

ACCOUNT NAME: WOODY CREEK HARDWARE  
BILLING ADDRESS: P. O. BOX 234  
CITY: HIGH CANYON  
STATE: TEXAS  
ZIP CODE: 78345


ACCT. NUMBER: 3456-124A INV. NO. 4344  
SHIPPING ADDRESS: 342 SAGEBRUSH  
CITY: HIGH CANYON  
STATE: TEXAS SHIP VIA: 1  
ZIP CODE: 78345

-ITEM-	-QUANTITY	-DESCRIPTION-	-PRICE-	-DISCOUNT-	-NET-
001	1	AXLE, TRACTOR 5698A	78.00	%19	63.18
002	50	APEX C20 CHAINSAWS	125.50	%45	3451.25
003	100	BALING WIRE (ROLLS, 300')	11.25	%00	1125.00
		END OF ORDER			

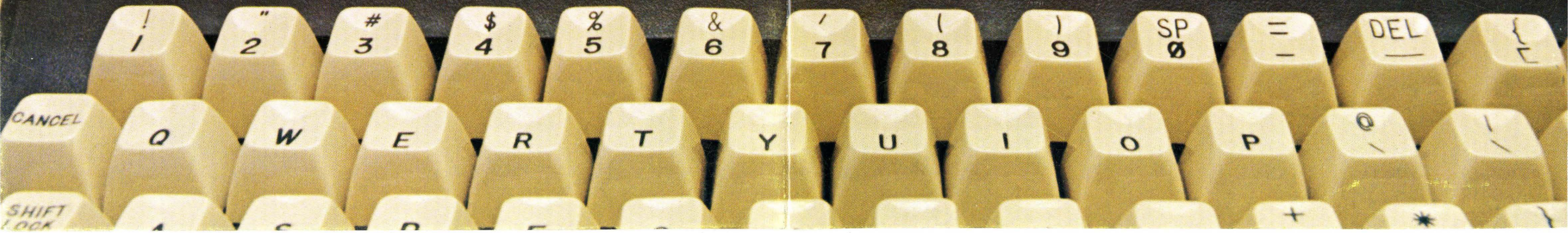
TOTALS 003 ITEMS AT \$ 4639.43

!!!CUST. CREDIT EXCEEDED!!! TYPE Y TO APPROVE Y  
ANY SPECIAL INSTRUCTIONS? #PARTIAL SHIPMENTS OK

CLERK NAME: TIM HARRIS  
(TRANSACTION NO. 345)

Datapoint  


**DATAPPOINT 1100/DATAFORM  
FOR FORM CREATION  
AND DATA ENTRY**





**The Datapoint 1100 Intelligent Terminal with the DATAFORM programming language provides:**

- a new level of efficiency in error-free data conversion and entry from source documents
- the ability through DATAFORM: Level I to create, correct, modify and store data entry formats through simple keyboard instructions for a wide assortment of business purposes
- a capability with DATAFORM: Level II to provide sophisticated error checks, field range guidelines, table look-ups, complete arithmetic and a common storage area
- a flexible data communications capacity that enables the 1100 to interface readily with the majority of current computer/communications networks
- a roster of packaged and proven support software for the 1100 that allows swift utilization in your on-going operation
- off-the-shelf support peripherals such as communications adaptors and printer units that augment the local processing capability of the basic 1100
- automatic "off-shift" polling of Datapoint 1100s in your network by a home office Datapoint 2200 that permits low cost transfer of data between field office and headquarters

**And these general Datapoint features:**

- full upward compatibility with Datapoint 2200 and Datapoint 5500 dispersed processing systems when your field offices outgrow the 1100's capability
- a large, professional, strategically located customer service force that provides swift response to your field engineering requirements
- the skills, competence and dedication represented by Datapoint Corporation, which has over 10,000 systems in operation and is generally recognized as the leader in dispersed data processing technology.

**THE DATAPOINT 1100 INTELLIGENT TERMINAL**

The Datapoint 1100 is a stand-alone Intelligent Terminal which incorporates a sophisticated general purpose computer, 4K or 8K fully programmable memory, a 12 line x 80 character video display, a full ASCII keyboard and dual cassette tape decks. The 1100 will accept a variety of peripherals, including a choice of four communications interfaces and three printers for local printing requirements.

The 1100 Terminal, with 8K of memory and the DATAFORM programming language, provides a new level of efficiency in "intelligent" data entry. The computer-based 1100 literally hand guides an operator through data entry operations, pointing out errors and relieving the operator of tedious and error-prone arithmetic and indexing operations. Once entered, source data is stored on cassette tapes in the 1100, making it available for subsequent revision and editing, or as a file for access during the working day, or it may be transmitted to a central computer site for processing.

In effect, the 1100 operator has the full capability of a powerful computer with a substantial data storage capability at her fingertips. Further, a wide variety of standard or non-standard forms—for sales order entry, accounts payable, etc.—can be stored on an 1100 cassette and retrieved at any time, either automatically or manually, for use. Moreover, the systems designer can elect to have entered data checked for format considerations only, or can utilize the full weight of the 1100 computer to apply complex techniques and assure valid data.

**The Dataform Language**

To make easier the job of preparing a comprehensive data entry system, a powerful language, DATAFORM, has been designed specifically for the 1100 data entry user. DATAFORM operates on two levels: I, as an easy-to-use form generator, and II, as a high-level programming language. The form generator permits fast generation of screen forms with field checking features. If more complex checking or data manipulation is needed, DATAFORM's powerful high-level language may be used for writing short sub-programs to edit, do arithmetic, check ranges of figures, compare entered data against tables and perform check digit operation. In addition DATAFORM will automatically perform a read-after-write check to assure the data has been physically written to the cassette.

And for those applications where the system programmer needs absolute flexibility (or where a 4K 1100 is to be used) programs may be written in Assembly Language with a complete library of tested routines available from the Datapoint Software catalog. No user need compromise his application to meet a machine's capability—the 1100 offers complete adaptability to the user's terms and conditions.

Once data is stored on a cassette, other features of the 1100 come into play. In transmitting stored data to a central computer, the 1100 will duplicate the line discipline of many large computers of the IBM 360 and 370 class. Sophisticated error checking techniques, as employed in Binary Synchronous Code Transmission and others, are used to assure valid data arriving at the central site.

Where appropriate, a Home Office Datapoint 2200® System, with up to 16K of memory, can, unattended, automatically dial and record the contents of the remote 1100 cassettes on an industry compatible reel of magnetic tape over standard telephone lines. After this operation is accomplished, the reel may be manually transferred to a large central computer for

processing. With this approach, it is no longer necessary for the large computer to be converted to handle telecommunications—a costly and time-consuming process.

**System Expandability**

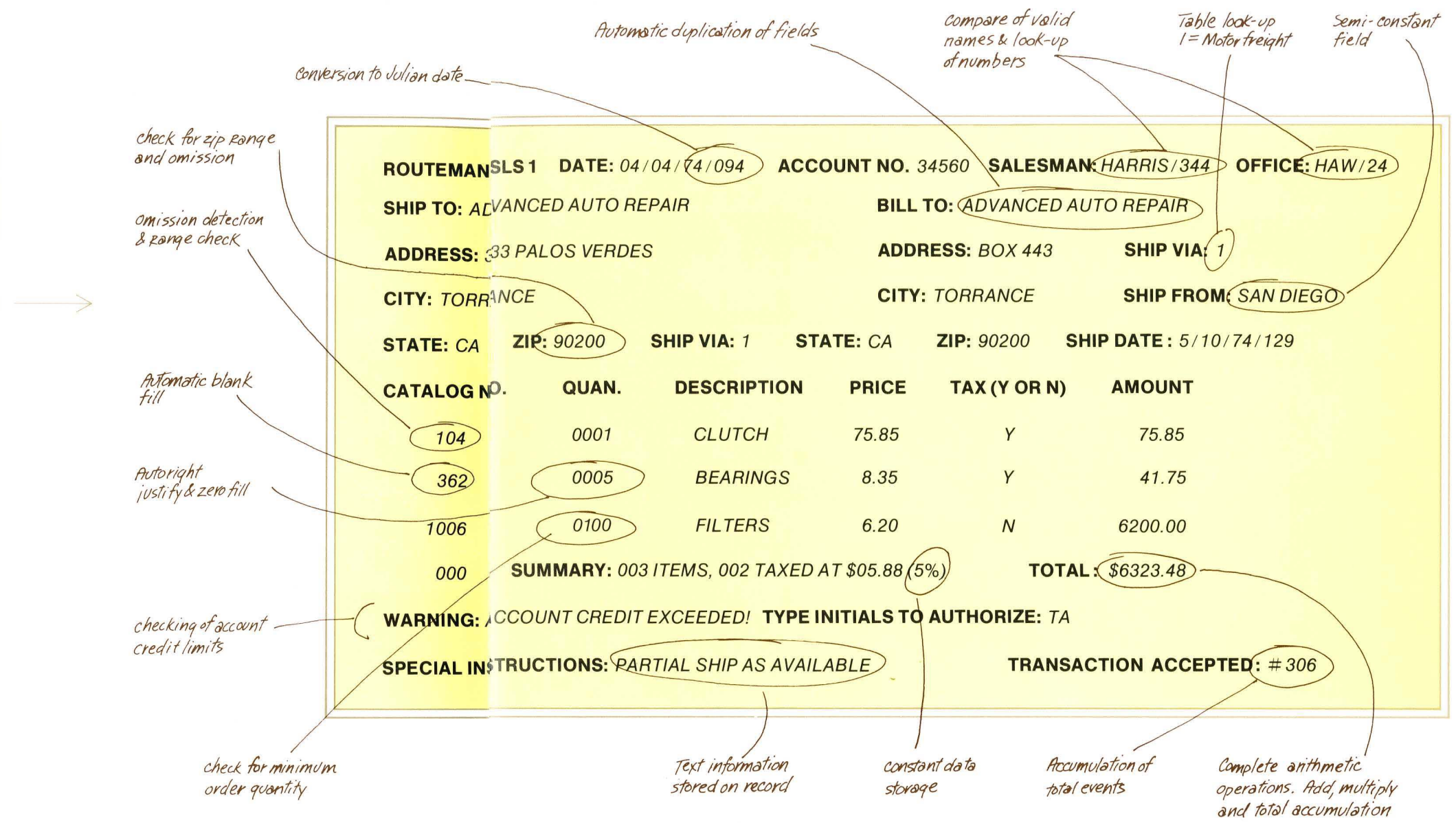
The 1100 user need not fear an application outgrowing an 1100's capabilities. If additional data input locations are required, the 1100 can be upgraded to a Datapoint 2200 DATASHARE System. DATASHARE uses up to 8 simultaneous and separate data entry operations and is based upon low-cost terminals such as Datapoint 3360s or other TTY-compatible units for capturing and moving data to the Datapoint 2200.

If in this configuration even more on-site capability is needed, the 2200 will accommodate a wide variety of discs, printers, magnetic tapes, and other data processing devices. In each phase, as the system grows, the user will find Datapoint software and hardware keeping compatible pace with his requirements.

UNIVERSAL AUTO WAREHOUSE  
**U**  
SAN DIEGO, CALIFORNIA  
DATE: 4/4/74  
**ROUTE SALESMAN ORDER SHEET**  
ACCOUNT NO. 34560  
SHIP TO: ADVANCED AUTO REPAIR  
333 PALOS VERDES  
TORRANCE, CALIF. 90200  
BILL TO: SAME  
Box 443  
SHIP: MOTOR FREIGHT  

CATALOG NO.	QUAN.	DESCRIPTION	PRICE
104	1	CLUTCH	75.85
362	5	BEARINGS	8.35
1006	100	FILTERS	6.20

  
SHIP AS AVAILABLE  
SALESMAN: HARRIS  
OFFICE: HAWTHORNE



**DATAFORM—A 2-Level Language For Data Entry**

A prime feature of DATAFORM is its ability to generate rapidly standard or special data entry formats for use on the 1100 Intelligent Terminal's CRT display screen. The substance of business forms can change rapidly in a fast moving company, and the data entry equipment must be able to keep pace with these changes with a minimum of re-programming time.

DATAFORM was designed with ease of implementation in mind. The language can be utilized on two levels. Using just its primary

features, formats can be quickly generated even by relatively untrained personnel. If complex capabilities are needed—error checks, range guides, table look-ups, arithmetic, etc.—the systems programmer can call upon the high-level language abilities of DATAFORM. It's this two-fold aspect of the language that makes it so useful.

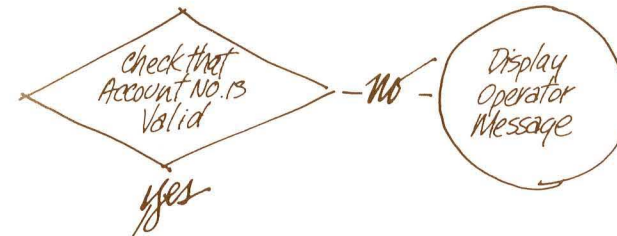
(continued on page 6)

In the above illustration, **heading** data for the order entry format is indicated by the bold face type while **source** data, which is entered manually by the operator, is indicated by the italicized type. The difference in type styles is solely for purposes of illustration. On an actual screen, both heading data and source data appear in the same type style.

BEHIND THE 1100 SCREEN:  
A CONVENIENT, FLEXIBLE PROCESSING CAPABILITY

The form generator allows fast, easy generation of forms and checks the incoming data for numeric, alpha or mixed fields and permits constant or semi-constant fields.

For example: account numbers can be automatically checked against an approved list in memory; invalid numbers flagged and valid ones displayed.



The high level language features of Dataform allow sophisticated operations to be performed on field data.

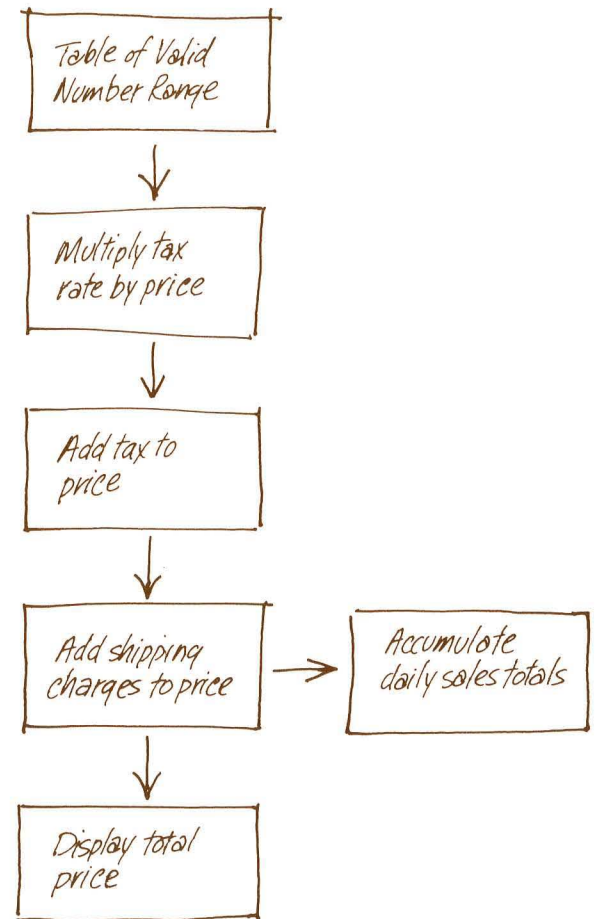
With Dataform basic arithmetic can be taken care of automatically without operator intervention

The large screen of the 1100 permits complete forms to be displayed, saving operator time

NAME: GEORGE GREEN  
 ACCOUNT NO.: 34560  
 ADDRESS: 123 HILL STREET  
 CITY: COLD LAKE  
 STATE: WISCONSIN  
 ZIP: 24012  
 AMOUNT OF PURCHASE?: 40.00  
 SHIPPING CHARGES: 3.00  
 TAX RATE?: 5%  
 TOTAL COST: 45.00



Standard typewriter keyboard plus numeric pad and special function keys



## The DATAFORM Form Generator: Level I

To construct a screen form for data entry, the designer simply creates on the screen the headings and fields to be used for his form. Underlines can be used after each heading to indicate the space allotment for source data being entered. This space is normally called the "field length." Once the format has been created, the form generation program allows the systems designer to define how the fields will be checked on by editing capability of the form generator.

The error-checking functions of the form generator include:

### Field Checks

Alpha  
 Numeric  
 Mixed  
 Right or Left Justified  
 Zero or Blank Filled

### Operator Checks

Required Field  
 By-passing Approved  
 Fill Controlled  
 Program Reserved

### Constant Field Data

Unchangeable Data Field  
 Field can be Modified  
 by Operator Override

### Keyboard Commands

Field Duplication  
 Form Data Erase  
 Write to Cassette  
 Load New Form  
 Tab Forward  
 Tab Backward  
 Field Cancel

### Storage Commands

Write Blanks  
 Compress Data

### Retrieval Commands

Find Specific Record  
 Add to Existing Cassette  
 Automatic Record Index

After edit checks are performed and the data written to the cassette, the operator may elect to search out a particular record and change it without disturbing the other contents of the cassette.

Read-after-Write Verification is accomplished automatically, record by record. Data may also be added to the end of an existing data tape with the automatic positioning feature. Data loaded under the form generator may be printed locally on any of the Datapoint printers.

In using DATAFORM on its primary level, no programming experience is required for form generation. The forms are created simply by typing the desired headings, indicating the desired field lengths, and answering compiler questions. With DATAFORM, a user does not have to go into long and expensive program development.

## The DATAFORM Language: Level II

Many users will find the primary level of DATAFORM more than adequate for data entry. However, for those applications requiring more sophistication than allowed by the form generator, a complete high-level language is resident in DATAFORM. It utilizes English-language commands and is remarkably easy to use. With it, sub-programs can be rapidly generated and added to the library stored on the screen format cassette.

Under this language, specific sub-programs can be written (and named) for an assortment of editing and error checking needs. If the form generator requests that the named sub-program be executed on that field, the 1100 does so and the results can be displayed accordingly. Up to 26 separate sub-programs can be written for each screen form.

## Sample Instructions of The Dataform Language

### Arithmetic

Add  
 Subtract  
 Multiply  
 Divide

### Data Manipulation

Move  
 Align  
 Set  
 Lookup  
 Convert

### Table Checking

In-table  
 Not-in-table  
 In-range  
 Not-in-range

### Check Digits

Mod10  
 Mod11

### Compares

Less than  
 Greater than  
 Equal  
 Not equal  
 Less-than-or-equal  
 Greater-than-or-equal  
 Not-equal

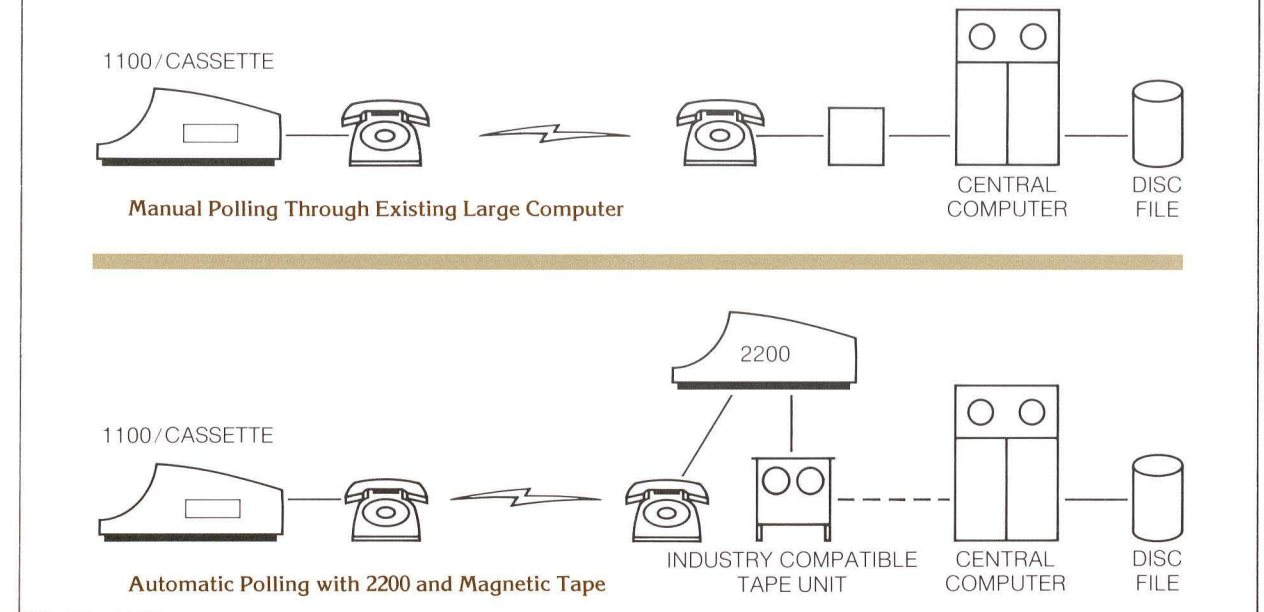
### Branching

Go to  
 Call  
 Return  
 Again  
 Next  
 Store  
 Change  
 Reset

One DATAFORM sub-program may be used several times during data entry. For instance, a sub-program that checks for a valid date could be used for both the shipping and receiving date. Or a sub-program to convert calendar dates to Julian dates may be used several times. On the other hand, a sub-program used to check a part number for range validity may be used only once.

The availability of a programming language that is both general purpose and completely flexible yields maximum equipment utilization and adaptability. The system planner doesn't have to work around a permanent program in handling an application—an 1100 with DATAFORM can easily be programmed to fit the need with a minimum of effort.

## Flexible Data Communications



## Additional Programming Capability

As the 1100 with its maximum of 8K of memory is completely programmable, the sophisticated user can enjoy further gains in flexibility for highly specialized applications by using Assembly Language. Special edits, tape formats or operator controls can be tailored to the system needs by generating an Assembly Language data entry program. Also, many useful subroutines and specialized communications packages and drivers for a wide variety of peripherals are available from the Datapoint Software Catalog.

## The Next Phase: Communicating the Data

The flexibility of the Datapoint 1100's internal computer provides two basic advantages in transmitting error-free source data to a central location.

First, the data structure and discipline can be structured to match an existing communications network and the needs of an existing large computer. Second, sophisticated error-checking techniques can be employed to assure that the received data is accurate.

The wide variety of communications interfaces available permit synchronous or asynchronous communications from 37 to over 9600 Baud (or to approximately 900 characters per second). With this array of communications, the 1100 can transmit and receive according to IBM 2780, IBM 3780, DCT 2000, or UT200 formats as well as the conventional Teletype format interchange.

However, further cost reductions can be gained by assigning a Home Office Datapoint 2200 with industry compatible magnetic tape to communication duties and to automatically poll or telephone on common dial-up lines the 1100 terminals in the field. This not only saves the expense of adding a costly telecommunications capability to the central computer,

but permits completely unattended operation of both local and remote operations. To achieve this, no expansion of the basic 1100 configuration is necessary. Nor is it necessary to add discs, teleprocessing hardware, or undertake other expansion at the central computer.

Operating under automatic polling procedures, the centrally located 2200 will place a call to each 1100 in the network and begin data exchanges. These exchanges can be scheduled at night when telephone rates are low and an operator need not be present. The stored data can be processed and subsequently resent to the field location in report form ready to be printed or for other handling the next morning.

If data errors are encountered, the system will hang up and re-dial with automatic retransmission. No systems stoppages occur requiring operator attention.

## Lets Be Specific About the 1100

The Datapoint 1100 is a computer-based data processing system designed for use as an Intelligent Terminal. The main components consist of a general purpose computer, memory, video display, keyboard and dual cassette tape decks.

### Processor:

A completely programmable general purpose computer with solid-state memory  
50 Instructions  
14 Addressable Registers  
16 Deep Pushdown Stack  
8 Bit Word Length  
Complete Parallel I/O System  
Automatic Power-Up Restart

### Memory:

4,096 or 8,192 word memory (8 bit word)  
(8K memory required for Dataform usage)  
1.6 microsecond access  
All memory fully programmable

### Keyboard:

Standard typewriter, 41 keys  
11 Key Numeric Pad  
5 control Keys  
Audio Tones

### Video Display:

7x3.5" Viewing Area  
80 Columns by 12 Rows, 960 Characters  
Upper and Lower Case (94 ASCII Characters)  
5x7 Dot Matrix for High Readability

### Cassette Tapes:

Standard Phillips Cassettes  
7.5 inches per second speed  
Rewind  
Search Forward and Reverse Mode  
Approximately 120,000 Characters Storage per tape side  
Completely Processor Controlled

### General Specifications:

Weight: 47 lbs (103.6 kilos)  
Size: 9 $\frac{1}{2}$ " Hx18 $\frac{1}{2}$ " Wx19 $\frac{1}{2}$ " D  
Power: 115 VAC, 60 or 50 Hz (optional), 180 watts  
Environment: 32 to 122 F (0 to 50 C)  
0 to 90% relative humidity

## Datapoint 1100 Peripherals

The 1100 will accept several printers and a variety of communications devices, depending on user needs.

### Printers:

SERVO PRINTER: An upper and lower case typewriter quality printer. Speed is 30 character/second with faster speeds achieved using slew and skip techniques.  
SERIAL PRINTER: 130 lines per-minute matrix printer  
LINE PRINTER: 300 lines per-minute drum printer

### Communications Interfaces:

—300 Baud Full Duplex Interface with auto dial, auto answer, and optional Datapoint Modem  
—1200 Baud Half Duplex Interface with auto dial, auto answer, and optional Datapoint Modem  
—Synchronous Data Interface, compatible with Binary Synchronous Discipline, connects to Bell 201 Dataset or equivalent Datasets to over 9600 Baud.

## Datapoint 2200 Polling System:

Where 1100s are located distant from a central office, a Datapoint 2200 may be used to automatically call and effect a transfer of cassette data to the 2200's industry compatible magnetic tape.

Once stored, the data can be communicated by common telephone lines to a home office computer, or to a centrally-located Datapoint 2200 equipped with an IBM compatible-type drive. A variety of communications packages is available to meet the disciplines of IBM 360/370 and other large computers. Sophisticated error-checking codes insure that the data arrives correctly.

When not polling and collecting data the 2200 can operate as another data entry terminal or be effectively utilized as a small business computer. The 2200 can contain up to 16K of memory and have discs, tapes, printers, card readers and other data processing peripherals attached.

## Applications

Standard business forms, or formats you can generate, modify, correct, store and recall with DATAFORM include:

### General Business

Sales order entry  
Invoices  
Accounts payable  
Back order handling  
Inventory reports  
Account status  
Order status  
Bill of material  
Sales forecasting  
Payroll

### Transportation

Order entry  
Waybill generation  
General accounting  
Bill of lading  
Consist reporting  
Payroll  
Demurrage reporting  
Administrative messages

### Insurance

Policy applications  
Remote invoicing  
Claims reporting  
Check writing  
Patient billing  
Policy generation  
Account status  
Claims handling

plus forms for

### Banking

### Hospitals & Health Care

### Manufacturing

### Publishing

### Computer Services

In addition, the 1100 user can easily create as required any non-standard special forms necessary for data entry activity, correcting, storing and using them as with standard forms.

## About Datapoint Corporation

Datapoint Corporation is a leading manufacturer of data processing and data communications systems for use by business, science and government. With its trio of dispersed data processing systems, the 1100, 2200 and 5500, and associated peripherals and software, the company is generally recognized as the leader in the field of data entry, data communications and dispersed data processing. The company markets its products through sales office in major cities throughout the United States and internationally through TRW International and its network of distributors.

### Home Office:

9725 Datapoint Drive, San Antonio, Texas 78284/(512) 690-7173

### Sales Offices:

Atlanta/(404) 458-6423  
Austin/(512) 452-9424  
Baton Rouge/(505) 926-3700  
Boston/(617) 890-0440  
Charlotte/(704) 527-3302  
Chicago/(312) 298-1240  
Cincinnati/(513) 421-6122  
Cleveland/(216) 831-0550  
Dallas/(214) 661-5536  
Denver/(303) 770-3921  
Des Moines/(515) 225-9070  
Detroit/(313) 557-6092  
Hartford/(203) 677-4551  
Honolulu/(808) 524-3719  
Houston/(713) 688-5791  
Los Angeles/(213) 645-5400  
Minneapolis/(612) 854-4054  
Nashville/(615) 385-3014  
Newark/(201) 376-1311  
New York/(212) 759-4656  
Orlando/(305) 896-1940  
Philadelphia/(215) 643-5767  
Phoenix/(602) 265-3909  
Pittsburgh/(412) 931-3663  
Puerto Rico/(809) 783-5320  
San Diego/(714) 460-2020  
San Francisco/(415) 968-7020  
Seattle/(206) 455-2044  
St. Louis/(314) 291-1430  
Washington, D.C./ (703) 790-0555

### International:

TRW DATACOM—  
International/Los Angeles, California, TELEX 691286 (213) 475-6777  
Sydney, Australia/922-3100  
Vienna, Austria/022Z/36 2141  
Brussels/76 20 30  
Rio de Janeiro, Brazil/246 7661  
Toronto/(416) 438-9800  
Copenhagen/(01) 965-366  
Guayaquil, Ecuador/394 844  
London/903-6261  
Helsinki/90-661 991  
Paris/581 12 70  
Hanover, Germany/(0511) 634-011  
Rotterdam/(010) 216244  
Tel-Aviv, Israel/(03) 410565  
Milan/316 333  
Tokyo/264 6135  
Oslo/15 34 90  
Makati Rizal, The Philippines/877 294  
Singapore/10/378175  
Johannesburg/724-9301  
Stockholm/(08) 188295  
Lyss/Berne/(032) 844240