SPERRY UNIVAC UTS 700
Universal Terminal System

The Total Performance
Terminal System

SPERRY ✦ UNIVAC

Your Total Needs . . .

Chances are you've already considered the many advantages of intelligent remote terminals in your data-processing system.

They off-load your central computer, and therefore save you costs and time.

They help you lower your communications costs by performing batch jobs at your remote work sites.

They give you increased flexibility and operational scope by letting you program at the terminal.

And they extend the usefulness of your total system by promoting interactive processing.

Sperry Univac, always a leader in total data processing system capability, now offers you an exceptional achievement in remote terminal technology—the SPERRY UNIVAC UTS 700 Universal Terminal System.

It's a low-cost but powerful—and programmable—terminal system built around a microprocessor computer. Complementing the advanced hardware is a sophisticated operating system of the type usually found only in much larger systems.

The hardware and software—along with a wide variety of peripheral subsystems—combine to make the UTS 700 the most flexible, powerful and easy to use terminal system in its price range.

If you've been considering intelligent terminal systems for your operation, consider this one first.
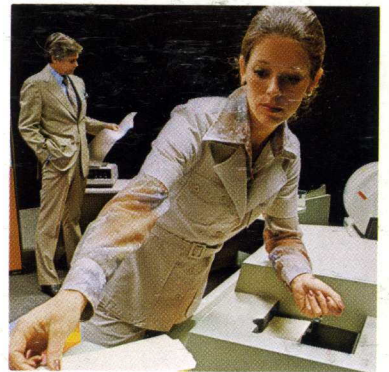
Total Versatility . . .

The UTS 700 gives you all the many benefits of an intelligent terminal system—at an unmatched price-performance ratio.

It can operate as either a stand-alone batch or as a remote batch terminal. It has outstanding communications network versatility.

As a batch system, the UTS 700 offers you features which are unusual for its size and price. With it, you can perform stand-alone batch and remote-batch operations concurrently. Disk file management lets you call files by name. The system control language consists of simple English statements. Error-logging is provided—and menu-selection techniques are used for simplicity if a workstation is present.

The UTS 700 can easily help you reduce costly drains on your central-computer resources. With it, you can move the bulk of your day-to-day batch processing back to the source of the data.

In a communications network, that means your central computer need accept and deal with only *essential* data—rather than *all* data.

Moreover, the intelligence of the UTS 700 means you'll have fewer data errors and fewer data problems: with the remote processing power of the UTS 700 at work, you can edit, preprocess and check data *before* transmission. So you'll save transmission time as well as central computer operating time.

You might even make your central computer last a little longer.

Total Capability . . .

The disk-based UTS 700 offers you a variety of processing capabilities—a distinct improvement over earlier card-based systems.

Used as a stand-alone batch system, the UTS 700 even supplies you program-development tools, giving you greater independence from other processing systems when it comes to getting your work done.

As a distributed processing system, the UTS 700 lets you share system capabilities among actual user departments. It can also provide you with an interactive, conversational man/machine interface.

As a remote-batch terminal with intelligence, the UTS 700 gives you the capability of sending data and job streams to a distant computing system —or receiving data from a distant system—in the most efficient and expeditious manner possible.

A powerful language processor accounts for a large measure of the UTS 700 capability—industry-standard RPG II.

And a complete set of powerful and flexible utility programs is also part of the UTS 700 software. They allow sorting, copying and data manipulation —capabilities unique in a system the size of the UTS 700, and unexpected in its price range.

Think of how that kind of capability could fit your applications: you can use it for order processing, sales analysis, inventory control, payroll, job accounting, financial reporting . . .

The Total System...

Hardware, software, peripheral subsystems—together these components of the UTS 700 work with your present central computer and communications network to form a more flexible, capable and comprehensive *total* data processing system.

If your present equipment is from Sperry Univac, that's all to the good: the UTS 700 is completely compatible with SPERRY UNIVAC central processing systems, peripheral subsystems and remote batch terminals like the Data Communication Terminal DCT 2000 and 1004 Card Processor.
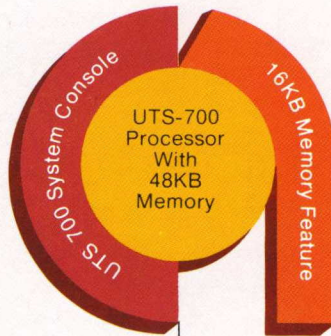
And if your present system is not from Sperry Univac—but already interfaces with remote batch terminals—the chances are excellent that it will communicate with the UTS 700 without the need for software changes. The UTS 700 emulates the protocol of a variety of IBM and SPERRY UNIVAC batch terminals.

Since that emulation is a fact, you needn't fear that you'll outgrow your UTS 700 if you upgrade, either. The UTS 700 grows with you—first through peripherals and added UTS 700 terminals—and second by remaining viable even if you replace your entire system.
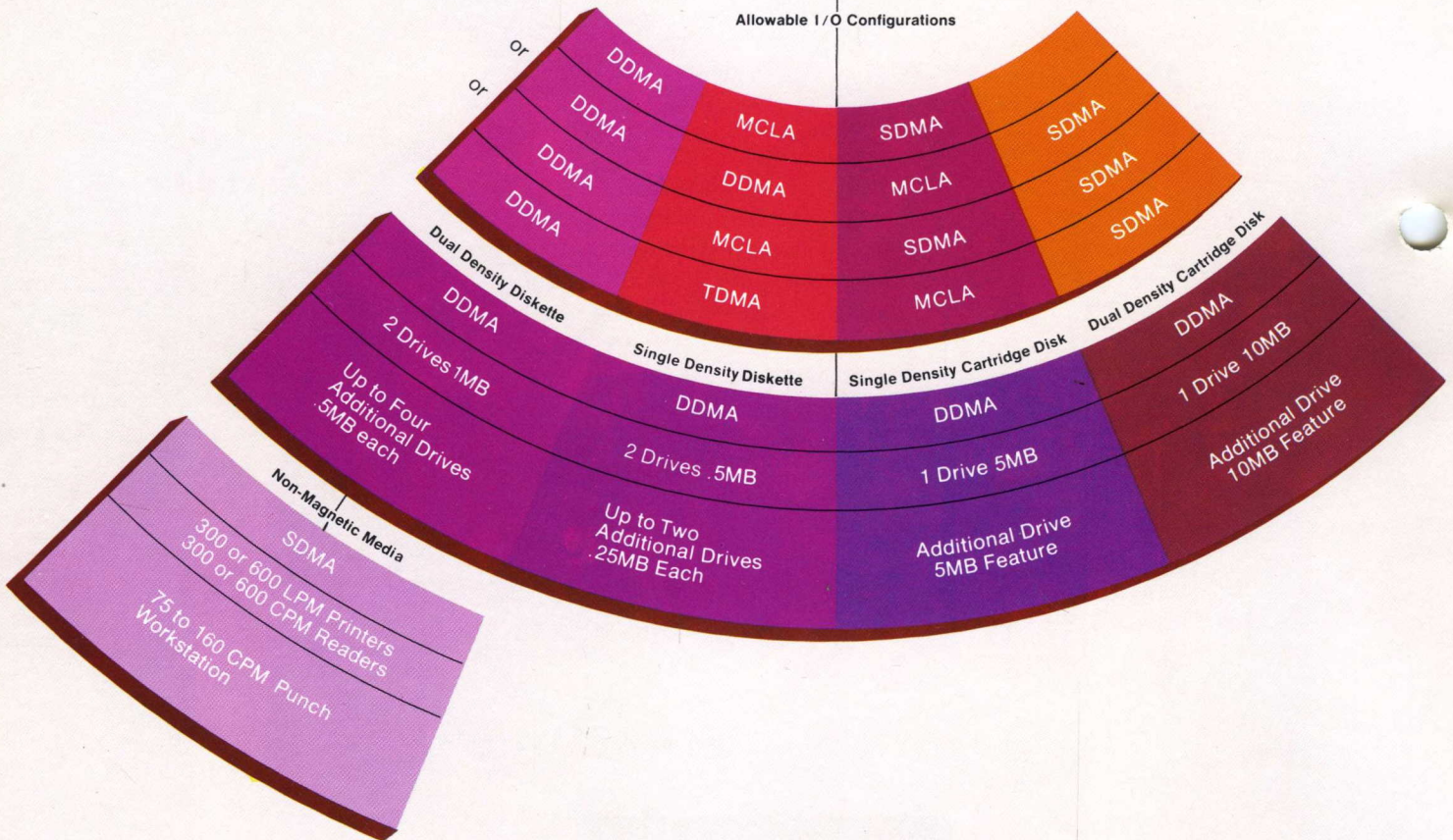
For a detailed example of how the UTS 700 can grow with you in place, look at the configurator included here as Figure 1.

You'll see that the UTS 700 can meet your total needs.

UTS-700 Processor With 48KB Memory

UTS 700 System Console

16KB Memory Feature

Allowable I/O Configurations

or
or

DDMA
DDMA
DDMA
DDMA

MCLA
DDMA
MCLA
TDMA

SDMA
MCLA
SDMA
MCLA

SDMA
SDMA
SDMA

Dual Density Diskette

DDMA
2 Drives 1MB
Up to Four Additional Drives .5MB each

Single Density Diskette

DDMA
2 Drives .5MB
Up to Two Additional Drives .25MB Each

Single Density Cartridge Disk

DDMA
1 Drive 5MB
Additional Drive 5MB Feature

Dual Density Cartridge Disk

DDMA
1 Drive 10MB
Additional Drive 10MB Feature

Non-Magnetic Media

SDMA
300 or 600 LPM Printers
300 or 600 CPM Readers
75 to 160 CPM Punch
Workstation

Nomenclature:
DDMA — Diskette Direct Memory Access
MCLA — Microprocessor Communication Line Adapter
TDMA — Tape Direct Memory Access Adapter
SDMA — Shared Direct Memory Access
CDMA — Cartridge Disk Direct Memory Access

The UTS 700 Hardware . . .

Physically, the UTS 700 main electronics and operator's console are housed in a modern-design, single-pedestal desk which serves not only as the control center but also as a general work area.

Within the desk-type cabinet you'll find the powerful microprocessor, the memory, a communications adaptor and an interface for up to four peripheral subsystems. The cabinet also features enough space to house up to six diskette subsystems.

The operator's console is designed for maximum operator performance. At the left rear of the desk top is a 5-inch video screen, which displays system messages in English on two 16-character lines. At a glance, your operator can tell which program is running, which peripheral is running or if an error condition exists.

The UTS 700 microprocessor is an 8-bit parallel binary processor with an 8-bit accumulator, six 8-bit programmable work/index registers. four condition flags and an 8-bit external data path. It has 16-bit immediate operators for initializing the work/index registers, a limited 16-bit double-precision capability and two-digit-decimal arithmetic correction. There is a 16-bit program counter and a 16-bit programmable stacker pointer that uses part of main storage as the stack store. A priority interrupt facility lets the processor respond to both internal and external events.

Main storage provided with the UTS 700 is semiconductor, available with a 16K increment from a minimum of 48K to a maximum of 65K. The approximate read access time is 300 nanoseconds, and the read, write and refresh cycle time is about 1000 nanoseconds.

Figure 1:
UTS-700 Configuration Diagram. Highly advanced and reliable hardware, versatile and proven software, plus a wide range of efficient and cost-effective peripheral subsystems offer you the benefits of modular expansion, flexible architecture and state-of-the-art sophistication.
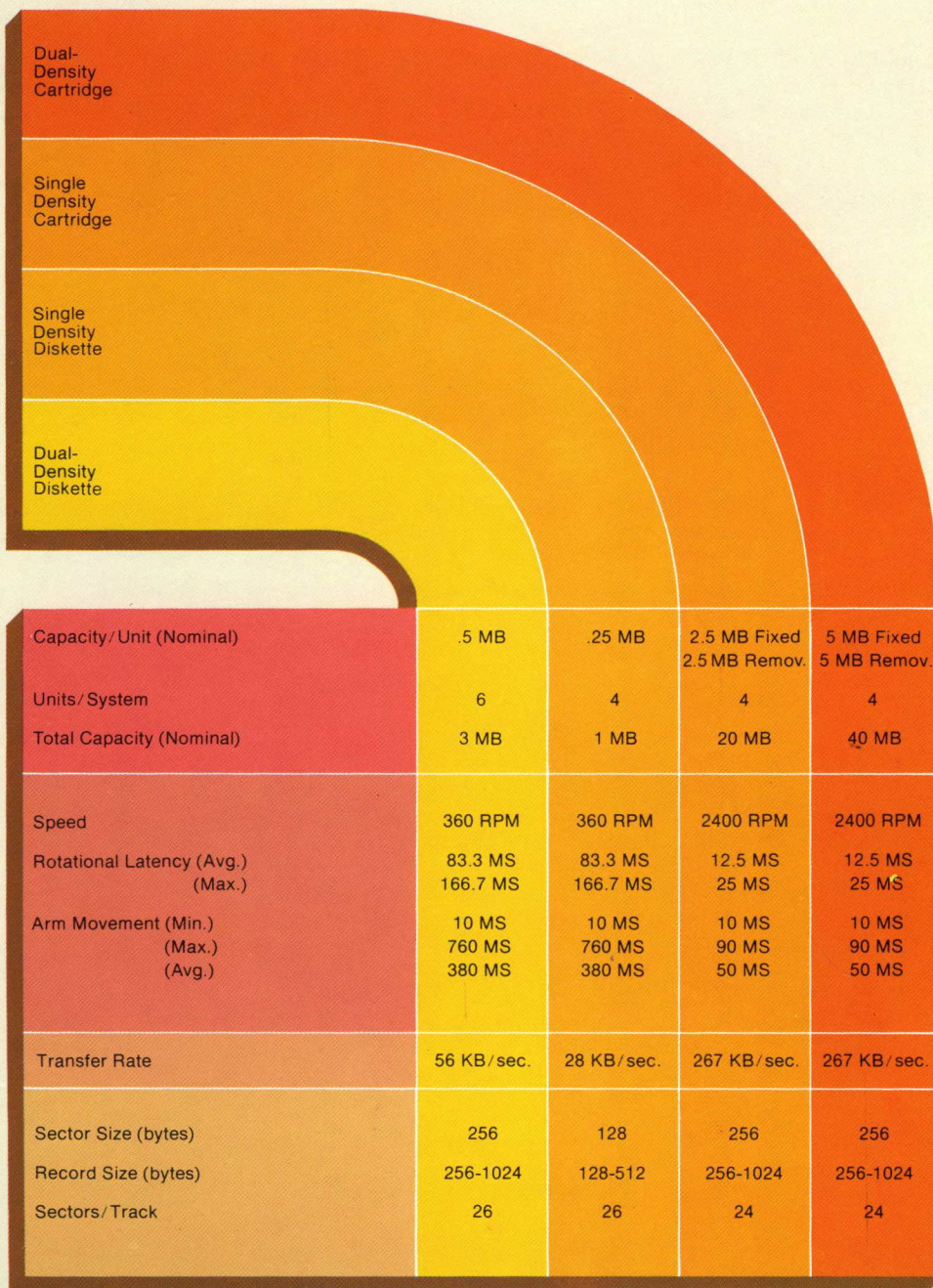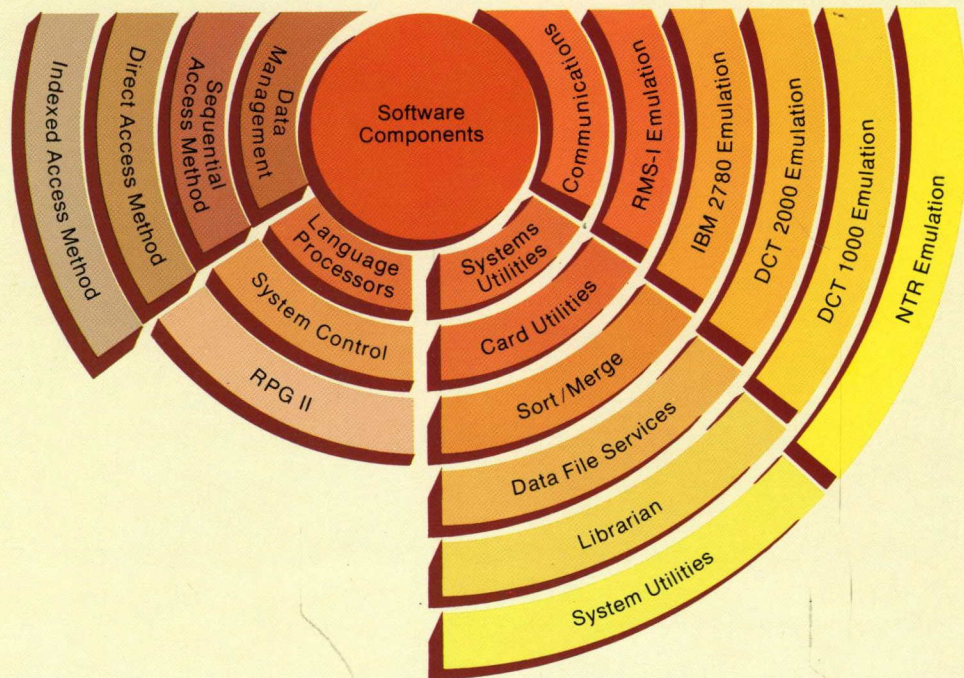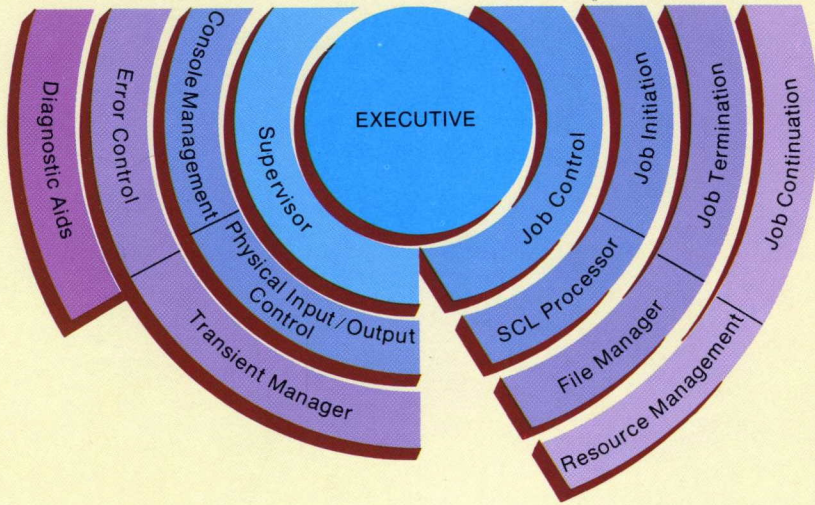
	Dual-Density Cartridge	Single Density Cartridge	Single Density Diskette	Dual-Density Diskette
Capacity/Unit (Nominal)	.5 MB	.25 MB	2.5 MB Fixed 2.5 MB Remov.	5 MB Fixed 5 MB Remov.
Units/System	6	4	4	4
Total Capacity (Nominal)	3 MB	1 MB	20 MB	40 MB
Speed	360 RPM	360 RPM	2400 RPM	2400 RPM
Rotational Latency (Avg.)	83.3 MS	83.3 MS	12.5 MS	12.5 MS
(Max.)	166.7 MS	166.7 MS	25 MS	25 MS
Arm Movement (Min.)	10 MS	10 MS	10 MS	10 MS
(Max.)	760 MS	760 MS	90 MS	90 MS
(Avg.)	380 MS	380 MS	50 MS	50 MS
Transfer Rate	56 KB/sec.	28 KB/sec.	267 KB/sec.	267 KB/sec.
Sector Size (bytes)	256	128	256	256
Record Size (bytes)	256-1024	128-512	256-1024	256-1024
Sectors/Track	26	26	24	24

Figure 2:
Comparison of UTS 700 Peripheral Capabilities.

EXECUTIVE

- Diagnostic Aids
- Error Control
- Console Management
- Supervisor
- Physical Input/Output Control
- Transient Manager
- Job Control
- Job Initiation
- Job Termination
- Job Continuation
- SCL Processor
- File Manager
- Resource Management

Software Components

- Indexed Access Method
- Direct Access Method
- Sequential Access Method
- Data Management
- Language Processors
- System Control
- RPG II
- Systems Utilities
- Card Utilities
- Sort/Merge
- Data File Services
- Librarian
- System Utilities
- Communications
- RMS-I Emulation
- IBM 2780 Emulation
- DCT 2000 Emulation
- DCT 1000 Emulation
- NTR Emulation

The UTS 700 Software . . .

The UTS 700 software is designed for both simplicity and comprehensiveness. It makes the system equally effective on-line to a central processor or as a stand-alone system in a remote batch environment.

The disk operating system of the UTS 700 is both easy to use and efficient. It functions as a large utility program—in many ways more typical of a large-scale operating system than a minicomputer.

RPG II applications programs, for example, communicate with the disk operating system whenever input/output operations are required, for job initiation and termination, for file management and control, and for general resource management.

The system is comprehensive, and also comprehensible. To achieve simplicity:

• the system commands are short, yet powerful.

• all dialogue between your operator and the system is in plain English.

• the system control language is preset, yet parameterized and extremely powerful.

• menu-selection techniques are used to simplify operator control via a workstation.

• all system utilities are run in a step-by-step manner.

• the remote-batch-terminal emulators follow the operation of the emulated terminals very closely.

• local batch programs can operate concurrently with remote terminal emulation.

Figure 3:
UTS 700 Software Components.
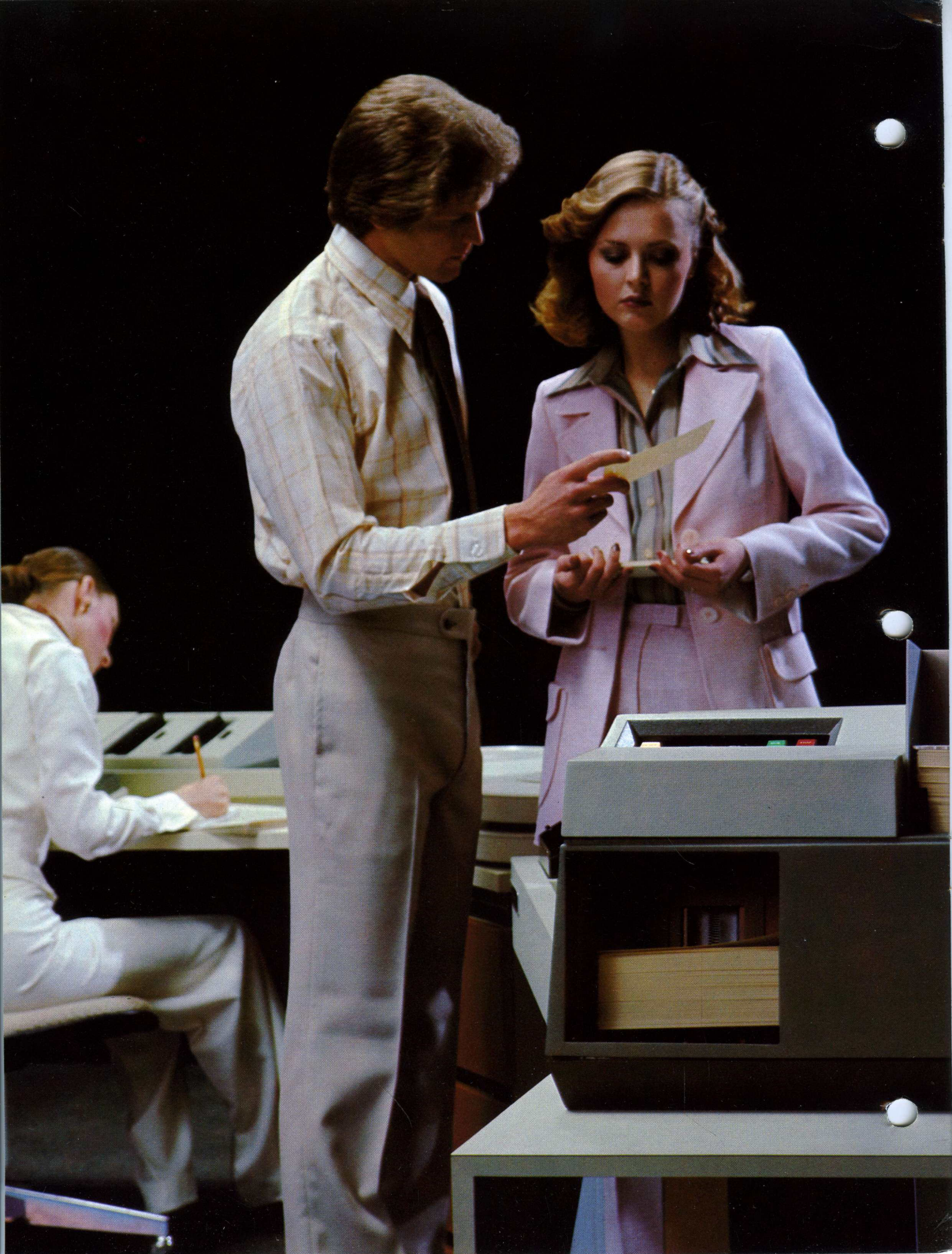
For the easiest and most efficient operation, the UTS 700 supports advanced file-handling techniques, particularly in access and file- and field-naming conventions. For example:

- sequential files are supported on all devices.
- direct sequential access on disk files allows pure random access, as well as record skipping.
- indexed access permits the random access of a file based on a key field within a record.
- programs address files by name, and the user need not be concerned with their actual location on disk.
- disk file management, including the maintenance of available disk tables, space assignment and other housekeeping is done by the system software.
- each field may have a field definition element which describes the data field, giving it a name and data type; this lets you access the field by name rather than by location and width.

The file management system for the UTS 700 provides for the management of data files, program libraries, system files and working files. It includes an optional file directory.

The file management system provides the interface by which other system components and user programs request tape and disk input/output operation. It assures program independence from specific device type, your peripheral changes can be made without affecting operations. The file management system provides support for sequential, direct sequential and indexed file structures, for opening files, closing files, retrieving records, writing records, controlling certain input/output functions, specifying input/output buffering, waiting for completion of input/output operations and loading indexed files.

The UTS 700 utility programs are separate jobs apart from the resident operating system monitor, and as such are executed through system control language commands.

Card utilities provide for the duplication and listing of card decks. Sort/Merge lets you sort fixed-size records on several keys in ascending or descending sequence, select records to be sorted and summarize information. Data file services give you the capability to display file and volume labels, copy, print and erase files.

Program file utility services provide for the creation of elements and the organization of elements into libraries: you can allocate, reorganize, delete, copy and print elements. System support facilities include all the auxiliary functions needed to run and debug programs such as disk preparation and system dump. Data entry capabilities are supplied through basic facilities that let you enter data via a video display to a diskette or disk, including editing, formatting, verification and correction.

UTS 700 Languages . . .

RPG II. Through the use of RPG II, you'll find it easy to write your own programs for the UTS 700. RPG II is essentially a problem-solving language you can use easily for a wide variety of data processing programs. RPG II specification sheets help the programmer make the appropriate entries in the appropriate places, and each RPG II program uses the same general program logic. It is a universally popular language, and many applications of it are readily available.

System Control Language. The control and operation of the UTS 700 is the business of the system control language. It is made up of simple English verbs which specify programs to be executed, identify the files to be used and aid in debugging in the event of system failure. You can enter system control language commands through a workstation or card reader, or call them up from disk storage. The language controls:

- job definition
- system control language commands
- file definition
- system control
- utility program support
- language processor calls
- disk support
- special subsystems support.

In general, your operator will neither see nor need to know the system control language or the rules of syntax for the language: the correct selection can be made as from a menu, several levels deep, in simple English.

After a procedure is selected via the menu technique, parameters can be introduced into the job stream from a workstation. Thus, general-purpose procedures can be simply written.

Since both the menu items and any requests for parameters are in simple English statements, your operator need not remember specific program names —or the order and type of parameters used for the procedures.

As with everything else in the UTS 700, the system control language is operator-oriented, easy to use, powerful, and conducive to efficiency, economy and quick learning.
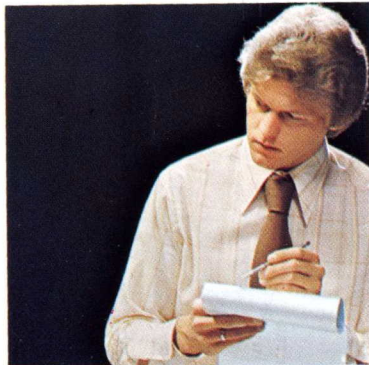
The Total Performance UTS 700...

Total performance in an intelligent terminal—that's what the SPERRY UNIVAC UTS 700 promises and fulfills.

You can use it as a freestanding batch terminal—or as a remote batch terminal communicating with your central computer.

Its unique combination of hardware, software and peripheral capabilities lets you tailor a UTS 700 system to your present needs—and expand it for the future—confident that your total system will do the job you want it to at a price you can afford.

With the UTS 700 you can off-load your central computer to reduce costs and time, cut your transmission needs, increase your operational flexibility and scope by programming at the terminal, and extend the usefulness of your total system by the increased use of interactive processing.

Combining the latest in hardware technology with up-to-the-moment software sophistication, the UTS 700 gives you the most comprehensive, comprehensible, versatile, capable, flexible and cost-effective intelligent terminal system available today.

It will complement your SPERRY UNIVAC equipment—and extend the capabilities of your IBM equipment. It offers you the excellence our customers expect—and get—all around the world.

SPERRY ⊕ UNIVAC