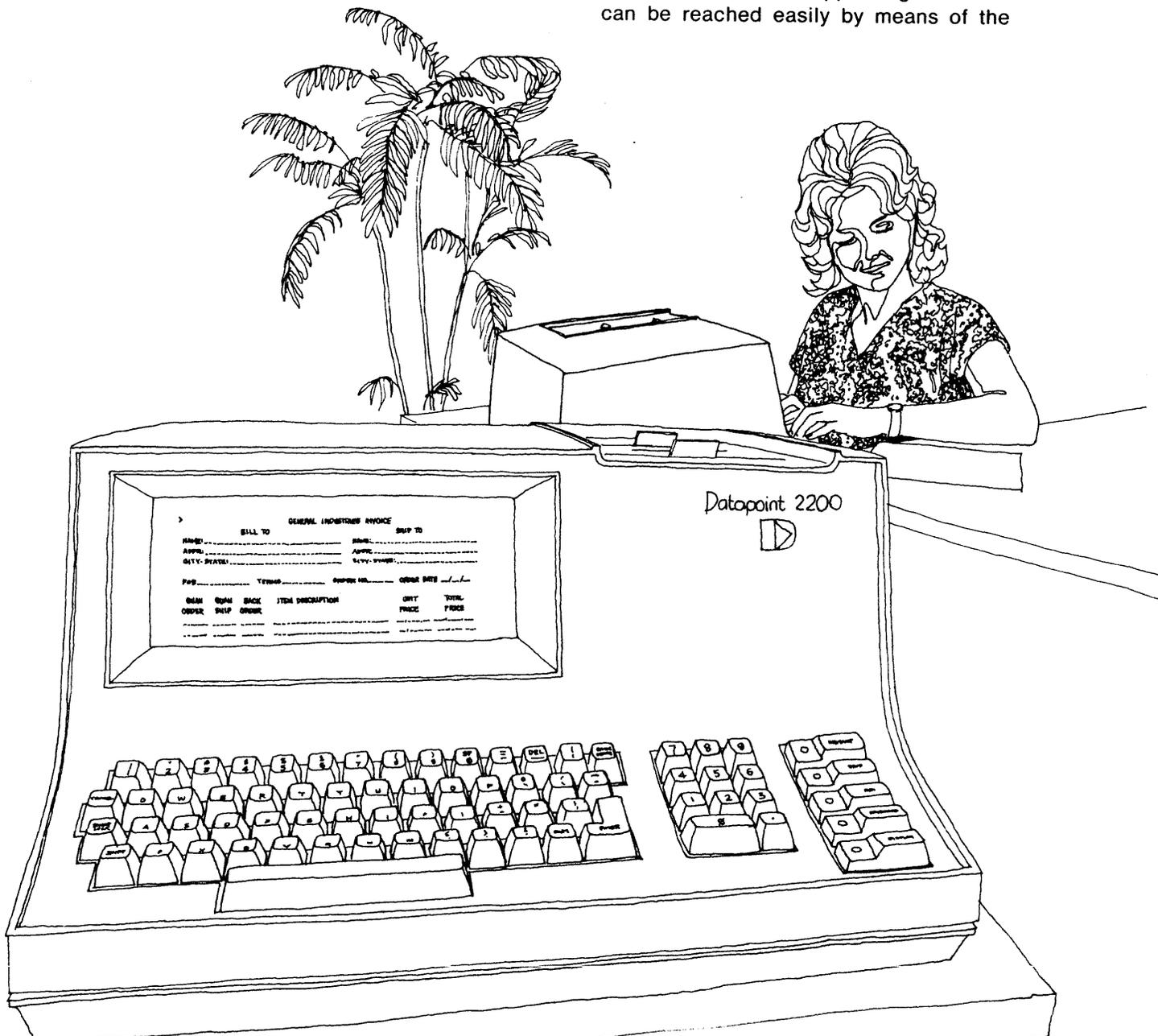
Much time can be saved by incorporating all or part of these time-proven utilities into a larger program.

Although many utilities are short and

require a larger program (such as subroutines), many are large and complex and capable of independent operation (such as SORT).

GENERAL PURPOSE EDITOR

The General Purpose Editor (GEDIT) facilitates the generation and updating (or correction) of any type of program or data file on cassette or disk. Using the CRT as a work area, the user may view his file and, as long as the data appears on the twelve line screen, he may modify, delete or rearrange it. Data in the file not appearing on the screen can be reached easily by means of the



'FIND' or 'LOCATE' commands which search for a specified character string.

As changes are made, the updated text is written into a scratch file and, when all corrections have been completed, the scratch file is copied back to the original data file.

The editor has an extensive set of commands which make file updating a fast and simple task. A pointer on the screen indicates the line of data to be operated on by the command.

DELETE - deletes a line from the screen

INSERT - creates a blank line on the screen by rolling up the lines above the pointed line

COPY - copies the pointed line to the bottom of the screen

MODIFY - replaces specified text (compressing or expanding the line as necessary)

MODIFY - inserts text after specified text (expanding the line)

MODIFY - appends text after the specified character string

SCRATCH - deletes multiple lines from the screen (upward)

FIND - searches the file for matching text

TAB - sets tab stops for entering text

EOF - displays the whole file on the screen

LOCATE - searches the file for matching text

SB - deletes multiple lines from the screen (downward)

GEDIT is available in a cassette version for the stand-alone Datapoint processors and as a standard command of the Disk Operating System.

Files created by GEDIT can be read by most standard Datapoint software. It is the basic means of creating assembly language source files, DATABUS program files and SCRIBE text files. The DATABUS 'write-edit' format is available so that 80 character data records may be created for input to the

user's DATABUS or terminal emulation program.

To the DOS user, a line-number editor, BLOKEDIT, is also available. This editor, by means of an edit-file, allows the user to rearrange the lines within a file and to merge lines or groups of lines from several files into a new file. New lines may also be typed directly into the edit-file for inclusion in the resultant new file.

For the SCRIBE text processing user, GEDIT provides the primary input system. In 'text' mode, GEDIT provides powerful free-form input control including automatic whole-word wrap at end of line. During modifications which expand a line beyond bounds, an automatic line insert followed by a whole word wrap occurs.

General Purpose Editor

GEDIT - Cassette Editor

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

General Purpose Editor GEDIT provides complete text file processing for the cassette system. It is the basic requirements for producing files in SCRIBE, the assemblers, and compilers. Many multi-file tapes and disks contain this program - such as the DATABUS series as an integral part of the release.

DOS General Purpose Editor

DOSGEDIT - DOS Editor

Equipment Required: 16K Processor, Any Disk

Optional Equipment: None

Support Software: Appropriate DOS

This editor provides all the features found in GEDIT for cassette but processes disk files. The files produced by this editor are completely compatible with the other file processing programs such as the various programming languages, communications processors and utilities.

INPUT-OUTPUT ROUTINES

Users who are creating application programs in assembly language will find these commonly used routines a great timesaving aid. These routines are generally available in source and object code with heavily commented listings. They are written for general usage but, at the same time, modular enough to be easily tailored to exactly conform to a user's specification.

General Disk Drive Routines in Assembly Language

DDRIVE

Equipment Required: 4K Processor, 9350 Disk

Optional Equipment: None

Support Software: User-written Assembly Language Program

This package is useful for those desiring to construct their own disk routines in assembler language. Caution must be exercised since this provides access to disk routines without the protection of the disk operating system. These systems are only valuable in constructing programs for test, or check out, special diagnostic routines and other such applications.

7 and 9 Track Tape Drive Routines in Assembly Language

TDRIVE

Equipment Required: 4K Processor, 7 or 9 Track Mag Tape

Optional Equipment: None

Support Software: User-written Assembly Language Program

This routine provides a source file for operating 7 or 9 track magnetic tape through a user supplied assembler language program. Caution must be exercised since these routines access to the tape without the protection of the appropriate operating system.

Servo Printer Driver Routines in Assembly Language

V1SERVO

Equipment Required: 4K Processor, Servo Printer

Optional Equipment: None

Support Software: User-written Assembly Language Program

V1SERVO provides a compact non-interrupt driven servo routine suitable for use when space is restricted or the processor is a Version 1 2200.

Selectric Typewriter Driver in Assembly Language

TYPE

Equipment Required: 4K Processor, 701 Selectric Typewriter and Interface

Optional Equipment: None

Support Software: User-written Assembly Language Program

This driver includes code conversions and other necessary processing to enable standard ASCII strings to be printed by a 701 Selectric typewriter using the Datapoint interface.

RAM Display Character Set Generator

CHARGEN

Equipment Required: Any 8K Processor with RAM Display Option (standard with Diskette 1100 and 5500)

Optional Equipment: None

Support Software: None

This program loads the random access memory screen display option with the standard ASCII character set. In most instances, the user will find RCOPY and RBOOT more appropriate programs when using the RAM screen display since they will automatically convert the loader of other standard software to initialize the RAM screen display upon restart. These programs are generally included in software for use on the Diskette 1100 and 5500.

String Print Routine in Assembly Language

PRINTS

Equipment Required: 8K Processor, Local Printer
or Communications Adaptor
Remote Printer

Optional Equipment: None

Support Software: User-written Assembly
Language Program

Prints ASCII strings to a Local or Remote printer.

Servo Printer Driver Routine

SERVO

Equipment Required: 4K Processor, Servo Printer

Optional Equipment: None

Support Software: User-written Assembly
Language Program

SERVO is a complex bi-directional printing routine.
It is interrupt driven and provides over-lapped
printing. Users with space constraints should
consider program V1SERVO.

Cassette Interrupt Drivers

CID

Equipment Required: 4K Processor

Optional Equipment: None

Support Software: User-written Assembly
Program

This assembly language system can be
incorporated in a user-supplied assembly language
program to produce cassette drivers with a
multi-tasking foreground interrupt system. With
this system the user who operates only with
cassettes may schedule his foreground tasks as
easily as the user with a DOS.

MATH ROUTINES

Most business programs require fixed or floating decimal point arithmetic. When these programs are to be written in assembly language, the availability of time-proven and flexible routines spare the programmer from the time-consuming development task. Additionally, several of these routines form the basis of the arithmetic capability of Datapoint high-level programming languages.

Floating Point Desk Calculator Program

DATAALC

Equipment Required: 8K Cassette-based Processor

Optional Equipment: None

Support Software: None

This provides a convenient method for utilization of an 8K (or more) Datapoint processor as a desk calculator with six significant digits of accuracy. DATAALC provides all the transcendental and floating point functions, along with significant program definitions. With this routine, many program steps may be defined, variables initialized and processes executed in a manner similar to programmable calculators. The user with a 16K memory processor may find the cassette or disk BASIC more appropriate.

Twelve Digit Floating Point Package

FLOAT12

Equipment Required: 12K Processor

Optional Equipment: None

Support Software: User-written Assembly Language Program

This is the same system as DATAALC except that it requires a 12K processor and provides 12 significant digits of accuracy rather than the 6 significant digits of DATAALC.

Floating Point Subroutine Package

FLOATRAN

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: User-written Assembly Language Program

FLOATRAN offers the user ASCII to floating point, floating point to ASCII, arithmetic and transcendental function calculations in one compact package. FLOATRAN is supplied as an assembly language package ready for incorporation in user supplied assembly language systems.

String Math Subroutine Package

STATH

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: User-written Assembly Language Program

STATH provides the string arithmetic capability used in all DATABUS systems. STATH is an assembly language routine for use in user supplied assembly language systems. Standard string arithmetic operations are provided such as add, subtract, multiply, divide, and move.

Short String Math Subroutine Package

SSTATH

Equipment Required: 16K Processor

Optional Equipment: None

Support Software: User Assembly Language Program and appropriate DOS

SSTATH was developed for DATASHARE in order to provide a smaller and more easily utilized arithmetic package. It is now available for users to operate within their own assembler language programs. Because of its original intent it is oriented toward operating in disk system environments.

SECTION 6 COMMUNICATIONS

Both the design and applications of the Datapoint family are heavily communications-oriented. To meet the need for easy-to-implement communications software, Datapoint offers a comprehensive line of proven and efficient packages.

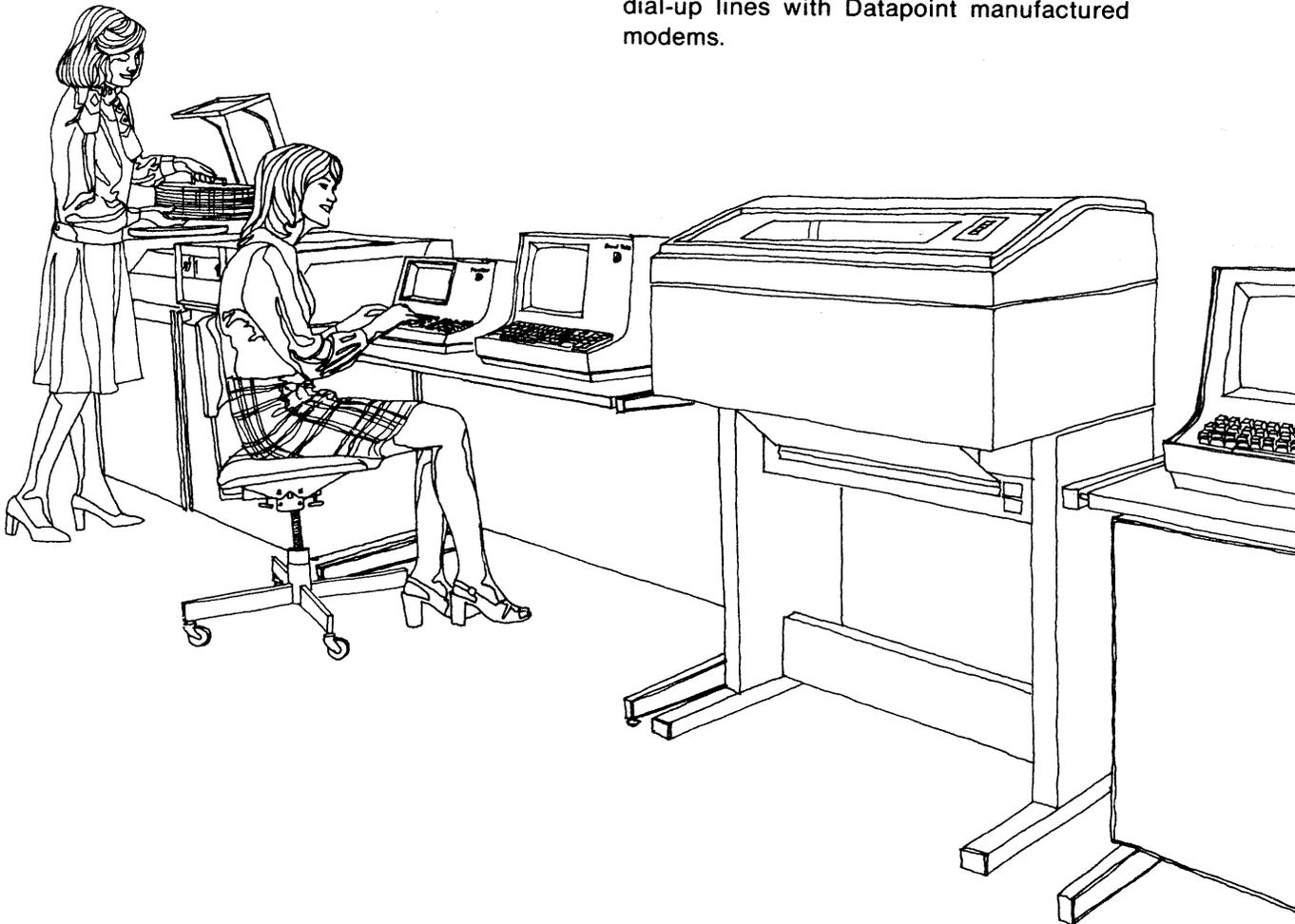
The reader will note that much foresight and a parallel approach has been brought to these packages. For example, the operation of the IBM 2780 and 3780 emulators are practically identical, eliminating operator retraining for users who wish to use both emulators in their system. And, more importantly, the majority of the packages all use the standard Datapoint file format, meaning that no special programming

considerations are generally required to use a variety of communications packages on the data files.

Part of the flexibility lies in the fact that all of Datapoint's Communications Adaptors are completely programmable. For more information on these adaptors the reader is encouraged to consult the Datapoint Equipment Catalog.

DATAPOLL

DATAPOLL is a collection of operator oriented, compatible programs which allows highly efficient data communications between Datapoint computers. DATAPOLL operates at 1200 baud, asynchronous, full duplex using dial-up lines with Datapoint manufactured modems.



Programs for remote and central sites provide for auto-answer and auto-dial of a predesignated (user-entered) list of phone numbers. Datafiles created by DATAFORM or DATABUS languages may thus be collected at a central point or, conversely, distributed to remote sites.

Error checking is completely automatic for all programs utilizing a cyclic redundancy checking (CRCC) plus other error algorithms. Record counting and tagging is automatic. A sophisticated line control facilitates efficient use of forward and reverse channels. Throughput achievable with DATAPOLL is approximately 118 characters per second, which is higher than many systems using higher-speed synchronous techniques.

DATAPOLL Cassette Utility Program

DPCUP

Equipment Required: 8K Processor, 9402
Communications Adaptor

Optional Equipment: None

Support Software: Appropriate
DATAPOLL Package in
complementary Terminal

To be released

DPCUP provides the master station control program when using the DATAPOLL communications system. Residing in an 8K 1100 or 2200 processor, DPCUP accomplishes pooling of remote station data onto a local cassette as well as distributing from a local cassette to remote stations. When more data is expected than can be stored on a cassette, other DATAPOLL systems utilizing 9 track tape or disk should be considered.

DATAPOLL Automatic Spooling Program

DPASP

Equipment Required: 8K Processor, 9402
Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DATAPOLL Package
in complementary Terminal

To be released

DPASP is the program to be used in the remote station when the data from the remote station will be transmitted to a master site using any of the first three master programs specified above. DPASP automatically transmits data from the remote to the master site as well as distributes data back from the master to the remote site. It is completely controlled by the master station.

DATAPOLL Data Distribution Program

DPDDP

Equipment Required: 12K Processor, 9402
Communications Adaptor

Optional Equipment: 9 or 7 Track Mag Tape

Support Software: Appropriate DATAPOLL Package
in complementary Terminal

To be released

DPDDP is the master station system utilized when data is to be distributed from a local master station using 7 or 9 track tape storage to remote Datapoint sites. Due to the large buffers required for the 7 and 9 track tape, this program will only send or distribute data to remote sites. When receiving data from remote sites to a master station using 7 or 9 track magnetic tape mass storage, DPDCP must be used. These two programs will generally be used as a pair.

DATAPOLL Data Collection Program

DPDCP

Equipment Required: 12K Processor, 9402
Communications Adaptor

Optional Equipment: 7 or 9 Track Magnetic Tape

Support Software: Appropriate DATAPOLL Package
in complementary Terminal

To be released

DPDCP is a master station system that collects remote station data onto a local master 7 or 9 track tape. This system operates in a 12K processor, but because of the large buffers required for the magnetic tape, a separate program DPDDP must be utilized when distributing processed data from the 9 track or 7 track system back to remote sites.

DATAPOLL Disk Spooling Program

DPDSP

Equipment Required: 16K Processor, Disk, 9402
Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: Appropriate DOS and
appropriate DATAPOLL Package
in complementary Terminal

To be released

DPDSP utilizes a disk instead of cassette for mass storage. Distribution and collection of data are automatically provided by DPDSP in its interface with the master station.

DATAPOLL Disk Master Program

DPDMP

Equipment Required: 16K Processor, Disk, 9402
Communications Adaptor

Optional Equipment: None

Support Software: Appropriate DOS and
appropriate DATAPOLL Package
in complementary Terminal

To be released

DATAPOLL disk master program DPDMP, provides a master station control for pooling or distributing data to remote stations when the master station is equipped with a disk. When using this system, however, only disk files may be received or sent. The type of master station, however, does not affect equipment configuration of remote sites.

EMULATORS

IBM 2780 Emulator

The Datapoint 2780 emulator package is compatible with the IBM 2780. The IBM 2780 utilizes the Binary Synchronous Communications discipline and is available in four different models. Communication is half-duplex synchronous at 4800, 2400, 2000, or 1200 bits/second in EBCDIC or ASCII. The IBM 2780 is composed of a controller, card reader, card punch, and printer. The Datapoint emulator requires only a 12K 2200, a synchronous communications adaptor, and any one of the Datapoint 2200 series printers. An optional card reader or nine channel magnetic tape can be attached. The Datapoint 2780 Emulator features high speed batch input and compatibility with most IBM computers, as well as other manufacturers. During operation, the large system 360 or 370 will not distinguish any difference between the IBM 2780 and the Datapoint emulator, although it is not necessarily achieved on a component-for-component replacement basis.

The 2780 Emulator can operate in the following modes:

- Off-line list to printer
- Receive to printer only
- Receive to punch only
- Transmit
- Transmit transparent

Unlike the IBM 2780 which must be configured at installation time, the 2780 Emulator can be easily reconfigured at operation time to switch incoming data to the printer, cassette, or to the display screen. This feature permits off-line printing and reduction of line time; cassette or 9-track systems can accept data at full line speed.

Compatibility with the Datapoint Tape formats permits the transmission of files created by any Datapoint system such as the text editor, DATAFORM, BASIC, SCRIBE, RPG II, the DATABUS languages or files created by Disk Operating System commands.

IBM 2780 Emulator for Cassette and Printer

EM2780A

Equipment Required: 8K Processor, 9404
Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: None

EM2780A provides 2780 terminal emulation for use with an 8K processor and synchronous communications adaptor. Support is provided for cassette and printer with the printer output representing the normal output media and the cassette substituting for printer, card reader or card punch. Typical applications with this EM2780A involve preparation of data files using DATAFORM (or any Datapoint file) and subsequent transmission of these data files. Receipt of printed output could come to cassette, which will operate during reception at the maximum speed of the line printers, thus reducing line changes.

IBM 2780 Emulator for Cassette, Printer, 9-Track Mag. Tape, Card Reader

EM2780B

Equipment Required: 12K Processor, 9404
Communications Adaptor

Optional Equipment: Local or Servo Printer,
9-Track Mag. Tape, Card
Reader

Support Software: None

EM2780B, the IBM 2780 emulator for cassette, printer, 9 track tape and card reader, operates in a 12K 2200 (or greater) with a synchronous communications adaptor. Full terminal emulation is provided with the card reader and card punch capable of being simulated either by the cassette or the 9 track tape. In addition, a Datapoint card reader can operate as the system card reader. Printer output is also provided with any of the Datapoint printers.

IBM 2780 Emulator for Cassette, Printer, 9-Track Mag. Tape, Card Reader, Disk

EM2780C

Equipment Required: 16K Processor, Disk, 9404 Communications Adaptor

Optional Equipment: Local or Servo Printer, 9-Track Tape, Card Reader

Support Software: Appropriate DOS

EM2780C, the emulator for cassette, printer, 9 track tape, card reader and disk, requires a 16K 2200 operating under DOS or a Diskete 1100. This system operates identically to the aforementioned 2780 emulator packages except that it additionally provides the capability of replacing card reader, card punch or printer facilities with assigned disk files. This system, in addition to operating as a remote batch terminal (sending DATAFORM generated cassette or disk files as well as receiving printer files), can operate as 9 track tape to 9 track tape, 9 track tape to disk, disk to disk etc. communications links between Datapoint processor pairs.

IBM 2780 Emulator Diagnostic Trace

EM2780T

Equipment Required: 8K Processor, 9404 Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: EM2780A, EM2780B, EM2780C, or EM2780D

IBM 2780 emulator diagnostic trace, EM2780T, provides a local history of both transmission paths when operating with the 2780 emulators listed above. The entire history (all characters transmitted in both directions whether accurate or inaccurate according to the discipline) are printed on a local or servo printer. Results of inspection indicate difficulties in modems, in lines or even the central computer.

IBM 2780 Emulator for Card Reader, Printer

EM2780D

Equipment Required: 8K Processor, Card Reader, Local or Servo Printer, 2200, 9404 Communications Adaptor

Optional Equipment: None

Support Software: None

EM2780D is a special version of the 2780 terminal emulator intended to specifically support only the card reader and printer when used in an 8K processor. EM2780D provides two services: transmission from the Datapoint card reader and reception to the local or servo printer.

IBM 3780

The IBM 3780 Data Transmission Terminal is a remote input/output device which can be connected to a central CPU via telephone lines. The 3780 operates in half duplex mode via appropriate modems over common carrier or equivalent privately owned facilities. The 3780 can be used for remote job entry to a computer or for communication with another IBM 3780.

The IBM 3780 uses the Binary Synchronous Communications (BSC) line discipline with either the EBCDIC or ASCII transmission code. This transmission method is a general purpose line control discipline for executing half-duplex, digital, serial, synchronous (by bit and character) communication between two or more stations on point to point or multipoint communication lines. The line control characters control the contention for the line, transmission of data, and termination of transmission.

A 16 bit cyclic redundancy check character is accumulated serially (by bit) on all data transmitted and received. For correct transmission of a record, the redundancy accumulation must match at both ends of the communications line or retransmission is automatically initiated. Message formats are rigidly screened thru the synchronous line discipline so that communication is orderly and accurate. All messages that are transmitted and received are counted odd-even-odd-even etc. by the transmitting and receiving side. The counts must match at the end of each message or retransmission is automatically initiated.

The following IBM publications describe in detail the line discipline and the

functional characteristics peculiar to the IBM 3780 terminal:

GA27-3004 General Information/Binary Synchronous Communications

GA27-3013 Component Description: IBM 3780 Data Transmission Terminal

IBM 3780 Emulator

EM3780B

Equipment Required: 12K Processor, 9404 Communications Adaptor

Optional Equipment: 9-Track Tape, Local or Servo Printer

Support Software: None

EM3780B is a program identical to the IBM 2780B except for the use of 3780 discipline. This discipline offers the increased efficiency of compressed data.

IBM 3780 Emulator

EM3780C

Equipment Required: 16K Processor, 9404 Communications Adaptor, Disk

Optional Equipment: Card Reader, Mag. Tape, Local or Servo Printer

Support Software: Any Disk Operating System

Offers identical performance, in its peripheral support, to that of the IBM EM2780C described previously.

IBM 3780 Emulator Diagnostic Trace

EM3780T

Equipment Required: 1K Processor, 9404 Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: EM3780B or EM3780C

Performs identically to that of the EM2780T.

IBM 360/20 HASP

Datapoint's emulator acts like an IBM 360 Model 20 BSC HASP/ASP remote workstation as defined in IBM publication 360D-05.1.014. The emulator operates only in conjunction with a Datapoint processor and a central 360/370 system operating under HASP or the equivalent. It cannot be used for 2200 to 2200 communications. Datapoint's emulator will not allow the execution of IBM 360 Model 20 programs on a Datapoint 2200 although the user with a Datapoint disk system can use other Datapoint software packages such as BASIC, RPG II, DATASHARE, SCRIBE, DATAFORM, EDITOR, etc.

HASP

The HASP system is an automatic spooling, priority scheduling system which, while operating in conjunction with IBM 360 or 370 operating systems, operates an unlimited number of peripheral devices simultaneously with normal job execution, to perform the functions normally associated with off line support computers. Included in HASP is a Remote Job Entry feature which can operate, via several classes of telephone lines, peripheral devices located remotely from the central computer complex.

Through the use of the HASP Remote Job Entry feature, a user located perhaps hundreds of miles from the central computer complex, can utilize the capabilities of that installation much as if the central system were located locally. Although a variety of terminals can be controlled by HASP, this manual discusses only the use of a system 360 model 20 with a binary synchronous adaptor used as a remote multi-leaving HASP workstation.

HASP Multi-Leaving Workstations

A special program, referred to in HASP documentation as HASP/RMTM20, was written for the IBM 360 Model 20 BSC. This program enables the 360/20 to function as a HASP multi-leaving workstation. As a HASP workstation, the 360/20 usually is equipped with a card reader, line printer, and console. A card punch is available but is not widely used. When the 360/20 is operating as a HASP workstation, it can be considered a logical extension of the central HASP system. It has the capability of transmitting jobs from the card reader to the central site, receiving output from the central site to the printer,

transmitting and receiving messages from the console to the central console.

Multi-leaving is an advanced communications technique which provides for simultaneous operation of all devices on a remote terminal workstation. In lay terms, multi-leaving can be defined as the fully synchronized, pseudo-simultaneous, bi-directional transmission of a variable number of data streams between two computers utilizing binary synchronous communications facilities. Thus, a user located at a remote site, can be transmitting a file to the central site, receiving reports from the central site to the remote printer, and exchanging console messages with the central site, all interweaved so as to appear to be simultaneous.

Datapoint 360/20 Emulator

Datapoint's emulator for the IBM 360/20 BSC HASP multi-leaving workstation is a program written to be run on most Datapoint processors. The emulator is meant to be plug-to-plug compatible with an existing IBM 360/20 BSC remote multi-leaving workstation communicating with HASP or the equivalent. The emulator is self-contained outside of the modem, so the point of replacement is the connection between the modem and the terminal. The goal of the emulator is to be completely compatible with the HASP multi-leaving communications technique used to communicate between a HASP central site and a remote intelligent terminal.

Some special features have been incorporated into Datapoint's emulator which are not available on an IBM model 20 workstation. The emulator can be configured so that cassettes, 9 track mag tape, or disk can be used in place of a card reader or printer, and the system communicating with the emulator will be unaware of any substitution made. All records which are read or written to cassette or disk by the emulator are compatible with other Datapoint software. The console can also be configured to be either the CRT screen or the Teletype printer. When the CRT screen is used, it's possible to log all console messages to a cassette or disk which can later be printed off-line to provide a hard-copy of all communications activity.

IBM 360/20 HASP Interleaving Workstation

HASP20

Equipment Required: 12K Processor (16K if disk used), 9404 Communications Adaptor

Optional Equipment: Local or Servo Printer, Mag. Tape, Card Reader, Disk

Support Software: Appropriate DOS

This provides total terminal emulation of the IBM360/20 and the HASP workstation environment. The single tape, HASP20, serves both 12 and 16K processors with the 12K processor serving all peripherals other than disk and the 16K processor required if the disk is to be utilized. Configuration is automatic with both features being provided from this single tape.

UNITERM

UNITERM is a Universal Terminal System which handles communications in a teletype discipline at baud rates up to 1200 baud and can utilize most Datapoint peripherals on or off line. Due to the variety of 1200 baud half-duplex dial-up disciplines, UNITERM only operates on a full-duplex circuit at 1200 baud (see UNITRX for other 1200 baud operations).

Uniterm versions support a variety of peripheral devices. On line it converts their discipline to behave in the manner of a punched paper tape system; while off line it serves as a useful media converter such as card to cassette, cassette to 7 or 9 track, card to printer, etc. It will replace a conversational remote job entry or remote access instant response terminal which operates in a teletype discipline. Communication options include internal or external modem, selectable baud rates, full or half duplex (echo on or off), and automatic telephone dialing and answering. Keyboard options include teletype or upper-lower case. Any or all of the options may be configured to be executed automatically when the program is loaded.

One version, UNITERM2, requires a 12K Datapoint 2200 and has drivers implemented for cassette tapes, local printer, asynchronous communications adaptor, seven or nine track industry compatible magnetic tape, and a card reader. UNITERM3 requires an 8K processor and contains drivers for cassette tapes, local printer, and asynchronous communications adaptor.

Any device may be enabled for on or off line operation, and more than one device

may be enabled simultaneously. In UNITERM2, the user may read from one device (cassette tape, magnetic tape, card reader) and write to another device (cassette tape, magnetic tape) simultaneously. However, it cannot read from or write to more than one device simultaneously.

In both UNITERM versions, the local printer may be enabled at any time, and coincident with other devices also enabled.

Cassette tapes are written in standard Datapoint tape format, using either Sequential or Write-Edit records. Magnetic tapes are written in IBM (and, therefore, DATABUS 3) compatible format in ASCII, EBCDIC, or BCD. Tape features include read and display, reverse read and display, rewind, prep, read and write.

The card reader driver reads cards punched in IBM compatible Hollerith Punch Code. The punched codes are converted from Hollerith to ASCII and trailing blanks are deleted when they are read.

Expanded Teletype Terminal Emulator

UNITERM2

Equipment Required: 12K Processor, 9400
Communications Adaptor

Optional Equipment: 9-Track Tape, Card Reader
Local or Servo Printer

Support Software: None

Expanded teletype terminal emulator UNITERM2 requires a 12K processor but provides additional support of 9 track magnetic tape in either local or remote mode and with either EBCDIC or ASCII format on the 9 track tape. Card readers and local printers are also supported. A complete emulation conversion in the operating discipline of these other peripherals are provided making them appear to be identical to the X-ON, X-OFF paper tape peripherals normally attached to teletype terminals.

Teletype Terminal Emulator

UNITERM3

Equipment Required: 8K Processor, 9400
Communications Adaptor.
Appropriate Modem

Optional Equipment: Local or Servo Printer

Support Software: None

Teletype emulator UNITERM3 provides emulation of teletype ASR equipment with ASCII discipline. An 8K processor is required and support is provided for cassettes and local or servo printer. The discipline supported is that which is utilized by most time sharing services in the 110, 300 or 600 baud discipline involving XON, XOFF tape control.

UNITRX

UNITRX is a Terminal Emulator which handles communications over a Datapoint 202 Modem (9402) in half duplex at baud rates up to 1200 baud. It will replace a conversational remote job entry or remote access instant response terminal which operates in the same discipline. UNITRX2 also contains drivers for cassette tapes, local or servo printer, seven or nine track magnetic tape, and card reader.

Universal Terminal Emulator

UNITRX1

Equipment Required: 8K Processor, 9402
Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: None

UNITRX1 is a teletype style CRT emulator designed to replace CRT's operating at 1200 baud half duplex with support provided only for the internal cassettes and local or servo printer. Operation is similar to UNITERM3.

Universal Terminal Emulator

UNITRX2

Equipment Required: 16K Processor, 9402
Communications Adaptor

Optional Equipment: 9 Track Mag. Tape, Card
Reader

Support Software: None

UNITRX2 the universal terminal emulator with 1200 baud, 202 modems, requires 16K but supports the 9 track magnetic tape (in EBCDIC, BCD or ASCII codes) and the card reader. Operation with the peripherals is similar to UNITERM2.

IBM 2741 Emulator

UNI2741A is an IBM 2741 Terminal Emulator. Communications are over a Datapoint 103 Modem (9401) in half duplex at 134 baud. UNI2741A contains drivers for cassette tapes and local or servo printer. Communications options include internal or external modem, and automatic telephone dialing and answering.

IBM 2741 Emulator

UNI2741A

Equipment Required: 8K Processor, 9401
Communications Adaptor

Optional Equipment: Local or Servo Printer

Support Software: None

The IBM 2741 emulator requires an 8K processor and supports CRT, keyboard, internal cassettes and local printer.

UNIVAC DCT-2000 Emulator

The Univac DCT-2000 terminal is a medium speed communications device designed to interface with the Univac computers and other DCT-2000 terminals. A typical Univac DCT-2000 configuration includes a card reader, line printer, controller and an optional card punch. The Univac unit is hard-wired and can perform no other functions beyond a limited off-line printing capability.

The emulator of the DCT-2000 constitutes a replacement for the DCT-2000 and contains a great deal more flexibility. An 8K processor, a 9404 synchronous communications adaptor, any local printer, and a 9500 card reader (optional) are used by the Datapoint emulator.

The Datapoint emulator provides all the DCT-2000 features with a number of their extra-cost options. Error detection, short blocks, unattended answering and off-line listings are standard features of the Datapoint emulator. Another advantage of the Datapoint emulator is that the internal cassettes offer a more convenient storage medium than the cards offered on a DCT-2000, as well as faster communications line speed time. While the DCT-2000 allows no off-line operations except listing, the Datapoint 2200 replacement may be used as a powerful stand alone computer system.

The tapes are in standard Datapoint format and, therefore, are compatible with all Datapoint systems, including all other terminal emulators, High Level languages and Data Entry packages.

Univac DCT-2000 Terminal Emulator

DCT2000

Equipment Required: 12K Processor, 9404 or 9405
Communications Adaptor

Optional Equipment: Local Printer, Card Reader

Standard Datapoint format cassettes can be sent or received in lieu of the card equipment or printer output with this emulator. Datapoint Card Reader and Printer Support is also provided.

CDC 200 User Terminal Emulator

The CDC 200 User Terminal is used as a multiple-station party line or single-terminal remote job entry station usually for communication with Control Data Series 6000 series computers. The CDC 200 User Terminal is a conversational terminal with a display screen and keyboard. Batch job entry can be supported with an optional line printer and a card reader. Communications are half-duplex synchronous at rates of 2000, 2400, or 4800 bits/second and operates over standard voice-grade telephone facilities with a Bell 201 or another compatible modem. The Datapoint emulator of the 200 User Terminal requires only a 12K processor, a synchronous communications adaptor, any series printer, and an optional card reader. The emulator's capabilities include cassette support in addition to the line printer and card reader. Two versions of the emulator are available, a BCD version and an ASCII version.

The 200 User Terminal emulator provides complete emulation of the CDC 200 User Terminal with provisions for a card reader, line printer and the Datapoint keyboard and display screen. The communications discipline uses ASCII control codes and either BCD data or ASCII data as does the 200 User Terminal. Because the operation of the emulator is so similar to the 200 User Terminal, no special operator retraining is required.

In addition to the standard features being emulated, the emulator program offers several advantages not available with the CDC terminal itself.

First, card reader errors and illegal punches are checked locally and the operator can correct a single card without having to retransmit the entire card deck.

Secondly, the internal Datapoint computer can perform code conversion on 026 or 029 keypunch decks, thus eliminating the need for the large CDC 6000 computer performing this task.

Third, data may be entered, stored and transmitted via the cassette decks (when using the 12K program). Cards no longer need to be punched and loaded, the operator can type all data on the Datapoint in an off-line mode and record it on cassette for later transmission purposes. Line times can also be reduced because of the rapid rate of the cassettes. The user can economize by eliminating keypunch machines and reducing line costs. All Datapoint supplied software uses a compatible cassette file system.

CDC 200 UT Emulator

EM200A - ASCII Model

EM200B - BCD Model

Equipment Required: 12K Processor, 9404
Communications Adaptor

Optional Equipment: Local Printer, Card Reader

Support Software: None

EM200A supports the ASCII code and EM200B supports the BCD code. Select the needed emulator by the code transmission type.

Datapoint 3360 Terminal Emulator

EM3360 is a program to emulate the Datapoint Model Code 3502 Datapoint processor connected to a Datashare System. All functions of the 3502 are provided with the KEYBOARD and DISPLAY keys used as special function keys. However, of the 82 columns on the 3502 which may be used for display, the first two are suppressed by this emulator.

Datapoint Model Code 3502 Terminal Emulator

EM3360

Equipment Required: 4K Processor, 9402
Communications Adaptor

Optional Equipment: None

Support Software: DATASHARE

The primary use of this program is to permit Datapoint processors, which may be engaged in other processing at times, to connect to a Datapoint DATASHARE system as well. In addition, since the 3502's did not provide lower case characters, the 1100 replacement in this emulation provides the equivalent of an upper and lower case 3502.

MISCELLANEOUS COMMUNICATIONS PROGRAMS

Morse Code Transceiver

MORSE

Equipment Required: 8K Processor, 9400 or 9420
Communications Adaptor (not
a standard connection)

Optional Equipment: None

Support Software: None

This unique software package permits a Datapoint processor to send and receive Morse code. Keyboard characters are line buffered and translated to Morse. Incoming hand-sent characters from 3 to 60 wpm can be displayed with automatic adjustment for operator keying speed and weight. This package normally operates in conjunction with radio equipment with the communications adaptor being used for both signal detection and transmitter keying. It also can be used with the processor only for demonstration purposes. The Display key is used as a hand key.

Disk Communications Program

DISKCOM

Equipment Required: 16K Processor, 9402
Communications Adaptor,
Disk

Optional Equipment: None

Support Software: Disk Operating System

DISKCOM and NLNCOM4 (listed later), are programs operating with a unique discipline permitting Datapoint processor to processor communications with pooling from remote NLNCOM4 stations to a central DISKCOM station. These programs are primarily superceded by the DATAPOLL package. The primary use of DISKCOM is in supporting current networks operating under this discipline.

Cassette Communications Program

NLNCOM4

Equipment Required: 8K Processor, 9402
Communications Adaptor

Optional Equipment: None

Support Software: None

NLNCOM4 is a cassette communications program to be used with DISKCOM. DATAPOLL programs are not compatible with and have superceded the use of these programs in current installations. NLNCOM4 should be used only when adding to a network currently using this discipline.

Seven Track Communications Program

SEVENCOM

Equipment Required: 16K Processor, 7-Track Mag
Tape, 9402 Comm. Adaptor

Optional Equipment: None

Support Software: None

Primarily superceded by DATAPOLL. See
DISKCOM.

Nine Track Communications Program

NINECOMM

Equipment Required: 16K Processor, 9-Track Tape,
9402 Communications
Adaptor

Optional Equipment: None

Support Software: None

Primarily superceded by DATAPOLL. See
DISKCOM.

SECTION 7 DIAGNOSTICS

Test Programs

Datapoint Corporation produces a series of diagnostic programs that are available to both customers and the Datapoint Customer Service Organization. With the use of these diagnostics, the user has an effective means of recognizing hardware problems and the necessary steps toward correction.

These programs were written by expert assembly language programmers in close conjunction with the Datapoint design engineers using extensive test techniques to

isolate the problem area. These comprehensive tests are available for the processors, the peripheral devices within the units, and the external Datapoint peripheral devices. Aided by these diagnostics, the Customer Service Representative is able to locate a hardware problem and replace the faulty board or part in literally minutes.

Note: Many of these diagnostics provide data that can only be interpreted by a trained technician. Some diagnostics will erase data files and should be used with great caution.



PROCESSOR DIAGNOSTICS

Processor Tester

TSTPRO

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

Processor tester, TSTPRO, is a one-time processor tester which alone will verify the complete operation of the instruction set of the processor. With the addition of an oscilloscope, the type of errors can be determined from a chart in the TSTPRO manual.

Keyboard Tester

TSTKEY

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

TSTKEY provides a complete programmed keyboard test with step by step instructions. Terminals with other than standard ASCII character sets can use TSTKEY by modifying the code table within the program TSTKEY using the program FIX in the CTOS.

Display Tester

TSTDIS

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

TSTDIS provides an upper and lower case display of all characters on the screen of the Datapoint 2200, 1100, 5500 and indicates screen quality.

Cassette Tape Exerciser

EXRTAP

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

EXRTAP exercises the dual cassette tapes in a variety of manners. It has been superceded by TAPTIM.

Cassette Endurance and Timing Diagnostic

TAPTIM

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

TAPTIM is designed to provide long term endurance testing of cassette decks and yields a complete qualitative analysis of the internal timing of each deck. There are approximately 7 different timing aspects which can be tested independently and displayed on the screen. A successful test of a tape deck with this program should indicate complete compatibility with all other cassette decks which also successfully pass this test.

Memory and Tape Endurance Test

ENDURE

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

ENDURE provides an endurance test for determining long-term statistics of the operation of the cassette system. Continual reading, writing, backspacing, reading etc. proceeds on both decks individually throughout the entire cassette, providing a complete test of each deck in one half hour.

Hourly Memory Test

HRLYMENT

Equipment Required: 4K Processor

Optional Equipment: None

Support Software: None

HRLYMENT tests for bit dropout over long term memory inactivity. Whenever memory problems are suspected and the other three memory tests have been run without error, HRLYMENT should be run. This memory test requires several hours for a complete checkout of the machine under test.

Rotating Bit Memory Test

RBMTST

Equipment Required: 4K Processor

Optional Equipment: None

Support Software: None

RBMTST, rotating bit memory test, provides a different memory pattern than the pseudo random memory test. The memory pattern in RBMTST tests a phenomenon called "bit injection" and is an independent and different failure mode method than that tested by TSTMEM or MEMTST.

RAM Display Logic Test

RDLTST

Equipment Required: 8K Processor, RAM Display

Optional Equipment: None

Support Software: None

RDLTST is a random screen display logic tester to test the 9001 and 9002 options for adequate operation.

Pseudo Random Memory Test for Low Memory

MEMTST

Equipment Required: 4K Processor

Optional Equipment: None

Support Software: None

MEMTST memory tester provides pseudo random repetitious tests in low memory including the loader area.

Test for Processor, Cassettes, Display and Memory

TSTALL

Equipment Required: 8K Processor

Optional Equipment: None

Support Software: None

TSTALL provides a combination of tests for a complete shakedown of the 2200/1100 and automatically proceeds from one test to the other.

Pseudo-Random Memory Tester for High-Memory

TSTMEM

Equipment Required: 4K to 16K Processor

Optional Equipment: None

Support Software: None

TSTMEM provides memory testing of the 2200/1100 high memory. Since varieties of memory failures may require different techniques for memory test, this program and the following two programs, MEMTST and RBMTST should all be run in succession whenever memory problems are suspected; as a last resort, run HRYLMEMT. TSTMEM functions by executing repetitiously pseudo random patterns in high memory, above the loader.

PERIPHERAL DIAGNOSTICS

9401 Communications Adaptor Diagnostic

CCATST

Equipment Required: 8K Processor, 9401
Communications Adaptor

Optional Equipment: None

Support Software: None

9401 communications adaptor diagnostic tests thoroughly the 9401 communications adaptor and its extra signal pins. CCATST provides testing not only of the asynchronous communications but the additional control wires necessary to operate automatic dialing equipment externally.

9402 Modem Validation

COMVAL

Equipment Required: 8K Processor, 9402
Communications Adaptor

Optional Equipment: None

Support Software: None

COMVAL is an asynchronous adaptor test employing the 202 modem. COMVAL may be run as previously stated with a second 2200 and 202 modem.

Synchronous Communications Adaptor Diagnostic

TSTSCA

Equipment Required: 8K Processor, 9404
Communications Adaptor

Optional Equipment: None

Support Software: None

TSTSCA thoroughly tests the Datapoint synchronous adaptor, 9404. Required equipment is a second processor and a second 9404 to send and receive to the adaptor under test.

9404 Diagnostic Test

TST404

Equipment Required: 8K Processor, 9404
Communications Adaptor

Optional Equipment: None

Support Software: None

This 9404 diagnostic test tests the Datapoint 9404 communications adaptor in a loop back mode without requiring a second Datapoint processor.

Multiple Port Communications Adaptor Test

MPATEST

Equipment Required: 8K Processor, 9460 Multiport
Communications Adaptor

Optional Equipment: None

Support Software: None

MPATEST permits all 8 ports of the 9460 to be tested individually for proper status and proper character transmission both out and in. Special connectors are required (or jumper wires indicated in the Users Manual) for this program.

Parallel Interface Tester

PITEST

Equipment Required: 8K Processor, 9420 Parallel
Interface

Optional Equipment: None

Support Software: None

PITEST will thoroughly test a parallel interface. A special connector (described in the operating manual) is required.

Card Reader Test Program

CARDTST

Equipment Required: 8K Processor, Card Reader

Optional Equipment: None

Support Software: None

CARDTST provides a complete diagnostic test facility for the Datapoint card reader. Nine tests are provided in this package one of which requires a special deck of cards supplied with each Datapoint card reader when shipped from Datapoint.

Hourly Rotating Disk Buffer Memory Test

TSTDBMH

Equipment Required: 16K Processor, 9350 Disk

Optional Equipment: None

Support Software: None

TSTDBMH is a long term test designed to detect any weakness in the disk controller buffers. This test should be run in addition to the previous memory test, TSTDBM, whenever disk buffer memory problems are suspected.

Disk Controller Buffer Memory Test**TSTDBM**

Equipment Required: 16K Processor, 9350 Disk

Optional Equipment: None

Support Software: None

Disk controller buffer memory test, TSTDBM, is a pseudo random test of the 4 page buffer in a 9350 Cartridge disk controller. Similar to TSTMEM, a long term memory test should indicate any difficulties in the controller memory. This program should be operated in conjunction with the following memory test, TSTDBMH whenever disk buffer memory problems are suspected.

Flexible Disk Diagnostic**DSKCTST**

Equipment Required: 16K 2200 or 5500 Processor, 9380 Disk

Optional Equipment: None

Support Software: None

To be released

Flexible disk diagnostic, DSKCTST, is similar to TSTDSK in that it tests the entire controller and disk drives in a floppy disk console. This may be left to run for long periods of time to test its endurance capabilities.

Disk Exerciser**TSTDSK**

Equipment Required: 16K Processor, 9350 Disk

Optional Equipment: None

Support Software: None

TSTDSK provides a complete and long term endurance test of the entire disk and controller combination. Operation of this program requires a fresh disk since it will write on the whole disk cartridge.

Seven and Nine Track Tape Diagnostic**EXRIBM**

Equipment Required: 8K Processor, 7 or 9 Track Tape Transport

Optional Equipment: None

Support Software: None

EXRIBM provides an interpretive approach to diagnostics. This system will either automatically test the tape transports or provide the capability of establishing a sequence of deck events which are suspected of causing trouble. EXRIBM will execute these events over and over in sequence, if desired, or singly and record on the screen any difficulties encountered during those particular operations.

Cartridge Disk Surface Analyzer**SURFTSTA**

Equipment Required: 16K 2200 or 5500 Processor, 9350 Disk

Optional Equipment: None

Support Software: None

SURFTSTA is an extended test of new disk cartridges, used in the 9350, for surface problems and data loss.

Local or Remote Printer Tester**FOXER**

Equipment Required: 4K Processor, Local Printer

Optional Equipment: None

Support Software: None

FOXER provides a quick output on local or remote printers to verify proper operation of the printer.

Mass Storage Disk Diagnostic**DSKBTST**

Equipment Required: 16K 2200 or 5500 Processor, 9370 Disk

Optional Equipment: None

Support Software: None

To be released

Mass storage disk diagnostic, DSKBTST tests the 20 megabyte mass storage disk drive for both immediate performance and long term endurance.

Servo Printer Diagnostic**TSTSP**

Equipment Required: 8K Processor, Servo Printer

Optional Equipment: None

Support Software: None

TSTSP thoroughly tests all modes of operation of the servo printer including high speed slewing and those required head movements for plotting.

Line Printer Diagnostic

TSTPRT

Equipment Required: 8K Processor, 300 LPM
Printer

Optional Equipment: None

Support Software: None

TSTPRT tests the Datapoint 300 line per minute printer through all of its modes of operation and can be left to run for an extended time to test machine endurance.

9200 Singer Printer Mechanism Diagnostic

SINGER

Equipment Required: 8K Processor, Singer Printer

Optional Equipment: None

Support Software: None

SINGER tests the 9200 printer mechanism made by Singer-Frieden. Special diagnostics for this mechanism are provided in this package.

9200 Univac Printer Mechanism

TST22P

Equipment Required: 8K Processor, 9200 Univac
Printer

Optional Equipment: None

Support Software: None

TST22P is a local printer tester designed for the 9200 made by UNIVAC.

APPENDIX

DATAPoint SOFTWARE & DOCUMENTATION SCHEDULE

EFFECTIVE DATE: 2-75

PLEASE NOTE: WHEN ORDERING FROM THIS SCHEDULE, PLEASE INCLUDE THE MODEL CODE.

EXPLANATION OF CODES: 20000-39999 = PUBLIC SOFTWARE RELEASES
40000-49999 = PRIVATE SOFTWARE RELEASES
(PROPRIETARY INFORMATION - PRIOR AGREEMENT
REQUIRED)
50000-69999 = PUBLIC LISTINGS AND USERS GUIDES
70000-79999 = PRIVATE LISTINGS AND USERS GUIDES
(PROPRIETARY INFORMATION - PRIOR AGREEMENT
REQUIRED)

SUFFIX CODES: + = VERSION SUPERCEDED BY NEW RELEASE. LISTED
ONLY FOR CONVENIENCE OF PRESENT USERS
! = NEW RELEASE

DATAPOINT CORPORATION
SOFTWARE & DOCUMENTATION SCHEDULE

2-75

| SYMBOL | RELEASE DATE | DESCRIPTION | LIST | UG | MODEL CODES | | SO | MEDIA |
|---------------------------------------|--------------|---|-------|-------|--------------------|-------|---------------------|-------|
| | | | | | LGO | OBJ | | |
| <u>ABBREVIATIONS</u> | | | | | | | | |
| | | | | | LIST = LISTING | | C = CASSETTE | |
| | | | | | UG = USERS GUIDE | | D = DISKETTE | |
| | | | | | LGO = LGO MEDIA | | CD = CARTRIDGE DISK | |
| | | | | | OBJ = OBJECT MEDIA | | | |
| | | | | | SO = SOURCE MEDIA | | | |
| <u>CASSETTE TAPE OPERATING SYSTEM</u> | | | | | | | | |
| <u>System Generation</u> | | | | | | | | |
| CTOS 3.2 | 10/ 2/72 | Cassette Tape Operating System | 70000 | 50000 | 20000 | | 40000 | C |
| CTOSPGS 4.4 | 7/25/74 | Assembly Program Generation System With Utilities | | 50001 | 20001 | | | C |
| <u>System Compilers & Editors</u> | | | | | | | | |
| ASSEMBLER | | See ASSEMBLER Section | | | | | | |
| DATABUS | | Business Language, Databus 1 to 6 - See DATABUS Section | | | | | | |
| EDITOR | | See EDITOR Section | | | | | | |
| SCRIBE | | Text Processing Language - See SCRIBE Section | | | | | | |
| DATAFORM | | Data Entry Language - See DATAFORM Section | | | | | | |
| BASIC | | Interactive Language - See BASIC Section | | | | | | |
| RPG | | Business Language - See RPG Section | | | | | | |
| <u>System Utilities</u> | | | | | | | | |
| LISTER 2.3 | 8/ 9/73 | Cassette General Purpose Lister for Local Servo Printer, and Screen | 70021 | 50007 | 20023 | 20024 | 40021 | C |
| DEBUG 2.1 | 2/28/72 | Boot Block Resident Debugging Tool | 70022 | 50008 | | 20025 | 20025 | C |
| DUMP 1.1 | 5/ 4/71 | Memory to Tape Dump - Cassette | 70023 | 50009 | | 20026 | 20026 | C |
| FIX 2.1 | 11/ 8/71 | Object Cassette Tape Patcher | 70024 | 50010 | | 20027 | 20027 | C |
| RCOPY 1.3 | 12/17/74 | Expanded Cassette Tape Duplicating Program | 70025 | 50011 | 20028 | | 40025 | C |
| COPY 1.9 | 5/22/74 | Tape Duplicating Program | 70026 | 50012 | 20030 | 20031 | 40026 | C |
| CORDMP 1.2 | 2/ 7/74 | Boot Block Core Dump Configurator/Generator | 70027 | 50013 | 20032 | | 40027 | C |
| ICASORT 1.1 | 1/16/75 | Sorts Cassette Data Files | 70128 | 50123 | 20160 | | 40119 | C |
| <u>MAG TAPE OPERATING SYSTEM</u> | | | | | | | | |
| <u>System Generation</u> | | | | | | | | |
| MTOSGEN 2.6 | 3/17/73 | 9-Track Magnetic Tape Operating System Generation System | 70028 | 50014 | 20033 | | 40028 | C |
| <u>Utilities</u> | | | | | | | | |
| TDUMP 1.3 | 2/19/73 | 7 and 9-Track Tape Dump | 70030 | 50016 | | 20036 | 20036 | C |

DATAPOINT CORPORATION
SOFTWARE & DOCUMENTATION SCHEDULE

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| SYMBOL | RELEASE DATE | DESCRIPTION | LIST | UG | LGO | OBJ | SO | MEDIA |
|---------------------------------------|--------------|--|-------|----------------|-------|-------|-------|-------|
| <u>DISK OPERATING SYSTEM</u> | | | | | | | | |
| <u>System Generation</u> | | | | | | | | |
| DOSGEN 1.2 | 12/ 4/72 | Disk Operating System Generation System (DOS Systems Guide) | 70121 | 50017 50125 | 20037 | | | C |
| <u>System Compilers & Editors</u> | | | | | | | | |
| EDITOR | | See EDITOR Section | | | | | | |
| DATABUS | | Databus 7 - See DATABUS Section | | | | | | |
| DATASHARE | | See DATASHARE Section | | | | | | |
| ASSEMBLER | | DOS Assembler - See ASSEMBLER Section | | | | | | |
| BASIC | | DOS Basic - See BASIC Section | | | | | | |
| RPG | | Business Language - See RPG Section | | | | | | |
| SCRIBE | | Text Processing Language - See SCRIBE Section | | | | | | |
| DATAFORM | | Data Entry Language -See DATAFORM Section | | | | | | |
| <u>System Utilities</u> | | | | | | | | |
| BLOKEDIT 1.2 | 6/25/73 | Block Text Editor For DOS (Formerly TXFR 1.1) | 70036 | 50022 | | 20045 | 40036 | C |
| DOSLIST 1.2 | 2/ 7/74 | DOS Text File List Command For Screen and Datapoint Printer Output | 70037 | 50023 | | 20046 | 40037 | C |
| BACKUP 1.1 | 9/19/73 | DOS Disk Copy and De-Fragmentation Utility For Dual Disk | 70038 | 50024 | | 20047 | 40038 | C |
| CHAIN 2.1 | 1/28/74 | DOS Program Chaining Command | 70039 | 50025 | | 20048 | 40039 | C |
| CRCFIX 1.1 | 8/ 7/73 | Cyclic Redundancy Check Fixer (Repairs CRC Parity Errors on Disk Records) | 70040 | 50026 | 20049 | | 40040 | C |
| DDUMP 1.2 | 8/ 9/73 | DOS Dump Program (Visual Display of DOS Sectors) | 70041 | 50027 | 20050 | | 40041 | C |
| DOSFIX 1.2 | 12/21/72 | DOS Object File Patcher | 70042 | 50028 | | 20051 | 40042 | C |
| FILES 2.1 | 5/22/74 | DOS Sorted File Description List Command | 70043 | 50029 | | 20052 | 40043 | C |
| MINMOUT 1.2 | 2/22/74 | Cassette Utility DOS Commands | 70044 | 50030 | | 20053 | 40044 | C |
| REPAIR 1.1 | 6/20/73 | DOS Pack Repair Program (Automatic Repair of System Conflict Errors) | 70045 | 50031 | 20054 | | 40045 | C |
| RBOOTMAK 1.1 | 5/22/74 | Disk Bootstrap Generator | 70046 | 50032 | | 20055 | 20055 | C |
| SOBO 1.2 | 3/ 2/73 | DOS Source and Object Cassette Output Command | 70047 | 50033 | | 20056 | 20056 | C |
| SORT 3.1 | 11/15/74 | Disk Operating System Sort | | 50034 | | 20057 | | C |
| SYSLEEP 1.2 | 8/ 9/73 | DOS Pack Sleep For Saving Vital System File Data For Backup | 70048 | 50035 | | 20058 | 40048 | C |
| REFORMAT 1.3 | 10/30/74 | Reformat Utility Program | 70122 | 50118 | | 20154 | 40114 | C |
| INDEX 2.1 | 10/30/74 | Index Utility Program | 70123 | 50119 | | 20155 | 40115 | C |
| TAPE 1.4 | 4/10/74 | Magnetic Tape Utility Routine | 70101 | 50106 | 20137 | | 40101 | C |

DATAPOINT CORPORATION
SOFTWARE & DOCUMENTATION SCHEDULE

2-75

| SYMBOL | RELEASE DATE | DESCRIPTION | LIST | UG | LGO | OBJ | SO | MEDIA |
|--------------------------------|--------------|---|-------|------------------|-------|-------|-------|-------|
| <u>ASSEMBLERS</u> | | | | | | | | |
| ASM 4.6 | 7/25/74 | Cassette Assembler 4 | 70001 | 50002 | 20002 | 20003 | 40001 | C |
| +DOSASM4 2.1 | 4/25/73 | DOS Assembler 4 | 70032 | 50002 | | 20039 | 40032 | C |
| DOSASM5 2.1 | 1 /5/75 | DOS Assembler 5 | 70033 | 50019 | | 20040 | 40033 | C |
| <u>GENERAL PURPOSE EDITORS</u> | | | | | | | | |
| +GEDIT 1.8 | 7/ 9/73 | Cassette General Purpose Editor (Version 1 Machine Only) | 70017 | 50036 | 20019 | | 40017 | C |
| GEDIT 2.7 | 11/14/73 | Cassette General Purpose Editor | 70017 | 50005 | 20020 | | 40017 | C |
| DOSGEDIT 2.3 | 10/14/73 | DOS General Purpose Editor | 70035 | 50005 | | 20044 | 40035 | C |
| <u>SCRIBE</u> | | | | | | | | |
| +SCRIBE 1.4 | 5/22/74 | Text Processor For Cassette | 70019 | 50006 | 20021 | | 40019 | C |
| SCRIBE 2.3 | 5/22/74 | Text Processor For Cassette and Servo Printer | 70020 | 50006 | 20022 | | 40020 | C |
| DSCRIBE 1.3 | 5/22/74 | Text Processor For Disk Based Files | 70034 | 50006 | | 20043 | 40034 | C |
| DSSCRSYS 1.2 | 6/ 4/74 | Text Processor For Datashare | 70049 | 50006 | | 20059 | 40049 | C |
| <u>DATABUS</u> | | | | | | | | |
| <u>Databus 1</u> | | | | | | | | |
| DB1PGS 3.1 | 10/30/72 | Databus 1 Program Generation System | 70002 | 50003 | 20004 | | 40002 | C |
| DB1SYS 3.1 | 10/30/72 | Databus 1 Interpretive System | 70003 | 50003 | 20005 | | 40003 | C |
| <u>Databus 2</u> | | | | | | | | |
| +DB2PGS 3.1 | 10/30/72 | Databus 2 Program Generation System | 70005 | 50003 | 20007 | | 40005 | C |
| DB2PGS 4.2 | 8/29/73 | Databus 2 Program Generation System | 70006 | 50003 | 20008 | | 40006 | C |
| +DB2SYS 3.1 | 10/30/72 | Databus 2 Interpretive System | 70007 | 50003 | 20009 | | 40007 | C |
| DB2SYS 4.1 | 7/27/73 | Databus 2 Interpretive System Databus Simplified Users Guide | 70008 | 50003 (50004) | 20010 | | 40008 | C |
| <u>Databus 3</u> | | | | | | | | |
| DB3PGS 3.1 | 10/30/72 | Databus 3 Program Generation System | 70009 | 50003 | 20011 | | 40009 | C |
| DB3SYS 3.1 | 10/30/72 | Databus 3 Interpretive System for 9-Track | 70010 | 50003 | 20012 | | 40010 | C |
| DB3SYS7 4.1 | 10/30/72 | Databus 3 Interpretive System for 7-Track | 70011 | 50003 | 20013 | | 40011 | C |
| <u>Databus 4</u> | | | | | | | | |
| DB4PGS 3.1 | 10/30/72 | Databus 4 Program Generation System | 70012 | 50003 | 20014 | | 40012 | C |
| DB4SYS 3.1 | 10/30/72 | Databus 4 Interpretive System | 70013 | 50003 | 20015 | | 40013 | C |

DATAPOINT CORPORATION
SOFTWARE & DOCUMENTATION SCHEDULE

2-75

| SYMBOL | RELEASE DATE | DESCRIPTION | LIST | UG | LGO | OBJ | SO | MEDIA |
|------------------|--------------|--|-------|-------|-------|-------|-------|-------|
| <u>Databus 5</u> | | | | | | | | |
| DB5PGS 1.1 | 10/30/72 | Databus 5 Program Generation System | 70014 | 50003 | 20016 | | 40014 | C |
| DB5SYS 1.1 | 10/30/72 | Databus 5 Interpretive System | 70015 | 50003 | 20017 | | 40015 | C |
| <u>Databus 6</u> | | | | | | | | |
| +DB6SYS 2.1 | 10/30/72 | Databus 6 System | 70016 | 50003 | 20018 | | 40016 | C |
| <u>Databus 7</u> | | | | | | | | |
| DB7SYS 2.5 | 12/20/73 | DOS Databus 7 System Supports Local and Servo Printers | 70031 | 50018 | | 20038 | 40031 | C |
| <u>BASIC</u> | | | | | | | | |
| BASIC 2.2 | 8/29/73 | "Datapoint Basic" Programming Language For Cassette Systems | | 50037 | 20060 | | | C |
| DOSBASIC 2.1 | 5/28/74 | Basic Language For DOS Systems | | 50020 | | 20041 | | C |
| <u>Utilities</u> | | | | | | | | |
| BLCURVE 1.1 | 8/31/73 | Basic Library Programs - Curve Fitting Package | | 50039 | | | 20062 | C |
| BLEDITOR 1.1 | 8/31/73 | Automatic "Basic" Program Editor and Renumbering Package | | 50040 | | | 20064 | C |
| BLMATH1 1.1 | 8/31/73 | "Basic" Library Programs - Mathematics Package #1 | | 50041 | | | 20066 | C |
| BLMATH2 1.1 | 8/31/73 | "Basic" Library Program - Mathematics Package #2 | | 50042 | | | 20068 | C |
| BLPLOT 1.1 | 8/31/73 | "Basic" Library Programs - Plotting Package For Servo Printer | | 50043 | | | 20070 | C |
| BLSTAT 1.1 | 8/31/73 | "Basic" Library Programs - Statistics Package | | 50044 | | | 20072 | C |
| RENUMBER 1.1 | 6/29/74 | Renumbers Basic Programs | 70113 | 50045 | | 20073 | 40113 | C |
| <u>RPG II</u> | | | | | | | | |
| RPG 2.1 | 10/25/74 | Datapoint RPG II Compiler | | 50021 | | 20042 | | C |
| RPGPREP 2.2 | 10/28/74 | RPG Program Preparation Utility (DOS) | 70050 | 50046 | | 20074 | 40050 | C |
| CRPGPREP 1.2 | 10/28/74 | RPG Program Preparation Utility (Cassette) | 70051 | 50047 | 20075 | | 40051 | C |

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| <u>DATASHARE</u> | | | | | | | | |
| DATASHAR 3.1 | 10/14/74 | Time Sharing Databus System Datashare Simplified Users Guide | 70052 | 50048 (50049) | | 20076 | 40052 | C |
| +DSREMOTE 1.1 | 1/31/74 | Datashare 2 Remote Program Generation Package | 70053 | 50050 | | | 20077 | C |
| IDS3REMOT 1.1 | 1/25/75 | Datashare 3 Remote Program Generation Package | 70130 | 50126 | | | 20162 | C |
| SCRIBE | | Text Processor for Datashare - See SCRIBE Section | | | | | | |
| <u>DATAFORM</u> | | | | | | | | |
| IDF2FGS 1.4 | 1/22/75 | Dataform Form Generation System | 70054 | 50104 | 20078 | | 40054 | C |
| IDF2PGS 1.3 | 1/22/75 | Dataform Program Generation System | 70055 | 50104 | 20079 | | 40055 | C |
| IDF2SYS 1.3 | 1/22/75 | Dataform Data Entry System | 70056 | 50104 | 20080 | | 40056 | C |
| | | Dataform Simplified Users Guide | | (50051) | | | | |
| IDF2DOSG 1.2 | 1/24/75 | Dataform 2 DOS Support for Generation and Test | 70057 | 50052 | | 20081 | 40057 | C |
| <u>COMMUNICATIONS TERMINAL EMULATORS</u> | | | | | | | | |
| DCT2000 1.1 | 5/17/73 | Univac DCT2000 Terminal Emulator | 70058 | 50053 | 20082 | 20083 | 20083 | C |
| EM200A 2.1 | 5/22/74 | CDC 200 UT Emulator (ASCII Model) | 70059 | 50054 | 20084 | | 40059 | C |
| EM200B 2.1 | 5/22/74 | CDC 200 UT Emulator (BCD Model) | 70060 | 50054 | 20086 | | 40060 | C |
| EM2741 2.1 | 6/15/71 | IBM 2741 Terminal Emulator (KSR Only, 2K Version 1) | 70061 | 50055 | | 20088 | 20088 | C |
| EM2780A 5.1 | 8/ 1/74 | IBM 2780 Emulator, 8K (Cassettes, Printer) | 70062 | 50056 | 20089 | | 40062 | C |
| EM2780B 5.1 | 8/ 1/74 | IBM 2780 Emulator, 12K (Cassettes, Printer, 9-Track Tape, Cr.) | 70063 | 50056 | 20090 | | 40063 | C |
| EM2780C 5.1 | 8/ 1/74 | IBM 2780 Emulator, 16K (Cassettes, Printer, 9-Track Tape, Cr. Disk) | 70064 | 50056 | | 20091 | 40064 | C |
| EM2780D 1.1 | 8/ 1/74 | IBM 2780 Emulator, 8K (Card Reader, Printer) | 70065 | 50056 | 20092 | | 40065 | C |
| EM2780T 5.1 | 8/ 1/74 | Diagnostic Trace for EM2780 Programs | 70066 | 50056 | 20093 | | 40066 | C |
| EM3360 1.1 | 5/22/74 | Datapoint 3360-102 Terminal Emulator | 70067 | 50057 | 20094 | | 40067 | C |
| EM3780B 2.1 | 8/ 9/74 | IBM 3780 Emulator | 70068 | 50058 | 20095 | | 40068 | C |
| EM3780C 2.1 | 8/ 9/74 | IBM 3780 Emulator | 70069 | 50058 | | 20096 | 40069 | C |
| EM3780T 2.1 | 8/ 9/74 | IBM 3780 Emulator Diagnostic Trace | 70070 | 50058 | 20097 | | 40070 | C |
| UNITERM2 3.1 | 6/27/74 | Expanded Teletype Terminal Emulator, 12K (9-Track Tape, Cr., Printer) | 70071 | 50059 | 20098 | | 40071 | C |
| UNITERM3 3.1 | 6/27/74 | Teletype Terminal Emulator 8K (Cassette, Printer) | 70072 | 50059 | 20099 | | 40072 | C |
| UNITRX1 2.1 | 7/16/74 | Terminal Emulator for Half Duplex 202 Modem Comm | 70073 | 50060 | 20100 | | 40073 | C |
| UNITRX2 2.1 | 7/16/74 | Terminal Emulator for Half Duplex 202 Modem Comm | 70074 | 50060 | 20101 | | 40074 | C |
| UNI2741A 2.1 | 7/23/74 | Expanded IBM 2741 Terminal Emulator | 70075 | 50061 | 20102 | | 40075 | C |

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| +DISKCOM 1.1 | 5/24/74 | General Purpose Asynchronous Disk Communications Program | 70076 | 50062 | | 20103 | 40076 | C |
| +NLNCOM4 1.3 | 5/29/74 | General Purpose Cassette Communications Program | 70077 | 50063 | 20104 | | 40077 | C |
| HASP20 2.2 | 8/ 1/74 | Emulator For HASP/ASP Model 20 BSC | 70078 | 50064 | 20105 | | 40078 | C |
| MORSE 2.1 | 6/12/72 | Morse Code Transceiver | 70079 | 50065 | | 20106 | 20106 | C |
| +SEVENCOM 1.1 | 7/26/74 | Datapoint's Asynchronous Seven Track Communications Program | 70080 | 50066 | 20107 | | 40080 | C |
| +NINECOMM 1.1 | 7/26/74 | Datapoint's Asynchronous Nine Track Communications Program | 70081 | 50066 | 20108 | | 40081 | C |
| <u>MATH ROUTINES</u> | | | | | | | | |
| DATA CALC 2.1 | 5/30/74 | Floating Point Desk Calculator Program | 70082 | 50067 | 20109 | | 40082 | C |
| FLOAT12 1.1 | 1/16/74 | Twelve Digit Floating Point Package | 50068 | 50069 | | 20110 | 20149 | C |
| FLOATRAN 2.1 | 1/16/74 | Floating Point Subroutine Package | 50070 | 50071 | | 20111 | 20150 | C |
| STATH 1.2 | 11/30/71 | String Math Subroutine Package | 50072 | 50073 | | 20112 | 20151 | C |
| SSTATH 1.1 | 9/ 1/74 | Short String Arithmetic Package | 50074 | 50075 | | 20113 | 20152 | C |
| <u>INPUT-OUTPUT UTILITIES</u> | | | | | | | | |
| DDRIVE 1.1 | 5/24/72 | General Disk Drive Routines In Assembly Language | 50076 | 50077 | | 20114 | 20114 | C |
| TDRIVE 1.3 | 2/19/73 | 7 and 9-Track Tape Drive Subroutines In Assembly Language | 50078 | 50079 | | 20115 | 20115 | C |
| V1SERVO 1.1 | 9/25/73 | Servo Printer Driver Routines For Version 1 2200, In Assembly Language | 50080 | 50081 | | 20116 | 20116 | C |
| TYPE 1.1 | 11/16/72 | Selectric Typewriter Driver In Assembly Language | 50082 | 50083 | 20117 | | 20153 | C |
| PRINTS 1.2 | 6/ 7/71 | String Print Subroutine In Assembly Language | 50084 | 50085 | | 20118 | 20118 | C |
| CHARGEN 1.1 | 7/12/74 | RAM Display Character Set Generator | 70083 | 50086 | 20119 | | 40083 | C |
| CID 1.1 | 10/30/74 | Cassette Interrupt Drivers | 70126 | 50121 | | 20158 | 20158 | C |
| SERVO 1.1 | 4/25/73 | Servo Printer Driver Routines in Assembly Language | 70127 | 50122 | | 20159 | 40118 | C |
| <u>PROCESSOR DIAGNOSTICS</u> | | | | | | | | |
| EXRTAP 1.1 | 5/18/71 | 2200 Cassette Tape Exercisor For Manual Keyboard Command Control | 70084 | 50087 | | 20120 | 20120 | C |
| HRLYMEMT 1.1 | 4/ 9/74 | Hourly Memory Test For 2200 Version II | 70085 | 50088 | 20121 | | 40085 | C |
| MEMTST 1.1 | 5/10/72 | Pseudo Random Memory Test | 70086 | 50089 | 20122 | | 40086 | C |
| RBMTST 1.1 | 10/ 4/72 | Rotating Bit Version 2 Memory Test | 70087 | 50090 | 20123 | | 40087 | C |
| TAPTIM 1.6 | 10/30/74 | Cassette Endurance and Timing Diagnostic | 70029 | 50091 | 20034 | | 40029 | C |
| TSTDIS 1.1 | 3/31/71 | Display Tester | 70088 | 50092 | 20124 | | 40088 | C |
| TSTKEY 1.4 | 7/ 2/71 | Keyboard Tester | 70089 | 50093 | 20125 | | 40089 | C |
| TSTMEM 1.7 | 5/10/72 | Memory Tester | 70090 | 50094 | 20126 | | 40090 | C |
| TSTPRO 1.1 | 5/10/71 | Processor Tester | 70091 | 50095 | 20127 | | 40091 | C |
| ENDURE 1.6 | 10/11/71 | Combined Memory and Tape Endurance Test | 70092 | 50096 | 20128 | | 40092 | C |
| TSTALL 1.1 | 3/ 8/72 | Test For Processor, Tape Decks, Display and Memory | | 50097 | 20129 | | 40093 | C |
| RDLTST 1.1 | 7/12/74 | RAM Display Logic Test | 70094 | 50098 | 20130 | | 40094 | C |

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| <u>PERIPHERAL DIAGNOSTICS</u> | | | | | | | | |
| CARDTST 1.1 | 12/ 8/72 | Card Reader Test Program | 70095 | 50099 | 20131 | | 40095 | C |
| EXRIBM 2.1 | 1/ 1/73 | 7 and 9-Track Tape Diagnostic | 70096 | 50100 | 20132 | | 40096 | C |
| FOXER 1.4 | 10/26/71 | Printer Tester (Local Or Remote) | 70097 | 50101 | 20133 | | 40097 | C |
| MPATEST 1.1 | 5/17/73 | Multiple Port Communications Adaptor Test | 70098 | 50102 | 20134 | | 40098 | C |
| PITEST 1.1 | 2/11/72 | Parallel Interface Tester | 70099 | 50103 | 20135 | | 40099 | C |
| SINGER 1.1 | 7/31/72 | Singer 2200/Printer Diagnostic | 70100 | 50105 | 20136 | | 40100 | C |
| TST22P 1.2 | 10/11/71 | 2200/Printer Tester | 70102 | 50107 | 20138 | | 40102 | C |
| TSTDBM 1.2 | 10/23/72 | Disk Controller Buffer Memory Test | 70103 | 50108 | 20139 | | 40103 | C |
| TSTDBMH 1.1 | 4/ 9/74 | Hourly Rotating Disk Buffer Memory Test | 70104 | 50109 | 20140 | | 40104 | C |
| TSTDSK 1.2 | 1/ 4/74 | Disk Exercisor | 70105 | 50110 | 20141 | | 40105 | C |
| TSTSCA 1.3 | 4/25/72 | Synchronous Communications Adaptor Diagnostic | 70106 | 50111 | 20142 | | 40106 | C |
| TSTSP 1.1 | 7/ 9/73 | Servo Printer Diagnostic | 70107 | 50112 | 20143 | | 40107 | C |
| COMVAL 1.2 | 8/19/74 | 202 Modem Validation | 70108 | 50113 | 20144 | | 40108 | C |
| CCATST 1.2 | 7/10/74 | 9900-410 Diagnostic Test Program | 70109 | 70120 | 20145 | | 40109 | C |
| TST404 1.1 | 8/ 8/74 | 9900-404 Diagnostic Test Program | 70110 | 70119 | 20146 | | 40110 | C |
| TSTPRT 1.1 | 8/28/74 | Line Printer Diagnostic | 70112 | 50117 | 20148 | | 40112 | C |
| SURFTSTA 1.1 | 11/12/74 | Check For Disk Surface Defects | 70124 | 50120 | 20156 | | 40116 | C |
| MPXTEST 1.1 | 8/13/74 | 9900-462,2200-460 Diagnostic Test Program | 70125 | 60217 | 20157 | | 40117 | C |
| !MA370 1.1 | 1/ 9/75 | Maintenance and Installation Aid for 9370 | 70129 | 50124 | 20161 | | 40120 | C |

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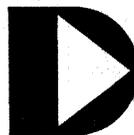
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