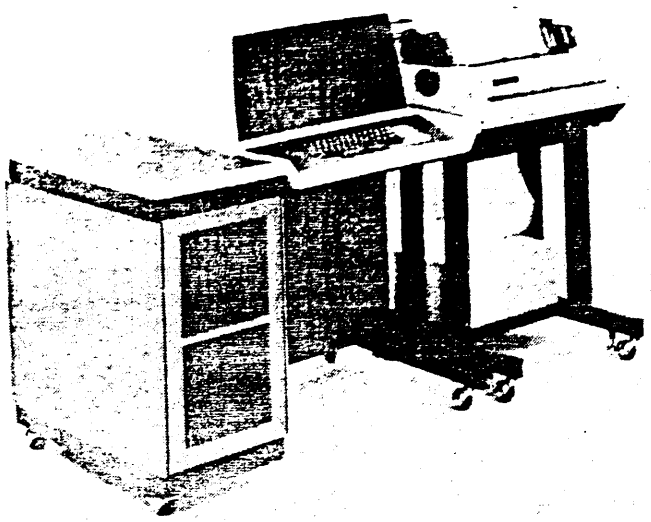
Diablo 3200



A basic Diablo 3200 includes 20K bytes of main memory, one 1920-character CRT with keyboard, two double-density diskette drives, and a 45-cps HyType printer. Purchase price is $19,400.

Diablo Systems Incorporated, a Xerox company, and a supplier of minicomputer peripheral equipment since 1969, has combined its own mass storage devices, terminals, and printers with a new central processor to create the Diablo 3200 small business system. The system is sold with applications software through distributors at prices ranging from $19,400 to $60,000.

MANAGEMENT SUMMARY

Diablo Systems Incorporated was founded in 1969 to provide peripheral equipment and supporting services for the small computer systems industry. Since then, it has become a peripherals design innovator and a leader in providing disk drives and serial printers to the OEM market. By 1978, the company had shipped more than 100,000 disk drives and printers. In April 1972, Diablo was acquired by Xerox Corporation and began a period of significant growth which culminated in the introduction of the Diablo 3200 small business system in 1976.

In the United States, the Diablo 3200 system is distributed and supported by Shasta General Systems, of Burlingame, California, through its dealer network. Application software for the system is developed by Shasta and is currently available for order entry, billing, accounts receivable, inventory control, manufacturing, general ledger, and financial statement preparation; client reporting for accountants and attorneys; and medical billing systems. Word processing software is also available through Shasta, permitting the combination of data processing and word processing capabilities when addressing application requirements.

The Diablo 3200 is available in single or multiple CRT station systems with diskette and/or disk-based data files. The Diablo HyType metal daisy-wheel printers are supported, as well as the Diablo 200-cps bidirectional matrix printer.

The basic Diablo 3200 consists of a CPU with 20K bytes of main memory, a 1920-character CRT/keyboard, two double-density diskette drives, and a printer on a stand. Main memory can be increased to a maximum of 65K bytes in 4K-, 8K-, or 16K-byte increments. Up to four ➤

CHARACTERISTICS

MANUFACTURER: Diablo Systems Incorporated, 1270 East Arques Avenue, Sunnyvale, California 94086. Telephone (408) 733-2300.

Diablo Systems Incorporated, a subsidiary of Xerox Corporation, manufactures moving-head disk drives, daisy-wheel and matrix printers, terminals, and the Diablo 3200 small business system.

DISTRIBUTOR: The Diablo 3200 is marketed in the United States exclusively by Shasta General Systems through a dealer network. Shasta is located at 895 Stanton Road, Burlingame, California 94010. Telephone (415) 692-0722. Dealers are located in 40 metropolitan marketing areas: 7 Northeast, 7 Southeast, 8 Central, 7 Southwest, and 12 West.

MODEL: Diablo 3200

DATE ANNOUNCED: October 1976.

FIRST DELIVERY: December 1976.

NUMBER INSTALLED: 200.

DATA FORMATS

BASIC UNIT: The basic data unit used by the Diablo 3200 is the 8-bit word.

FIXED-POINT OPERANDS: May have 8 or 16 digits.

FLOATING-POINT OPERANDS: None.

INSTRUCTIONS: An instruction consists of a one-byte operation code followed by a one-byte address.

INTERNAL CODE: ASCII.

MAIN STORAGE

TYPE: MOS RAM.

CYCLE TIME: 488 nanoseconds.

CAPACITY: The Diablo 3200 is equipped with a minimum of 20K bytes of random-access memory. It can be expanded to 65K bytes in increments of 4K, 8K, or 16K bytes.

CHECKING: Standard; one check bit per 8-bit word.

STORAGE PROTECTION: None.

RESERVED STORAGE: 8K bytes of MOS RAM memory is reserved for operating system software. ➤

Diablo 3200

single- or double-density diskette drives are allowed. An optional two-sided diskette is also available. In addition, Diablo 44B disk drives can be added to the system, and configurations can include disk and diskette combinations. Multiple-station systems can include up to eight CRT's and/or printers.

The Diablo system offers communications capabilities through a synchronous/asynchronous programmable communications controller. Specific support is available for Teletype-compatible asynchronous communications and for the IBM 2780 bisynchronous protocol.

Software for the Diablo 3200 includes single- and multiple-station operating system software, applications development software, and utility software.

The operating system includes a command processor, an interrupt processor, device drivers, a file manager, and common subroutines. The operating system processes all interrupts, carries out commands issued at the keyboard, interfaces executing programs with hardware elements, and manages files on disk or diskette.

Utility software provides the user with file handling, diagnostic, and communications capabilities as well as access to the system real-time clock.

The Diablo 3200 applications development software includes a job control language (JCL) executor, an assembly language, the Diablo Applications Compiler Language (DACL), an editor, and a sort package. The Shasta application software has been written exclusively in DACL.

Diablo 3200 hardware configurations range in price from $19,400 up to $60,000. Shasta application system prices vary, depending upon the application involved and the amount of change requested by the end user. Individual application charges cover a broad spectrum from $500 to more than $5,000.

USER REACTION

During March 1978, Datapro interviewed 6 Diablo 3200 users selected at random from a list of 11 users supplied by Shasta General Systems, the U.S. distributor of the Diablo 3200. Each of the users had one system. One of the users had been using his system for one year, two others for eight months, and the remaining three users had had their Diablo 3200's installed for less than six months. All six users, representing two CPA firms, two manufacturers, one distributor, and one medical group, were employing their systems for basic accounting functions. In addition, two of the users had word processing software, and another was using the system for some manufacturing applications. The medical group had tailored its system to include many specialized functions such as diagnostic and seasonal information summaries and automatic label and letter production.

Each Diablo 3200 was configured with one CRT and one printer. Four of the systems had four diskette drives, one had three drives, and one had two. Three of the systems had 32K bytes of memory and three had 24K bytes.

Listed below are the results of the Diablo 3200 user

CENTRAL PROCESSOR

The Diablo 3200's central processor is manufactured by Diablo using [redacted] It responds to interrupt requests from each of the controllers, participates in the DMA facility, and influences the direct memory access operation of the CRT and diskette controllers. The processor comprises seven accessible working registers, a program counter, a stack pointer, and a processor status register (PSR) containing five status flags which reflect the current condition of the processor.

Three buses link the device controllers to the processor and memory: the device address bus, the memory address bus, and the data bus.

The device address bus is an 8-bit unidirectional bus originating at the processor and connecting to all device controllers. Eight lines permit a maximum of 256 unique addresses to be generated. The bus contains an address when there is a programmed transfer of data between processor and controller.

The memory address bus is a 16-bit unidirectional bus which terminates at memory and connects to all DMA device controllers as well as memory and the processor. Sixteen lines permit a maximum of 65,536 memory locations to be addressed. The bus contains an address when there is a memory access by any DMA device.

The data bus is an 8-bit bidirectional bus connecting the processor and all device controllers in the system. Each time data is transferred in the system as a result of a direct memory access, a programmed input/output, or an interrupt operation, the data bus carries the data being moved in the direction required.

In addition, three sets of control lines also connect the device controllers and the processor: the DMA priority chain, the interrupt request/acknowledge lines, and the input/output command lines. Complete descriptions of the control lines and their functions are included in the Interrupts and Input/Output Control entries below.

CONTROL MEMORY: Consists of 1K bytes of read-only memory (ROM) containing the initial program load (IPL) routine and diagnostics that check the operational readiness of the system prior to IPL.

REGISTERS: The CPU contains two 16-bit registers and seven 8-bit registers which can be accessed by the programmer using assembly-language commands. The two 16-bit registers are the stack pointer (SP) and the program counter (PC). One of the 8-bit registers is used as the accumulator, while the remaining registers are used for temporary storage of data and addresses.

ADDRESSING: Memory can be accessed in three ways: direct, indirect, and immediate. Registers can be addressed only directly; that is, a register being accessed is specified as part of the instruction. In direct addressing, the memory location to be accessed is specified as part of the instruction. In indirect addressing, the assembly-language statement specifies a computer register which, in turn, contains the address of the memory location to be accessed. Immediate addressing means that the memory location to be accessed is located immediately following the memory location containing the instruction.

INSTRUCTION REPERTOIRE: There are 6 groups of instructions which contain 78 instructions and 8 pseudo instructions. They are: data transfer (10), arithmetic (14), logic (15), branch (29), microprocessor control (10), and pseudo (8). The data transfer category includes those instructions which move data between registers and between registers and memory. The arithmetic category comprises all arithmetic operations, while the logic group contains the instructions which perform logical operations such as AND, OR, complement, etc. The branch category groups together all those instructions which conditionally or unconditionally

Diablo 3200

PERIPHERALS/TERMINALS

MODEL	DESCRIPTION & SPEED	MANUFACTURER
3353 Workstation	12-inch CRT, 1920 characters, 24 lines by 80 characters, 7 x 9 dot matrix, programmable, 96 ASCII character set; typewriter-style keyboard, 10-key numeric pad and control keys	Diablo
HyType II 1345	Serial printer; 132 or 158 positions, daisy wheel, 10 or 12 characters per inch, high-speed tabbing; 45 or 55 cps	Diablo
HyType II 1355WP	Serial printer; 132 or 158 positions, metal daisy wheel, 10 or 12 characters per inch; 40 cps	Diablo
Series 2300	Serial printer; 132 positions, 7 x 9 dot matrix, bidirectional, microprocessor-controlled; 200 cps	Diablo

	Excellent	Good	Fair	Poor	WA*
Ease of operation	5	1	0	0	3.8
Reliability of mainframe	5	1	0	0	3.8
Reliability of peripherals	5	1	0	0	3.8
Maintenance service:					
Responsiveness	5	1	0	0	3.8
Effectiveness	4	2	0	0	3.7
Technical support	5	1	0	0	3.8
Operating system	1	2	0	0	3.3
Compilers and assemblers	1	2	0	0	3.3
Applications programs	4	2	0	0	3.7
Ease of conversion	5	1	0	0	3.8
Overall satisfaction	5	1	0	0	3.8

*Weighted Average on a scale of 4.0 for [redacted].

The ratings for the Diablo 3200 were high. The users were voluble and enthusiastic about both the system performance and the dealer service and support. Among the comments were: [redacted] "Designed to be fault-free but with top-notch service just in case—and you have your own programmer." "The system can grow with us. We can add CRTs, printers, and communications capabilities as we expand." "Does everything they said it would—plus." "We got twice as much information as we asked for." All of the users commented that anyone could run the 3200. One of the CPA firms installed the system at the height of the tax season and reported that within three days two people were running programs with no problems. "Heavy use of the system led to initial problems," this user commented, "but fast service took care of them all."

All of the users were utilizing the dealers' application programs and were satisfied with their range and performance. The medical group was especially impressed with all they were able to do with their system, and another of the users praised the "fast, accurate" aging program that keeps him "right up to date." None of the users had done any of their own programming so far, but two of them intended to take programming courses offered by the distributor to learn how to create programs for their systems. Only three of the users rated the systems software, and their opinions were based on very brief exposure during the conversion process.

The Diablo 3200 has certainly impressed these users—who had little prior data processing experience—with its speed, efficiency, and reliability. The proximity of a Shasta dealer office had a lot to do with their enthusiastic reaction, and Shasta seems to be more than accommodating. One of the users said there was always a fast response to her calls.

change the sequence of instruction execution. Microprocessor control includes those instructions that direct the computer to perform some function such as manipulate stack pointer, halt, etc. The pseudo group comprises those instructions that command the assembler rather than the computer.

INSTRUCTION TIMINGS: Instruction execution timings are shown in microseconds for full-word fixed-point operands.

Load/Store:	2.5 to 14
Add/Subtract	3.5 to 24
Compare and Branch:	5 to 20

INTERRUPTS: The interrupt request/acknowledge lines connect to all system device controllers and tie directly to the processor. Each device controller is assigned a unique interrupt priority identification determined by its need to access the processor in comparison with other system devices. The controllers generate interrupts to the processor, which permits interrupts to be enabled or disabled by program control. Eight levels of priority interrupt are possible. An executing program can enable or disable all interrupts, enable interrupts above a specific priority level (all those below the level are disabled), and selectively enable or disable interrupts from individual controllers. Interrupt nesting occurs when a program processing an interrupt is itself interrupted by a higher-priority interrupt.

PHYSICAL SPECIFICATIONS: The Diablo 3200 workstation is 29 inches high, 39 inches wide, and 26 inches deep, and weighs about 290 pounds. It requires either 115-VAC, 60-Hz or 220-VAC, 50-Hz grounded AC power. The system can operate in temperatures from 15.5 to 35 degrees C., and relative humidity tolerance is 20 to 80 percent, noncondensing. No special air conditioning is required.

INPUT/OUTPUT CONTROL

The peripheral devices connect to the system via their associated controllers. The input/output command lines connect to each controller and the processor to inform all controllers which type of data transfer is about to occur. Data is transferred in the system in two ways: under processor control via input and output instructions, or as the result of a direct memory access operation. All controllers generate an interrupt to the processor, and status information is transferred between the controller generating the interrupt and the processor. However, only the diskette and CRT controllers and the processor can directly access memory. The DMA devices have an additional line, the DMA priority chain, connecting their controllers to the processor. The chain establishes which DMA device or controller is in control of memory so that each accesses memory in the order prescribed by the DMA priority scheme established for the system.

CONFIGURATION RULES

The Diablo 3200 is available in single-station or multiple-station configurations using either diskette or cartridge disk

Diablo 3200

"If I can't get the programmer or salesman we work with, I can get the president of the dealership," she reported. "Someone is always there to help."□

storage or both. A single-station system normally has 20K to 24K bytes of MOS RAM, expandable to 64K bytes, one alphanumeric CRT display and controller, one Model 1345 or 1355 Diablo HyType II printer and controller, at least two flexible diskette units and controller, and one typewriter-paired keyboard with control panel and controller. Cartridge disk storage may be used with or in lieu of diskette storage; this normally increases memory requirements to 32K bytes.

A multiple-station system has at least 32K bytes of MOS RAM, expandable to 64K bytes, along with all the components listed for a single-station system, an eight-port multi-terminal control unit, and up to eight stations consisting of either CRT/keyboard terminals or Diablo HyTerm printers or both.

Permissible disk/diskette configurations include: four diskette drives; four diskette drives plus two cartridge disk subsystems; or four cartridge disk subsystems.

Any system can be configured with an optional asynchronous/synchronous serial communications controller. The Diablo Series 2300 matrix printer and controller can be substituted for the Model 1345 or 1355 Diablo HyType printer.

MASS STORAGE

FLEXIBLE DISKETTE UNIT: Stores 500K bytes of data on each of two IBM-type diskettes for a maximum storage capacity of one megabyte. Each platter is formatted into 77 tracks, and each track is divided into 52 sectors of 128 bytes each. Recording density is 6500 bits/inch. Rotational speed is 360 rpm. Average rotational time is 150 to 300 milliseconds, and average access time is 150 to 300 milliseconds. Data transfer rate is 250K bits/second. [redacted] A maximum of four diskette drives can be configured with the Diablo 3200.

MODEL 44B CARTRIDGE DISK DRIVE: Stores 5 megabytes of data on each of two disks, one fixed and one removable, for a maximum storage capacity of 10 megabytes. Rotational speed is 2400 rpm, and average rotational delay is 12.5 milliseconds. Recording density is 2200 bits/inch. There are 4 tracks per cylinder, 408 tracks per cartridge surface, 200 tracks per inch, and 2 surfaces per cartridge. Each track has 24 sectors of 256 bytes each. The data transfer rate is 312K bytes/second, and the average access time is 50 milliseconds. The unit is installable in a separate top-loading cabinet and occupies one slot in the Diablo 3200 CPU. A maximum of 4 Model 3200-14 drives can be used with the Diablo 3200 in addition to or in place of the diskette unit.

INPUT/OUTPUT UNITS

See Peripherals/Terminals table.

COMMUNICATIONS CONTROL

An optional communications controller interfaces the Diablo 3200 with other computer systems or terminals for batch processing. The controller is configured for an EIA Standard RS-232C interface which can connect to Bell System type 103, 113, 201A/8, 203, 208A/B, and 209A or other equivalent modems. The controller provides asynchronous and synchronous communications using various protocols, including the Binary Synchronous Communications (BSC) control method, in full- and half-duplex mode. In asynchronous mode, data rates range from 60 to 9600 bits/second. In synchronous mode, data rates range from 300 to 9600 bits/second. The controller also provides a programmable cyclic redundancy check.

SOFTWARE

Diablo provides three groups of software with the Diablo 3200: disk operating systems for both small single-station and larger multiple-station systems; applications development software including languages, editors, and sort; and utility software.

OPERATING SYSTEMS: The Diablo 3200 *single-station operating system* is a memory-resident disk operating system which is loaded into the first 8K of main memory at IPL time. It consists of four major programs: Command Processor, Interrupt Processor, File Manager, and DACL Program Interpreter.

- The Command Processor, responding to keyboard commands, acquires programs from diskette and loads them into memory for processing. It also provides the operator with debugging functions and maintains the system clock.
- The Interrupt Processor permits interrupts from the system hardware elements to be processed concurrently with and transparent to normal system processing.
- The File Manager provides programs executing in the system with the capability to create, access, and delete files from diskette storage.
- The DACL Program Interpreter processes the compiled code and causes the specific functions to be executed at the basic machine level.

In conjunction with the Interrupt Processor, device drivers permit executing programs to access the system peripheral devices. The device drivers are aided by 18 common subroutines which perform such tasks as converting binary code and interfacing assembly-language applications to the device drivers and to the Command Processor.

The Diablo 3200 *multiple-station operating system* is a memory-resident disk operating system which is loaded into the first 9.5K of main memory at IPL time. It supports up to eight terminals (consisting of CRT's and/or printers), up to four cartridge disk drives, and/or up to four flexible diskette drives. It consists of the Command Processor, Interrupt Processor, File Manager, and DACL Program Interpreter, whose functions are as described in the single-station operating system. Each station is allocated a separate partition in memory, the size of which can vary for each station and can be changed at IPL time.

LANGUAGES: Diablo offers an Assembly Language and the Diablo Applications Compiler Language (DACL) for use on the Diablo 3200.

The System 3200 *Assembly Language* provides the basic repertoire of instructions including data transfer, arithmetic, logical, branch, processor control, and pseudo. In addition, the language accommodates labels which are defined in one segment of assembly-language statements and referenced in other segments (global labels), and can perform multiple-segment assembly by assembling a collection of segments. Multiple-segment assembly permits the programmer to write subroutines that can be referenced by other programs. A cross-reference listing of statements can be produced on request with each assembly.

DACL is a high-level business applications language which provides a repertoire of English-like instructions in six groups: directive; control; string; arithmetic; keyboard, CRT, and printer input/output; and disk input/output. Their functions are as follows:

- Directive instructions define alphabetic, integer, and real numeric variables and define their initial values and sizes.
- Control instructions permit conditional branches within a program and allow a DACL program to call another DACL or assembly-language program into execution.

Diablo 3200

- String instructions perform string-handling operations.
- Arithmetic instructions add, subtract, multiply, divide, move, and compare real or integer numeric variables. Arithmetic operations are performed on the actual string variables rather than on their binary equivalents. Decimal arithmetic is accommodated.
- Keyboard, CRT, and printer I/O instructions control the I/O functions of these devices.
- Disk I/O instructions perform the basic disk handling functions for reading, writing, and manipulating diskette files. DACL can accommodate fixed-length as well as space-compressed record files, can record numeric data as decimal, and can directly access a record within a file or create index files and access records via the index files.

The System 3200 *Editor* and *Updater* permit assembly-language and DACL programs, source data, and text files to be created and edited interactively from the keyboard. During file creation and editing, commands can perform insert, delete, modify, and search functions. In addition, commands perform file handling operations and control the operations of the CRT and printer. Creation of program, source data, and text files differ generally only in the preset format each type of file requires. The operator specifies the type of file upon initiation, and the Editor produces the appropriate format. During the editing process, the Editor can locate and modify a string of data within a file and then proceed to modify all identical strings in the file. The Updater can also operate in batch mode, where all commands are read from an update file.

The System 3200 *Sort/Merge* package permits a sort using a maximum of 10 different fields in one pass. The 10 fields can contain a maximum of 125 characters. In addition, the sort can be performed on ASCII or binary data. Variables within each field can be arranged in ascending or descending order, beginning with the leftmost character or numeral and moving right or vice versa. Additionally, the sort/merge package can merge up to five presorted files and create "automatic" sort or merge programs. An automatic program is a file of specific sort parameters (input file and unit, output file and unit, order of sort, output, etc.) which has the ability to call those sort package functions needed. With an automatic program, files can be sorted in a prescribed manner without requiring the operator to re-enter sort or merge parameters for each file to be sorted.

Several types of output can be selected from sort/merge operations: a sequenced file, a sequenced printout, an index file, and a sequenced printout from a previously existing index file. Sort output files can be allocated by the operator prior to the sort or by the sort program during the sort process. Additionally, the operator can instruct the sort package to write-protect and/or truncate the output file.

UTILITIES: Diablo 3200 utility software provides the operator with file handling, diskette/disk handling, diagnostic, and communications capabilities as well as access to the system real-time clock.

The FILES utility provides 12 individual file handling functions, some of which are allocating, deleting, and truncating individual files; protecting and unprotecting files; renaming and dating files; and displaying or printing the files directory.

Seven other utilities provide diskette/disk handling capabilities and include formatting disk; initializing the disk file directory; displaying on CRT or printer the contents of a file in either binary code (DUMP) or ASCII code (PRINT); copying the contents of a file from a source location to a destination location either by overlaying or appending to the destination data (COPY); moving selected files from one disk to another disk (SAVE); and saving the entire contents of a disk to another disk (DISK COPY).

Eight diagnostic utilities perform tests on various system components to help isolate hardware errors. These include a disk memory test, a disk compatibility test, a CRT memory test, a disk sequential scan test, two disk exerciser tests, and two memory tests. Additionally, a programming language called SERVANT is provided to write other special diagnostic routines.

Another utility, FIXD, permits access to an individual sector on disk, the correction of data in that sector, and returning the corrected sector to disk.

The communications function is provided by two utilities, ASR and BSC, which permit asynchronous and synchronous communications in batch mode.

Access to the system real-time clock is provided by the utilities TIME and TIME SET.

APPLICATIONS: The Diablo 3200 is marketed primarily as a small business system with application software developed by Diablo's distributors. In the United States, Shasta General Systems and its dealers have developed a library of application packages for end users. Shasta also has created word processing software which permits the combination of data processing and word processing capabilities when addressing application requirements.

Representative samples of Shasta application software are described below:

The *General Accounting System* consists of a General Ledger (G/L) module, an Accounts Payable (A/P) module, an Accounts Receivable (A/R) module, a Payroll (PY) module, and a Financial Reporting (F/R) module. G/L includes the detail of all journal entries and provides the necessary trial balance reports (summary trial balance, detail trial balance, working trial balance, budget trial balance) for balancing and validation of all G/L accounts. A/P includes the functions necessary to accrue liabilities to vendors by open items, distribute expenses to G/L, create vendor checks, and analyze vendor liability by aging period, vendor cash flow, and year-to-date purchases by vendor. The A/R module includes the functions necessary to enter invoices as open items and cash receipts into the A/R files and to prepare customer statements, customer aged trial balance in detail and summary, customer sales analysis, and sales tax analysis. The PY module offers the options of wage accrual and labor distribution to cost centers. It provides for entry of time card data, creation of checks with automatic calculation of all taxes and deductions, and preparation of weekly and monthly reports of earnings, deductions, labor distribution, monthly union reports, quarterly payroll summary report, and 941A and W2 forms. The Financial Reporting module includes the Balance Sheet, Income Statements with options for ratio to sales and dollar or percentage comparison to last year, schedules with options for ratios and dollar or percentage comparison to last year, Budget Reports with options for dollar and percentage variance, Budget Schedules with options for dollar and percentage variance, and Statement of Changes in Financial Position. All of the above modules include master file lists.

The *Wholesale Sales Accounting System* includes all of the functions of the Accounts Receivable module, and in addition provides for the preparation of invoices and the control of inventory and inventory back orders, including inventory status, analysis of critical items, and reorder analysis. This system is also compatible with all modules of the General Accounting system.

The *Medical Management System* consists of a Medical Group Practices module and a Medical Laboratory module. Each module provides for entry of charges, payments, and adjustments and for the preparation of special documents and reports, including: patient insurance forms; patient statements (or "Superbills") which can be used in lieu of insurance

Diablo 3200

forms for many private insurance companies; accounts receivable aged trial balance; and monthly reports of revenue by insurance company, by treating doctor, by referring doctor, by RVS code, by payments type, and by facility/department.

The *Accountant's Client Reporting System* is designed to give accountants the ability to provide complete accounting service and financial reporting for their clients, including multiple-level reporting at corporate, division, and cost center/department levels. It provides for transaction entry from various sources such as sales, cash disbursements and payroll, and a full array of G/L trial balances and financial reports: trial balance in summary or detail, working trial balance, budget trial balance, balance sheet, income statements with options for ratio to sales and dollar and percentage comparison to last year, schedules with options for ratios and dollar and percentage comparison to last year, budget reports with options for dollar and percentage variance, budget schedules with options for dollar and percentage variance, statement of changes in financial position, payroll summary report, and 941A and W2 forms.

PRICING

POLICY: The Diablo 3200 is sold internationally by distributors. The U.S. distributor is Shasta General Systems, 895 Stanton Road, Burlingame, CA 94010; telephone (415) 692-0722. Shasta markets the equipment through a dealer network in more than 40 metropolitan areas. Sales, application installation, and hardware maintenance are all provided by the local dealer.

SOFTWARE AND SUPPORT: Operating system software, applications development software, and utility software are included in the price of the packaged Diablo 3200 configurations. Application packages for the Diablo 3200 are developed, sold, and maintained by Shasta General Systems. Prices vary based on the application involved and the amount of change requested by the end user.

EQUIPMENT: The components and prices of numerous packaged configurations of the Diablo 3200 system are listed in the Equipment Prices section that follows.■

EQUIPMENT PRICES

		Purchase Price	Annual Maint.
BASE SYSTEMS			
	Central processor with 20K bytes of RAM memory, 1K bytes of ROM, one 1920-character CRT with keyboard, desk housing, printer stand, and forms tractor:		
3206-10	Base system with 45-cps HyType II printer and two double-density diskette drives (1 megabyte)	$19,400	$1,350
3207-10	Base system with 45- or 55-cps HyType printer and three double-density diskette drives (1.5 megabytes)	20,900	1,375
3208-10	Base system with 45- or 55-cps HyType II printer and four double-density diskette drives (2 megabytes)	22,400	1,400
3216-10	Base system with 200-cps matrix printer and two double-density diskette drives (1 megabyte)	21,900	1,450
3217-10	Base system with 200-cps matrix printer and three double-density diskette drives (1.5 megabytes)	23,400	1,475
3218-10	Base system with 200-cps matrix printer and four double-density diskette drives (2 megabytes)	24,900	1,500
EXPANDED SYSTEMS			
	Central Processor with 32K bytes of RAM memory, 1K bytes of ROM, one 1920-character CRT with keyboard, desk housing, printer stand, and forms tractor:		
3200-41	Expanded system with 45-cps HyType II printer and one Diablo 44B 10-megabyte disk drive	29,085	2,300
3205-41	Expanded system with 45-cps HyType II printer, one Diablo 44B 10-megabyte disk drive, and one double-density diskette drive	32,070	2,510
3206-41	Expanded system with 45-cps HyType II printer and two double-sided, double-density diskette drives	21,645	1,615
3210-41	Expanded system with 200-cps matrix printer and one Diablo 44B 10-megabyte disk drive	31,470	2,465
3215-41	Expanded system with 200-cps matrix printer, one Diablo 44B 10-megabyte disk drive, and one double-density diskette drive	34,450	2,675
3216-40	Expanded system with 200-cps matrix printer and two double-sided, double-density diskette drives	24,030	1,785
MEMORY OPTIONS			
3301	4K-byte increment	800	30
3302	8K-byte increment	1,500	60
3303	16K-byte increment	2,500	90
MASS STORAGE			
3342	Additional 1-megabyte diskette drive	2,000	190
3346	Additional 10-megabyte cartridge disk drive	13,400	1,200
PRINTERS			
3356	Additional HyType II Serial Printer; 45, 55, or 40 cps	4,950	340
3358	Additional Matrix Printer; 200 cps	6,000	380
TERMINALS			
3350	Multi-terminal control unit	1,635	115
3353	Workstation CRT/keyboard; requires 3350	3,000	210
COMMUNICATIONS			
3351	Synchronous/asynchronous communications option	895	65