IBM System/370



Compatibility Interface. The RPG II compiler can execute in a background partition under DOS Release 24 or in a batched-job foreground partition with Release 25 or later, and requires a minimum of 14K bytes with disk work files.

Compilers for the original System/360 RPG language are also available for operation under DOS or OS/360. If desired, the generated programs can be executed immediately. In addition to their basic report-writing functions, RPG programs can handle various types of calculations, update files, perform table look-up operations, accept data from multiple input files, and accommodate user-coded routines to handle functions that cannot be programmed in the RPG language.

ASSEMBLERS: The Assembler language, often called BAL (Basic Assembly Language) or ALP (Assembly Language Programming), is the standard symbolic assembly language used to write machine-oriented programs for all models of the System/370. Assemblers are therefore furnished at all levels of System/370 software support. Facilities for handling macro-instructions and literals are provided at all levels. Though the Assembler language is essentially the same at all the various levels, there are certain differences in the handling of literals, constants, and macros that preclude complete freedom to transfer Assembler-coded programs between the various operating systems.

DOS and OS/360 users are offered a choice of two Assemblers. The two DOS Assemblers require 10K and 44K bytes of core storage. OS/360 Assemblers E and F require a minimum of 18K and 44K bytes, respectively. In both cases, the larger version provides considerably faster assembly.

The new DOS/VS Assembler is a superset of the earlier DOS Assemblers that implements all of the System/370 instructions and promises improved performance through the use of a pre-edited macro library.

OS Assembler H is a separately priced Program Product that requires at least 200K bytes. It is upward-compatible with the other System/370 assemblers and features improved assembly speed (as much as 50 percent faster than earlier versions) macro language extensions, improved diagnostics, batched assemblies within a single job step, and support of the new machine instructions in the System/370 processors. OS Assembler H runs under MFT, MVT, VS1, or VS2. A subset of Assembler H-the System Assembler-is the only The Model 158 Processing Unit provides up to 4 million bytes of MOS main storage and is available in both uniprocessor and dual-processor (MP) configurations. A feature of the Model 158 is its CRT display console with light-pen input. An 8-drive 3330 Disk Storage subsystem is in the background.

language translator provided as a standard component of VS.

UTILITY ROUTINES: Sort/Merge programs are offered at all levels of software support for the System/370. All are generalized programs which are controlled by user-supplied parameters, and all can accommodate either fixed or variable-length records. Improved Sort/Merge programs are offered for both DOS and OS. In addition, a new DOS/VS Sort/Merge is available for DOS/VS Release 29 and later releases.

The DOS/VS Sort/Merge provides all the functional capabilities of the DOS Sort/Merge plus support for the 3340 Disk Storage Facility, 3330/3333 Disk Storage (including Rotational Position Sensing), SAM data sets, and the 3410, 3411, and 3420 Magnetic Tape Units. It also includes the capability to operate in both background and foreground partitions, the ability to be invoked by COBOL, PL/1, or the Auto Report Feature of RPG II, and the ability to sort or merge on control fields with mixed data formats. DOS/VS Sort/Merge requires a minimum virtual or real partition of 16K bytes.

The enhanced OS/VS version of the Sort/Merge utility program, called OS-SM1, provides additional features and improved performance over the OS Sort/Merge program. It fully supports the 3330, 3330 Model 11, and 3340 Disk Storage Facilities, ASCII-formatted files on 9-track magnetic tape, input and output on QSAM-supported devices, and expanded exit facilities to assist the user in writing his own code additions. OS/VS Sort/Merge requires a minimum of 32K bytes of main storage; a larger allocation of main memory is required for the use of VSAM files.

Each software level also includes an appropriate complement of data transcription, diagnostic, and other utility routines.

RETAIN/370: This is a system maintenance software package introduced with the System/370. Its acronym stands for "Remote Technical Assistance and Information Network." Its purpose is to provide special assistance to the IBM Customer Engineers when they encounter unusual difficulties in solving complex hardware maintenance problems.

IBM is creating data banks of technical information on hardware problems in Technical Support Centers in New

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➤ York, Chicago, and Los Angeles. Through RETAIN/370, Customer Engineers can dial up access to these data banks and request any available information in the specific problems at hand. A technician at the support center views any available information on a display screen and relays anything pertinent to the Customer Engineer. If the results are uninformative, the technician at the support center can initiate remote testing of the malfunctioning unit or system for his own analysis and evaluation. When a solution is finally reached, it is stored in the support center's data bank for use whenever a similar problem arises.

3704/3705 COMMUNICATIONS CONTROLLER SOFT-WARE: In its native mode, a 370X Communications Controller runs under control of a Network Control Program (NCP) that resides in a minimum of 48K bytes of other administrative support for NCP must be performed on a System/370 host processor using OS/MFT or OS/MVT in a partition or region of 48K to 50K bytes. Under DOS, the 370X can be operated in a 270X emulation mode only. A virtual storage version of the Network Control Program, NCP/VS, is planned for use in conjunction with VTAM under DOS/VS as well as OS/VS. NCP/VS will provide all the capabilities of NCP plus the capability for simultaneous 270X emulation and NCP operation. (Refer to Reports 70D-491-31 and -32 for full descriptions of the 3704/3705 Communications Controllers and the associated software.)

MSP/7 HOST PROGRAM PREPARATION FACILITY II: This facility permits the preparation of System/7 programs on a System/370 computer under DOS, DOS/VS, OS, or OS/VS. HPPF II provides an MSP/7 Macro Library, with System/7 assembler/macro control and I/O subroutines, and the System/7's Host Macro Assemblers (ASM/7), Host Linkage Editors (LINK/7), and Host Storage Load Formatting Program (FORMAT/7). The HPPF II programs are classified as System Control Programming and can run in a paged mode on the System/370 virtual systems.

APPLICATION PROGRAMS: An enormous number of "packaged" application programs-more than 2500-are now available for the System/370 at no charge from IBM as "Prior Use" Type I, II, III, or IV software. These programs were in general use on the System/360 prior to unbundling on December 31, 1969. While many of these programs are rather simple utilities, others are major systems representing dozens of man-years of effort that have subsequently been made available in improved and maintained versions for a fee as IBM Program Products. The Prior Use programs are provided with no free IBM support. Information concerning these programs is available in the Catalog of Programs for IBM System/360 Models 25 and Above (GC20-1619).

In the separately priced application programs category, three types of programs are available: Program Products, Field Developed Programs (FDP's), and Installed User Programs (IUP's). Limited support is provided for the FDP's and IUP's (which were first made available in August and October 1971, respectively); it consists only of pertinent error-correction information during the first six months after initial general availability of the programs. A full list of FDP's and IUP's with prices, dates when support ends, and reference manual numbers can be found in the *IBM Computer Information Card for FDP's and IUP's* (GB21-9949).

A list of the currently available System/370 Program Products can be found in the price list at the end of this report, along with an indicator showing whether or not each program can run in virtual (paged) mode. Also see the comprehensive report on IBM Program Products – Applications (Report 70E-491-21) and the detailed reports on the two IBM Program Products of broadest general interest: IMS (Report 70E-491-01) and CICS (Report 70E-491-02).

PRICING

EQUIPMENT: The following systems illustrate typical System/370 configurations. Obviously, they comprise only a small sampling of the extensive configuration possibilities within the System/370 line. All necessary control units and adapters are included in the indicated prices, and the quoted rental prices are for short-term leases and include equipment maintenance.

SMALL MODEL 115 DISK SYSTEM: This typical Model 115 configuration consists of a 65K Processing Unit, 3203 Model 1 Printer (600 lpm), 5425 Model A2 MFCU (reads 500 cpm, punches 120 cpm), 3340 Model A2 Direct Access Storage Facility (2 drives plus control), and two 3348 Model 70 Data Modules (140 million bytes total capacity). Monthly rental and purchase prices are approximately \$6,600 and \$233,900, respectively.

SMALL MODEL 125 DISK SYSTEM: Consists of 98K Model 125 Processing Unit, 3340 Direct Access Storage Facility (2 drives, 140 million bytes), 3504 Model A1 Card Reader (800 cpm), 3525 Model P1 Card Punch (100 cpm), and 1403 Model 7 Printer (600 lpm). Monthly rental and purchase prices are approximately \$8,500 and \$339,290, respectively.

MODEL 125 TAPE/DISK SYSTEM: Consists of 131K Model 125 Processing Unit, 3340 Direct Access Storage Facility (four drives, 280 million bytes), six 3410/3411 Model 3 Magnetic Tape Units and Control (80KB), 3504 Model A2 Card Reader (1200 cpm), 3525 Model P3 Card Punch (300 cpm), 1403 Model N1 Printer (1100 lpm), and 5213 Console Printer. Monthly rental and purchase prices are approximately \$13,700 and \$510,910, respectively.

SMALL MODEL 135 DISK SYSTEM: Consists of 98K Model 135 Processing Unit with Integrated File Adapter, 3340 Direct Access Storage Facility (two drives, 140 million bytes), 3505 Model B1 Card Reader, 3525 Model P2 Card Punch, 3211 Printer, and 3210 Model 1 Console and Printer-Keyboard. Monthly rental and purchase prices are approximately \$12,100 and \$503,015, respectively.

MODEL 135 TAPE/DISK SYSTEM: Consists of 245K Model 135 Processing Unit with Integrated File Adapter, two Selector Channels, and 12K Control Storage Expansion, 3340 Direct Access Storage Facility (four drives, 280 million bytes), eight 3420 Model 3 Magnetic Tape Units (120KB) and dual-channel tape controls, 3505 Model B2 Card Reader, 3525 Model P3 Card Punch, 3211 Printer, and 3210 Model 1 Console Printer-Keyboard. Monthly rental and purchase prices are approximately \$24,400 and \$1,002,005, respectively.

MODEL 145 TAPE/DISK SYSTEM: Consists of 262K Model 145 Processor with Integrated File Adapter and two Selector Channels, 3340 Direct Access Storage Facility (four drives, 280 million bytes), eight 3420 Model 3 Magnetic Tape Units (120KB) and dual-channel controls, 2540 Card Read Punch, 3211 Printer, and 3210 Model 1 Console Printer-Keyboard. Monthly rental and purchase prices are approximately \$31,000 and \$1,296,480, respectively.

EXPANDED MODEL 145 TAPE/DISK SYSTEM: Consists of 524K Model 145 Processing Unit with four Selector Channels, Block Multiplexer Channel and Word Buffer Features, 3047 Power Unit, eight-drive 3330 Model 11 Disk Storage Facility (1.6 billion bytes), twelve 3420 Model 5 Magnetic Tape Units (200KB) and two tape controls, two 2540 Card Read Punches, two 2311 Printers, and 3215 Console Printer-Keyboard. Monthly rental and purchase prices are approximately \$47,900 and \$1,940,710, respectively.

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▶ MODEL 158 TAPE/DISK SYSTEM: Consists of 1048K Model 158-3 Processor with four Block Multiplexer Channels and two Byte Multiplexer Channels, four-drive 3340 Direct Access Storage Facility (with 2 million bytes of fixed-head storage and 278 million bytes of moving-head storage), four-drive 3330 Model 1 Disk Storage Facility (400 million bytes), twelve 3420 Model 5 Magnetic Tape Units (200KB) and two tape controls, two 2540 Card Read Punches, and two 3211 Printers. Monthly rental and purchase prices are approximately \$72,000 and \$3,100,000, respectively.

MODEL 168 TAPE/DISK SYSTEM: Consists of 2097K Model 168-3 Processor with Buffer Expansion and High-Speed Multiply Features, four Block Multiplexer Channels, two Byte Multiplexer Channels, six-drive 3340 Direct Access Storage Facility (with 3 million bytes of fixed-head storage and 416 million bytes of moving-head storage), four-drive 3330 Model 11 Disk Storage Facility (800 million bytes), twelve 3420 Model 6 Magnetic Tape Units (320KB) and two tape controls, two 2540 Card Read Punches, two 3211 Printers, and 3066 System Console. Monthly rental and purchase prices are approximately \$122,000 and \$5,267,900, respectively.

SOFTWARE: System/360 software which was being distributed by the IBM Program Library as of June 23, 1969, is available to System/370 users at no additional charge. All subsequent IBM programming announcements (except for certain modifications and improvements of existing IBM programs) are designated as either System Control Programming or Program Products.

System Control Programming provides functions which are fundamental to the operation and maintenance of a system (e.g., loading, scheduling, supervising, and data management) and is available wihout charge.

Program Products are related to the application of a system to user tasks (e.g., compilers, utility programs, and application programs). These are offered on an individual-charge basis, as listed under "Software Prices."

Also available on an individual-charge basis, but without centralized IBM programming support, are numerous Field-Developed Programs and Installed User Programs for the System/370.

SUPPORT: IBM Systems Engineering assistance is available to System/370 users at a basic rate of \$35.75 or \$44.75 per hour, depending upon the size and complexity of the system.

EDUCATION: IBM "Professional Courses" are individually priced. System Features Instruction is offered to users of IBM data processing equipment at no charge. Customer Executive Seminars, Industry Seminars, and promotional sessions are still offered at no charge by IBM invitation.

CONTRACT TERMS: The standard IBM Monthly Availability Charge (MAC) rental contract includes equipment maintenance and entitles the customer to up to 176 hours of billable time per month. Time used in excess of that amount is charged for on all machines equipped with meters, at an extra-use rate. This rate, for most System/370 components, is 10 percent of the basic hourly rate (i.e., 10 percent of 1/176 of the monthly rental for each hour of extra use).

FIXED-TERM LEASE PLAN: This plan, introduced on June 1, 1971, offers price reductions of 8 or 16 percent from the short-term monthly rental rates to users willing to sign a 12-month or 24-month contract, respectively. The Fixed-Term Leases apply to nearly all of the System/370 magnetic tape, disk, drum, and printer units and to the associated control units and features, but not to the mainframes or other types of peripheral devices. Extra-use

charges are eliminated under these leases, and purchase option accruals are available. The user has the option to extend his lease for an indefinite number of additional 12-month or 24-month periods and for one shorter period under the same terms. Users who elect to cancel a Fixed-Term Lease (even for a model upgrade) will be assessed a penalty of 2.5 times the monthly rental on a 12-month contract or 5 times the monthly rental on a 24-month contract (or the remaining rental due, whichever is less).

EXTENDED-TERM LEASE PLAN: This plan, introduced on March 1, 1972, is a more flexible lease plan under which "selected machines" are offered. The plan has a basic contract period of 24 months and offers monthly charges approximately 15 percent below the short-term rental prices. Significant provisions of the Extended-Term Plan include: elimination of additional-use charges, unlimited one-year extensions after the initial contract period, a single extension of less than one year, purchase option credits, protection against price increases during the contract period, and upgrading of installed machines (through field-installable features and model changes) without termination charges. Charges for early termination decline from a maximum of five times the monthly charge during the first six months of the lease, to four times the monthly charge during the second six months, to three times the monthly charge during the third six months, to the smaller of twice the monthly charge or the remaining amount due during the last six months of the initial contract period or during any extension.

TERM LEASE PLAN: This long-term CPU leasing plan, announced in March 1973, has a base term contract period of 48 months. It is currently available only for the System/370 virtual storage central processors (Models 115, 125, 135, 145, 158, and 168) and their associated channels, consoles, power units, power and coolant distribution units, and multisystem units. For all these machines, the monthly charges under the Term Lease Plan are the same as the basic monthly rental charges under IBM's standard short-term lease.

The key advantage of the Term Lease Plan is that it permits unlimited use of the equipment with no additional use charges. Other significant provisions include: unlimited one-year extensions after the initial 48-month contract period; a single extension of less than one year; and purchase option accruals of up to 50 percent of the purchase price. Field-installable feature and model changes can be made at any time during the contract period. Termination charges for early discontinuance of a machine or feature are equal to the lesser of: (1) 25 percent of the Term Lease Plan monthly charge multiplied by the remaining months of its base term, or (2) 12.5 percent of the Term Lease Plan monthly charge multiplied by the total number of months in its base term (i.e., 48). IBM's 10 percent Educational Allowance applies to the Term Lease Plan.

The Term Lease Plan is offered under the terms of a new amendment and supplement to the Agreement for IBM Machine Service. These agreements can be executed at the time of the order, at any time during the on-order cycle, or after the equipment is installed.

On February 3, 1975, IBM announced a modification to the purchase price provision of the Term Lease Plan that adds an escalator clause to agreements signed on or after January 8, 1975. The escalator clause permits IBM to impose a non-compounded 5 percent per year price increase on the Monthly Availability Charge after expiration of the first year of the contract.

PURCHASE OPTIONS: Effective August 1, 1974, IBM extended its Purchase Option Plan to allow users renting ▶ under the Monthly Availability Charge (MAC), Extended-Term Plan (ETP), and Fixed-Term Plan (FTP) to accumulate up to 36 months of purchase option credits toward the purchase of the equipment. The total amount accrued cannot exceed 50 percent of the purchase price of the equipment at the date of purchase. There was no change in the 48-month Term Lease Plan, which already permits the accumulation of purchase credits through 48 months to a maximum of 50 percent of the purchase price. Previously, the Monthly Availability Charge contract permitted accumulation of up to 12 months of purchase option credits, and the Fixed-Term Plan and Extended-Term Plan included provision for accumulation of up to 24 months of purchase option credits.

PRICE INCREASE: In September 1974, IBM announced a price increase of six to eight percent on the rental and purchase prices of most of its equipment, and eight percent on charges for maintenance, data processing education, Program Products, Systems Engineering services, and Field Engineering hourly (per call) services. The new purchase prices and rates for Field Engineering hourly services become effective on September 18, 1974, while the remainder of the increases became effective on January 1, 1975. Prices for the System/360, the 1130, the 1800, and the System/370 Model 155 and 165, as well as the 3767 Communications Terminal, the 3770 Data Communications System, and the System/3 Model 8, were not affected. In addition, there was no increase in the purchase prices of the System/370 Model 115 and 125 central processors. Rental prices for the System/370 Model 115 and 125 were increased by six percent; both rental and purchase prices for the System/370 Model 145, 158, and 168 were increased by eight percent.

The hourly rates for Field Engineering equipment and programming services outside the scope of an IBM agreement rose eight percent. The new rates that apply to Class 1 equipment, which includes key entry and most terminal equipment, are \$30.50 per hour for service during normal IBM working hours and \$39.50 per hour for service at other times. For Class 2 equipment, which includes unit record and accounting machines and most components of the 1130, 1620, 1800, and System/3, System/7, and System/360 Model 20 systems, the new hourly rates are \$35.75 and \$46.50. For Class 3 equipment, which includes most components of the System/360 (Models 22 and above), System/370, 1400 Series, and 7000 Series systems, the new hourly rates are \$40.75 and \$53.00.

New Systems Engineering hourly rates are \$28.00 for the Basic skill classification, \$35.75 for the General skill classification, \$44.75 for the Complex skill classification, and \$33.25 for a Group Workshop.

PURCHASE PRICE CUTS: On July 1, 1975, IBM announced significant reducations in the purchase prices of the two smallest System/370 central processors and a variety of data communications, disk storage, magnetic tape, printing, and OCR equipment.

Purchase price reductions of 15 percent were announced on the Model 115 and Model 125 central processors and on data communications devices including the 3704 and 3705 Communications Controllers, 1050 Data Communication System, 2701 Data Adapter Unit, 2740 and 2741 Communications Terminals, 2770 Data Communication System, 2780 Data Transmission Terminal, 3270 Information Display System, 3735 Programmable Buffered Terminal, 3780 Data Communications Terminal, and 7770 Audio Response Unit.

Purchase price reductions of 10 percent were announced on numerous current peripheral devices including the 1287 and 1288 Optical Character Readers, 2305 Fixed-Head Storage Facility, 2319 Disk Storage, 3203 and 3211 Printers, 3330 Disk Storage, 3340 Direct Access Storage Facility, 3410/3411 Magnetic Tape Units, 3420 Magnetic Tape Units, 3881 Optical Mark Reader, and 3886 Optical Character Reader.

These purchase price cuts make it significantly more attractive for users of leased IBM equipment to purchase their hardware, thereby helping IBM to increase its current income and reduce its inventory of System/370 equipment in preparation for a forthcoming new generation of equipment. The reduced purchase prices went into effect immediately. Rental and maintenance prices were unchanged. ■

IBM System/370 New Product Announcement

On July 16, 1975, IBM announced two new direct-access storage devices that offer increased storage capacities and reduced cost per unit of capacity for medium- and large-scale System/370 computer users. Both the new 3350 Direct Access Storage (an enhancement of the 3330 Model 1 and Model 11 Disk Storage Units) and the 3344 Direct Access Storage (which provides add-on direct-access storage for the 3340 Direct Access Storage Facility) are available for System 370 Model 135, 145, 155-II, 165-II, and 168 systems—but, significantly, not for the smaller System/370 Models 115 and 125, the two models for which IBM recently announced 15 percent purchase price reductions. Both of the new storage devices use non-removable storage media exclusively, and both can employ a combination of fixed- and moving-head access mechanisms for reading and recording data. They provide the following storage capacities:

| | 3350 (Native Mode) | 3350 (3330 Model 1 Compat. Mode) | 3350 (3330 Model 11 Compat. Mode) | 3344 |
|--|--------------------------|--|---|----------|
| Bytes per track | 19,069 | 13,030 | 13,030 | 8,368 |
| Logical cylinders per drive Capacity per drive (MB) | 555 317.5 | 2 × 404 2 × 100 | 808 200 | 696 4 |

IBM 3350 DIRECT-ACCESS STORAGE: The new 3350 Direct-Access Storage is, in effect, a higher-capacity and more cost-effective replacement for the IBM 3330 Model 1 and Model 11 Disk Storage Units, and has a capacity of approximately 317.5 million bytes per drive. There are four models of the 3350, of which two (the -F units) use both fixed- and moving-head access mechanisms and two use only moving heads. Models A2 and A2F are two-drive units that attach to System/370 Model 135, 155-II, and 165-II systems through the 3830 Model 2 Controller and to System/370 Models 145, 158, and 168 through either the Integrated Storage Controller or the 3830 Model 2 Controller. Each 3350 Direct-Access Storage subsystem must include one A2 or A2F unit. Up to three B2 or B2F units, each of which also contain two drives, can be added to the subsystem to achieve the maximum of eight drives, or a storage capacity of over 2.5 billion bytes, per 3350 subsystem.

The 3350 Models A2F and B2F include 1,144,140 bytes of fixed-head storage per drive (or over 2 million bytes of fixed-head storage per dual-drive unit). Average seek time for the remainder of the data, and for all data on the A2 and B2 drives, is 25 milliseconds. All models have an average rotational delay of 8.4 milliseconds and a data transfer rate of 1,198K bytes per second.

A standard Selective Format feature allows each 3350 drive to operate either in 3350 native mode or in 3330 Model 1 or 3330 Model 11 compatibility mode, although storage capacities are reduced in the compatibility mode of operation. Other standard features include Rotational Position Sensing, error correction of single data error bursts of up to four bits, Command Retry, Read-Only Switch, Write Format Release, and Full-Track Read Command. Full programming support for the 3350 will be provided under the OS/VS1, OS/VS2, and VM/370 operating systems. DOS/VS will provide support for the 3350 in 3330 Model 1 compatibility mode only. The 3350 is scheduled for first customer delivery in the first quarter of 1976.

IBM 3344 DIRECT-ACCESS STORAGE: The 3344 Direct-Access Storage units expand the storage capacity of the 3340 Direct-Access Storage Facility and can be intermixed with 3340 Model B1 and B2 units in a 3340 subsystem. Each 3344 Model B2 or B2F is a two-drive unit with a capacity of 560 million bytes (280 million bytes per drive). The maximum 3340 subsystem includes one 3340 A2 unit and three 3344 Model B2 or B2F units for a total of 1.8 billion bytes per string. A 3340/3344 Direct-Access Storage subsystem can be attached to a System/370 Model 135 through the Integrated File Adapter, to a System/370 Model 145, 158, or 168 system through the Integrated Storage Control, or to a Model 145, 155-II, 158, 165-II or 168 system through the 3830 Model 2 Controller.

Each of the two drives in a 3344 Model B2 or B2F unit is equivalent in format and capacity to four logical 3348 Model 70 Data Modules. In addition, the 3344 Model B2F provides 1,004,160 bytes of fixed-head storage per spindle, or 2,008,320 bytes per dual-drive unit. The average seek time for moving-head storage is 25 milliseconds. Average rotational delay is 10.1 milliseconds, and the data transfer rate is 885K bytes per second. Standard features include Read-Only Switch, Rotational Position Sensing, and Full-Track Read Command. Programming support will be provided under DOS/VS, OS/VS1, OS/VS2, and VM/370. Initial shipments of the 3344 are scheduled for the second quarter of 1976. \Box

IBM System/370 New Product Announcement

| Model | Description | Purchase Price | Monthly Maint. | Monthly Rental* | Rental (24-Month Lease)* |
|-----------|--|-------------------|-------------------|--------------------|--------------------------------|
| 3350 A2 | Direct-Access Storage | \$62,500 | \$200 | \$1,704 | \$1,450 |
| 3350 A2F | Direct-Access Storage with 2MB fixed-head storage | 78,000 | 260 | 2,127 | 1,810 |
| 3350 B2 | Add-on Direct-Access Storage Unit | 49,500 | 150 | 1.351 | 1,150 |
| 3350 B2F | Add-on Direct-Access Storage Unit with 2MB fixed-head storage | 65,000 | 210 | 1,774 | 1,510 |
| 3334 B2 🝃 | Add-on Direct-Access Storage for 3340 Direct-Access Storage Facility | 49,500 | 150 | 1,350 | 1,150 |
| 3334 B2F | Add-on Direct-Access Storage for 3340 Direct-Access Storage Facility with 2MB fixed-head storage | 65, 000 | 210 | 1,774 | 1,510 |

*Includes equipment maintenance.