

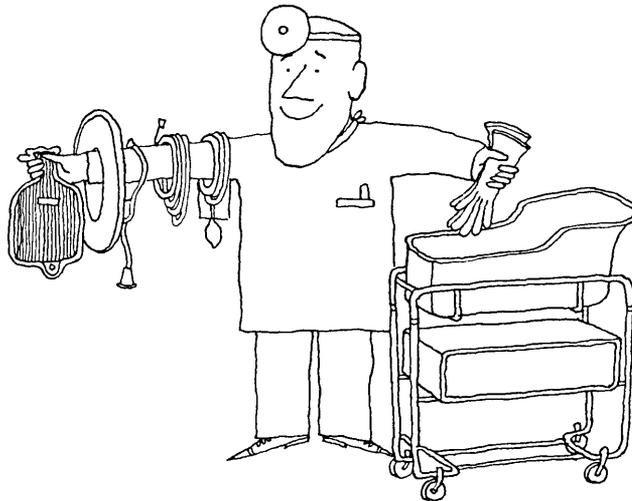
June, 1967

computers and automation

THE COMPUTER DIRECTORY AND BUYERS' GUIDE, 1967

13th Annual Edition

the June, 1967 issue of Computers and Automation



Just what the doctor ordered

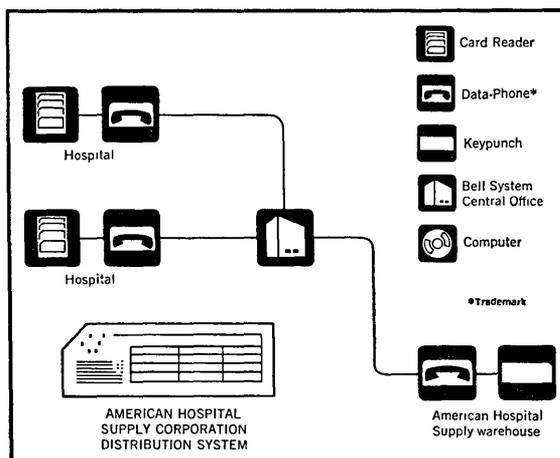
—and he ordered it yesterday, from an American Hospital Supply Corporation warehouse 300 miles away. He gets same-day service on 25,000 different supply items, because Bell System Data-Phone* service links his hospital to the warehouse over regular telephone lines. Prepunched cards containing order information are fed into card readers connected to Data-Phone sets which transmit the information from the hospital.

*Service mark

At the American Hospital Supply warehouse the information is automatically reproduced on an order form. The order is packed and shipped the same day. Because of the fast, accurate data communications, one warehouse in Atlanta serves a wide area in the South. Throughout the nation, American's automated ordering system helps hospitals reduce inventory and paper work and keeps the doctor happy.

For more information, call your Bell Telephone Business Office and ask for a talk with one of our Communications Consultants. And don't hesitate to call us early—because that way we can serve you best.

When you work with data communications, work with the Bell System.



The new, small DECdisk provides 32K words extra memory for the PDP-8 for \$6,000. Additional 32K DECdisk units cost \$3,000 each. Since a basic \$18,000 PDP-8 computer has 4096 words in core, with four DECdisk units, that could give you a high speed computer with 135,168 12 bit words for \$33,000!

DECdisk is compatible with the \$10,000 PDP-8/S, too. Adding four DECdisk units gives you a slightly slower computer with 135,168 12 bit words.

More memory for less cost than any other computer.

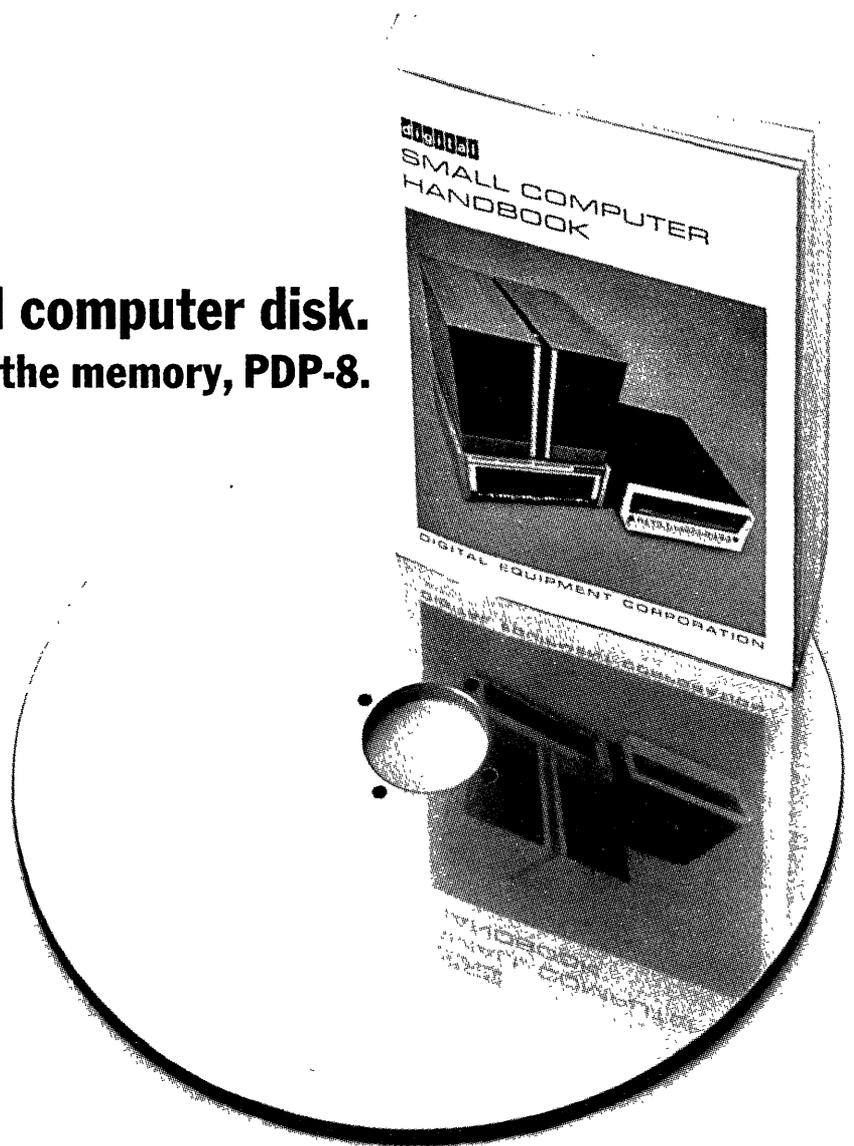
At last count, more than 700 PDP-8 computers have been sold to scientists and equipment manufacturers. The PDP-8 is, by far, the most successful and proven on-line, real time,

small computer in the world. And that was before DECdisk.

DECdisk was developed, like all DIGITAL peripherals, to customize a basically inexpensive computer to special applications. Yours. DECTape was developed the same way. The unique 3½" reels of magnetic tape not only provide low cost storage, but permit you to carry your program library in your pocket. And displays — did you know that DIGITAL was the first computer manufacturer to put a CRT on a computer?

Computer manufacturers who worry about what the customer needs, worry a great deal about peripherals. DIGITAL has one of the largest lines of peripherals in the industry. Write, and we'll send you a free "Small Computer Handbook" and tell you all about our peripherals.

New, low cost, small computer disk. Thanks for the memory, PDP-8.





Neither can our programmers and analysts who have them. Because their idea of a good time means an inside discussion of compilers, of multi-programming, of real time and the world, of time-sharing and such. A way out discussion of third generation conversion, maybe.

They'd talk shop, work out ideas, 24 hours a day, if they could. And they sometimes do. That's why they're the best in the business. That's why they run the company, with and for other programmers and analysts. And run it with ability, not authoritarian decree. It's this kind of environment that turns our people on, and clock-watching off all over the world. In all of our offices anyway, from Honolulu clear through Europe. How about you? Are you interested in hearing more about breaking out

of the time clock rut? Just contact us... anytime.

656 North Sepulveda Boulevard,
El Segundo, California 90245. (213)
678-0592 — Attention Harry Laur

Computer Sciences Corporation

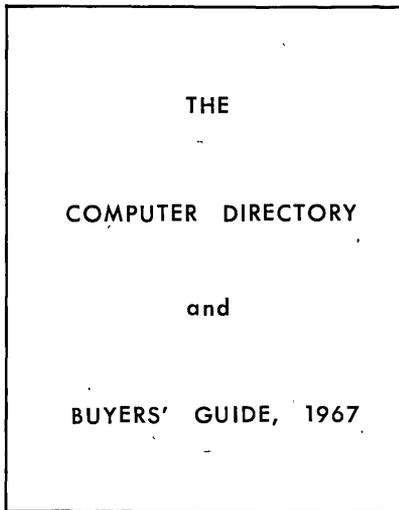
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EXCITING IDEAS CAN'T TELL TIME

computers and automation

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editor and publisher
Edmund C. Berkeley

assistant editors
Moses M. Berlin, Charlene J. Hofer, Linda Ladd Lovett, Neil D. MacDonald

contributing editors
John Bennett, Andrew D. Booth, Dick H. Brandon, John W. Carr, III, Ned Chapin, Alston S. Householder, Peter Kugel, Rod E. Packer

advisory committee
T. E. Cheatham, Jr., James J. Cryan, Richard W. Hamming, Alston S. Householder, Victor Paschkis

art director
Ray W. Hass

fulplment manager
William J. McMillan, 815 Washington St., Newtonville, Mass. 02160, 617 DE 2-5453

advertising representatives
NEW YORK 10018, Bernard Lane, 37 West 39 St., 212-BRYant 9-7281
CHICAGO 60611, Cole, Mason and Deming, 737 N. Michigan Ave., 312-SU 7-6558
LOS ANGELES 90005, Wentworth F. Green, 300 S. Kenmore Ave., 213-DUnkirk 7-8135
NOVATO, CALIF. 94947, Richard C. Alcorn P.O. Box 734, 415-897-1620
ELSEWHERE, The Publisher, 815 Washington St., 617-DEcatur 2-5453 Newtonville, Mass. 02160

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The Computer Directory and Buyers Guide,

1951 to 1967

Although we call this June's issue of the Annual Computer Directory and Buyers' Guide printed by "Computers and Automation" the 13th edition, in one sense it is the 17th edition. For, in September 1951, we issued the first roster of "Organizations in the Field of Automatic Computing Machinery". This roster was in the form of seven pages of memorandum reproduced by spirit duplicator with purple letters.

This first roster of computer organizations published in September 1951 listed about 75 organizations in the field. Among the entries were the following:

Burroughs Adding Machine Co., 6072 2nd Ave., Detroit, Mich., and 511 North Broad St., Philadelphia, Pa.

Adding machines, bookkeeping machines, etc. Research division in Philadelphia has made "Testrac", electronic digital test computer.

Eckert-Mauchly Computer Corp., 3747 Ridge Ave., Philadelphia, Pa.

All-purpose electronic digital computers. Binac, sold to Northrop Aircraft. Univac, first one sold to Bureau of Census. Now a subsidiary of Remington Rand.

Engineering Research Associates, Arlington, Va., and Minneapolis, Minn.

Communication equipment for U. S. Government. Magnetic drum memories. ERA 1101 electronic digital computer, now operating.

Harvard Computation Laboratory, Cambridge 39, Mass.

Harvard Mark I, II, III, IV calculators for Navy, Air Force, and own use.

International Business Machines Corp., 590 Madison Ave., New York, N.Y.

IBM Selective Sequence Electronic Calculator. Punch card machines. Card programmed calculators, electronic calculating punch, "defense" calculator.

Massachusetts Institute of Technology, Servomechanisms Laboratory, Cambridge 39, Mass.

"Whirlwind" electronic digital computer.

Potter Instrument Co., Great Neck, N.Y. Electronic counters. Electronic tag reader.

Nearly all the makers of today's prominent digital computers are missing: Control Data Corp., Digital Equipment Corp., General Electric, Honeywell, National Cash Register Co., Radio Corp. of America,

The Association for Computing Machinery had only come into existence four years earlier, in 1947. Its 20th anniversary is to be celebrated this August in Washington at the national annual meeting. I was its secretary 1947-1953.

Yet we have seen only very little of the computer revolution, about 23 years of it. The great tide of mastering the automatic handling of information is rolling on its way; the waves are destined to transform the world as we know it.

Some of the biggest progress in the future will come from a thorough understanding of software, the methods of programming computers. Nowadays, millions of Americans know what a clutch or a carburetor is, and the function of an ignition coil or of spark plugs; so in the future millions of Americans will understand a conditional jump instruction, indirect addressing, and an automatic subroutine handler. In this issue of the Directory we publish for the first time a roster of general purpose programming languages, with warm thanks to Jean Sammet.

As I think of the future, my chief regret is that I will not be able to see nearly as much of it as I would like to — 50 years from now as well as 10 years from now. At the age of 58, this editor knows full well that the time is coming fairly soon when his own software will no longer be maintainable in the normal way, and will have to be discarded (along with the hardware), and replaced by a computer from another maker with a superior software system.

Edmund C. Berkeley

Editor

ROSTER OF ORGANIZATIONS IN THE COMPUTING AND DATA PROCESSING FIELD

(Cumulative information as of May 15, 1967)

The purpose of this Roster is to provide information about organizations in the computer field that:

- (1) make or develop computing or data processing machinery;
- (2) supply significant components used in the computer field; and/or
- (3) provide specialized services in the computer field.

Each entry, if complete, contains:

Name and address of organization / Telephone number / Year information was obtained / Description of the organization's main activities, main products, and any comments / Special services provided / Size (in number of employees) / Year established

Information in this Roster, as in this entire issue, is based on returns from a current mailing and information previously published in Computers and Automation. In cases where we did not have complete information, partial entries were made.

For geographical listings of organizations supplying special services in the computer field, see the following:

- (1) Roster of Computing, Data Processing, and Consulting Services, page 58;
- (2) Roster of Organizations Supplying Entire Equipments for Computing and Data Processing Systems, page 62;
- (3) Roster of Organizations offering Leasing or Financial Services in the Computer Field, page 64;

(4) Roster of Commercial Time-Shared Computing Services, page 66;

(5) Roster of Commercial Organizations Supplying Courses, Training, or Instruction in Computing, Programming or Systems, page 68.

Key to Abbreviations

- S - Size (number of employees)
- E - Established (year of establishment)
- Eq - Organization offers entire equipments for computing and data processing
- Sv - Organization offers computing, data processing, and/or consulting services
- Ti - Organization offers commercial time-shared computing services
- Co - Organization offers courses, training, or instruction in computing, programming, or systems
- Le - Organization offers leasing or financial services in the computer field

We have tried to make each entry accurate to the extent of information in our possession. All additions, corrections, or comments will be welcome.

Roster of Organizations

A

- AAA Data Processing Center, Inc., 15 East 41 St., New York, N.Y. 10017 / 212-687-8005 / *C 67
All services: systems, programming, installation, operations, complete marketing, media research, commercial applications; Univac 1050 card and tape system 16 / Eq Sv T1 / S 15 / E 64
- AAI Corp., York Rd., Cockeysville, Md. 21030 / 301-666-1400 / *C 67
Special purpose computers, simulators, training systems, test equipment, instrumentation, special purpose devices for missiles, space vehicles, other military weapons systems, air traffic control, anti-submarine warfare, etc., based on custom specifications / Eq / S 1279 / E 50
- Abacus Associates Inc., 443 Park Ave. So., New York, N.Y. 10016 / 212-679-3813 / *C 67
Computing services using an IBM 360/30 and auxiliary equipment / Sv / S 65 / E 62
- Abbott & Lind Inc., 1909 N.E. Union Ave., Portland, Ore. 97212 / 503-282-3245 / *C 67
Buy and sell used and rebuilt equipment / Eq / S 22 / E 52
- Acoustics Inc., 3324 Pelton St., P.O. Box 3204, Charlotte, N.C. 28203 / 704-523-4316 / *C 67
Elevated flooring systems, air handling equipment for computer rooms, acoustical ceilings, movable partitions, contract installations / S 60 / E 47
- The Acrotod Co., P.O. Box 66847, Houston, Tex. 77006, P.O. Box 13057, San Antonio, Tex. 78213 / Houston, 713-524-3111; San Antonio, 512-224-5022 / *C 67
All types of accessories, such as tape and disk storage, card files, etc. Also supplies, such as tape, control panels, wires, labels and binders / S 11 / E 51
- AC Spark Plug Div. General Motors Corp., 7929 S. Howell Ave., Milwaukee, Wis. 53201 / 414-762-7000 / *C 67
Design, development and production of general purpose and special purpose digital computers for space and airborne systems and other applications / S 7600 / E 48
- Adage, Inc., 1079 Commonwealth Ave., Boston, Mass. 02215 / 617-783-1100 / *C 67
General purpose hybrid computer, analog-to-digital converters, digital-to-analog converters, data acquisition and reduction systems / Eq Sv / S 300 / E 57
- Adams Associates (Div. of Charles W. Adams Associates, Inc.), 128 The Great Rd., Bedford, Mass. 01730 / 617-275-0700 / *C 67
A computer programming and consulting firm specializing in systems design, on-line control, computer graphics, data communication, and management information systems / Sv Co / S 100 ? / E 59
- Adcom Corp., 20945 Plummer St., Chatsworth, Cal. 91311 / 213-341-4635 / *C 65
Design and manufacture of computer data acquisition systems employing high-speed analog-to-digital converters, digital-to-analog, digital multiplexers, analog memories, and hybrid interfaces / S 58 / E 64
- ADDO-X, Inc., 845 Third Ave., New York, N.Y. 10022 / 212-PL3-6680 / *C 67
Data capture and control equipment, tape reader, optical font adding machine, 990 key data collection system, check digit verifier mod. 7-11 / Eq Sv / S ? / E 47
- ADDO-X Sales Corp., (Div. of ADDO Machine Co.), 6549 West North Ave., Oak Park, Ill. 60302 / 312-848-9431 / *C 67
ADDO-X 10-key keyboard unit with 2 or 3-position automatic tabulating carriage, cable connected to ADDO-X tape punch, unique plastic program card blocking mistakes preventing errors to be punched on the tape, giving clean computer input / Eq Le / S 15 / E 56
- Addressograph-Multigraph Corp. (main office), 1200 Babbitt Rd., Cleveland, O. 44117 / 216-731-8000 / *C 67
Manufactures full line of data collection equipment including bar code scanning devices, data collection terminals are designed to capture bar code, OCR, MICR, and other fonts. distribute full line of offset units that create copies from computer-prepared master material, also, heat transfer machines preparing labels, etc. / Eq / S 24,000 / E 1893
- Addressograph-Multigraph Corp. (branch office), 346 So. Fifth East., Salt Lake City, Utah 84110 / 803-359-2031 / *C 67
Data collection systems, optical scanners, transfer printers and labeling machines, posting and report reproduction systems, related plastic cards, master material, computer ribbons / Sv / S 85 / E 1893
- Ad Valorem Records Inc., 3766 Richmond Ave., Houston, Tex. 77027 / 713-621-0232 / *C 67
Service: compile tax records for schools, counties, cities on IBM System 360/20 / Sv / S 7 / E ?
- Advance Data Systems, 9261 W. Third St., Beverly Hills, Cal. 90213 / 213-273-7650 / *C 66
Special purpose computers, computer operated revenue control devices, i.e., money machines, gates, etc. Magnetic cards and tickets / Sv / S 150 / E 61
- Advanced Circuitry Div., Litton Industries, 4811 W. Kearney, Springfield, Mo. 65803 / 417-862-0751 / *C 67
Printed circuits: multi-layer, single-sided, double-sided, weldable, terminal boards / S ? / E 59
- Advanced Components Co., 119 Luther Ave., Liverpool, N.Y. 13088 / 315-472-7886 / *C 67
Ampex magnetic tape; A.C. computer and tab ribbons; Mosler and Victor tape vaults; rent tape cleaners / S 15 / E 62
- Aerometrics (Div. of Aerojet-General Corp), Industrial Systems Div., Frederick Municipal Airport, P.O. Box 460, Frederick, Md. 21701 / 301-662-4181 / *C 67
Mechanized sorting and material handling systems and components / S 170 / E 60
- Aerometrics (Div. of Aerojet-General Corp), Sacramento Plant, Hwy. 50 & Nimbus Rd., P.O. Box 15847, Sacramento, Cal. 95813 / 916-355-1000 / *C 67
Computing, consulting, data management, and programming services; computer based technology; information engineering / Sv / S ? / E ?
- Aerometrics (Div. of Aerojet-General Corp), Von Karman Center, 1100 W. Hollyvale St., Azusa, Cal. 91702 / 213-334-6211 / *C 67
Thin-film microelectronic components, computer services, computer based simulators / Sv Ti / S 5000 / E 42
- Aerometrics (Div. of Aerojet-General Corp) Crow Canyon Rd., P.O. Box 216, San Ramon, Cal. 94583 / 415-837-5343 / *C 67
Offers digital, solid state electronic counters, binary line decoders, portable phasemeters, phase resolvers, thermal differential analyzers / S 50 / E 65
- Aero Performance, Inc., 57 Hillside Ave., Manhasset, N.Y. 11030 / 516-627-7463 / *C 67
Computing services for planning and operation of international and regional airlines: meteorological, traffic control, technical pre-flight planning / Sv Ti / S 12 / E 62
- Aetna Products Co., Inc., 11 Commercial St., P.O. Box 438, Hicksville, N.Y. / 516-WE1-3120 / *C 65
Inked ribbons for computers, data processing, etc. / S ? / E 41
- Agency Service Bureau, Inc., 10103 Bristol Ave., S.W., Tacoma, Wash. 98499 / 206-584-7211 / *C 67
Insurance agency accounting and management system financial statements / Sv / S 6 / E 62
- AGS Computers, Inc., 485 Fifth Ave., New York, N.Y. 10017 / - / *C 67
Programming services including system, commercial, and scientific systems design / Sv Co / S ? / E ?
- J. R. Ahart, Inc., 627 Salem Ave., Dayton, O. 45406 / 513-278-4754 / *C 67
Computer and data processing services using an IBM 360/30, 32K, 2 disk drives / Sv / S 10 / E 62
- Aircraft Armaments, Inc. - name changed to AAI Corp., which see
- Airline Data Service Inc., 55 W. 42nd St., New York, N.Y. 10036 / 212-594-1921 / *C 67
Computing, consulting and programming services: punch card, key punch, sorters, verifiers, etc. / Sv / S 6 / E 65
- Airpax Electronics, Inc., P.O. Box 8488, Fort Lauderdale, Fla. 33310 / 305-587-1100 / *C 66
Telemetry, electronic tachometry / S 400 / E 47
- Aladdin Electronics, (Div. of Aladdin Industries, Inc.), 701 Murfreesboro Rd., Nashville, Tenn. 37210 / 615-242-3411 / *C 67
Pulse and wideband transformers; fixed and variable inductors; filters; molded chokes; delay lines / S ? / E 34
- Albert-Cort Inc., 15 Laight St., New York, N.Y. 10013 / 212-964-1745 / *C 67
List maintenance, addressing (Cheshire), inserting, mailing; equipment — IBM 1401, 8K, 729 II drives / Sv / S 30 / E ?
- All Data Processing Machines, Inc., 105 Hinricher St., Willow Springs, Ill. 60480 / 312-839-5164 / *C 67
Offers all makes and models of computers, unit record equipment; supplies, such as metal files, panels, etc. / Eq Le / S 4 / E 63
- Allen Hollander Co., Inc., 385 Gerard Ave., Bronx, N.Y. 10451 / 212-665-1818 / *C 67
Manufacturers of continuous pressure-sensitive pinfeed labels, tags and specialties for data-processing / S 250 / E 49
- Allied Data Processing, Inc., 41 East 42nd St., New York, N.Y. 10017 / 212-661-6200 / *C 67
Programming, systems, contract computer and keypunch services; application development and implementation; computer time sales / Sv Ti / S 35 / E 65

Roster of Organizations

- Allied/Egry Business systems, Inc., 429 East Monument Ave., Dayton, O. 45402 / 513-223-3133 / *C 66
Continuous forms / S 1000 / E 1893
- The Alling & Cory Co., River & Alcor St., Pittsburgh, Pa. 15212 / 412-321-2690 / *C 67
Perforated paper tape / S ? / E ?
- Alpha Omega Computer Systems, 6505 Wilshire Blvd., Los Angeles, Cal. 90048 / 213-653-6230 / *C 67
Service Bureau (IBM 1401 equipment): financial and accounting packages; systems design and development; business services such as general ledger, financial statements, accounts receivable, etc. / Sv Co Le / S 12 / E 59
- Altro Work Shop, (Div. of Altro Health & Rehabilitation Services), 1021 Jennings St., Bronx, N.Y. 10460 / 212-542-1550 / *C 67
Data processing service bureau / Sv Co / S 6 / E ?
- Alverson-Draughon College, 122 E. Stonewall St., Charlotte, N.C. 28201 / 704-333-5174 / *C 67
Programming and consulting services; train students on IBM 1401, 360, 407, 403, 402, 085, 086, 024, 026, 029, 076, 514, 552 / Sv Co / S 140 / E 46
- American Bosch Arma Corp., ARMA Div., Roosevelt Field, Garden City, N.Y. 11532 / 516-742-2000 / *C 66
Data management systems, digital computers, gyro compasses, gyros, accelerometers, ASW systems, sonics equipment, ground support equipment, displays, heading references / S 845 / E 18
- American Data Processing Corp., 320 W. Jones St., Raleigh, N.C. 27603 / 919-833-4621 / *C 67
Data processing service bureau / Sv / S 25 / E 64
- American Data Services, Inc., 0110 Southwest Bancroft St., Portland, Ore. 97201 / 503-226-6851 / *C 67
Data processing services to accountants, payroll, inventory and production control; general business applied services / Sv / S 12 / E 57
- American Hydromath Co., 24-20 Jackson Ave., Long Island City, N.Y. 11101 / 212-Ex2-4242 / *C 65
Mechanical and electro-mechanical analog computer: special purpose slide rules, quality control computer, mechanical monographs / S 10 / E 40
- American Institute of Technology, 3620 North Central Ave., Phoenix, Ariz. 85012 / 602-266-4483 / *C 67
Training and instruction, courses by mail / Co / S 70 / E 62
- American Office King, Inc., 748 Coleman Ave., San Jose, Cal. 95110 / 408-298-1464 / *C 67
Inked ribbons for all data processing equipment, including new high speed printers / S 8 / E 64
- American Telephone & Telegraph Co. and Associated Bell System Telephone Companies, (Hq) 195 Broadway, New York, N.Y. 10007 / 212-393-9800 / *C 65
Complete communications services for data processing systems / S 735,000 / E ?
- Ampex Corp., Computer Products Div., P.O. Box 329, Culver City, Cal. 90231 / 213-836-5000 / *C 67
Ferromagnetic cores; core memories and memory stacks; digital tape transports and memory systems, ground and airborne; paper tape-to-magnetic tape conversion systems; and special-format tape transports and memories /
- Eq / S 1100 / E 61
- Amphenol-Borg Electronics Corp., 2801 S. 25th Ave., Broadview, Ill. 60155 / 312-261-2000 / *C 65
Connectors of all types, coax cable, multi-conductor cable, RF connectors, coax switches, precision potentiometers, integrated circuits, harness assemblies / S over 500 / E 58
- AMP Inc., Eisenhower Blvd., Harrisburg, Pa. 17105 / 717-564-0101 / *C 66
Solderless terminals, wiring devices, capacitors, power supplies, converters, pulse forming networks / S 7000 / E 41
- Amplifier Corp. of America, 75 Frost St., Westbury, N.Y. 11590 / 516-333-9100 / *C 66
Tape recorders, tape decks, tape cartridges, transistorized electronic modules and plug-in boards, transistorized power supplies, transistorized amplifiers; flutter meters, demagnetizers; instruments to order / S 25 (affiliate of Keystone Camera Co., Inc.; additional personnel and facilities readily available) / E 36
- AmTron Inc., 14631 S. Waverly Ave., Midlothian, Ill. 60445 / 312-264-5835 / *C 65
Analog and digital electronic controls for process application in industrial plants / S 50 / E 59
- Anagram Corp., 6560 Backlick Rd., Springfield, Va. 22150 / 703-451-8271 / *C 67
Contract programming for such applications as simulations, large-scale war gaming, large-scale file handling, etc.; developers of proprietary software systems, such as the ACCUFILF information storage and retrieval system available by leasing / Sv Le / S 8 / E 64
- Analytic Computing Services, Inc., 1140 Broadway, New York, N.Y. 10001 / 212-679-4087 / *C 67
Data processing services; IBM 360 and peripheral equipment / Eq Sv / S 15 / E 63
- Anderson, Kasdan, O'Brien & Walter, Inc., 7415 Wayzata Blvd., Minneapolis, Minn. 55426 / 612-544-1581 / *C 67
Provides data processing counsel and assistance to management in systems analysis, design, selection, evaluation; monitoring and implementation of data processing changes / Sv / S 10 / E 66
- Andromeda, Inc., 10501 Wheatley St., Kensington, Md. 20795 / 301-933-1177 / *C 67
Signal classifying adaptive computers for use in recognition of complex statistical signals, such as speech, sonar, seismic, handwriting, and other signals as derived from manufacturing quality control and production control sensors / Eq Sv / S 8 / E 57
- Anelex Corp., 150 Causeway St., Boston, Mass. 02114 / 617-742-4585 / *C 67
High speed printer systems / Eq / S 700 / E 52
- API Instruments Co., 7100 Wilson Mills Rd., Chesterland, O. 44026 / 216-423-3131 / *C 66
Indicating and controlling instruments used as safety devices and "balance wheels" to prevent drift of electronic circuits in computers and to warn of malfunctioning / S 600 / E 45
- Applied Control Corp., 293 Fairview Ave., Cedar Grove, N.J. 07009 / 201-239-3851 / *C 65
Test equipment, digital, in circuit
- non loading, visual indication of computer component contents, bench tester and panel mounting versions S 10 / E 58
- Applied Data Research, Inc., Rt. 206 Center, Princeton, N.J. 08540 / 609-921-8550 / *C 67
Consulting and programming services autoflow documentation systems; ESI time sharing systems; basic and advanced programmer training; seminars; basic research in computer technology / Sv Ti Co / S 100 / E 59
- Applied Data Systems, Inc., 203 California, San Francisco, Cal. 94111 / 415-981-2710 / *C 67
Software language development / Sv Co / S ? / E 63
- Applied Dynamics, Inc., 2275 Platt Rd., P.O. Box 1488, Ann Arbor, Mich. 48106 / 313-665-3601 / *C 67
Special and general purpose electronic analog and hybrid computers and simulators; maintenance, test equipment, component parts, modules; gas analyzers / Eq / S 260 / E 57
- Applied Industrial Dynamics, Inc., 100 N. University Drive, Ft. Worth, Tex. 76107 / 817-332-3863 / *C 67
Data processing services: consulting, programming, processing, keypunching, computer time rental. Data processing products: accessory equipment, magnetic tape, furniture / Sv / S 15 / E 65
- Applied Magnetics Corp., 749 Ward Drive, Santa Barbara, Cal. 93105 / 805-967-0123 / *C 66
Custom designed precision magnetic recording heads for computer and instrumentation applications / S 325 / E 57
- The Arce Corp., N. 4407 Division, Spokane, Wash. 99207 / 509-487-9929 / *C 67
Consulting services, programming services, systems engineering, courses; equipment includes IBM 1130, Univac 1004 connected to IBM 7094 and Univac 1108 / Sv Ti Co / S 10 / E 63
- Argonaut Associates, Inc., Box K, Beaverton, Ore. 97005 / 503-292-3149 / *C 67
Specialized graphic recorders, analog computers, multichannel on-line analog computation / Eq / S 17 / E 59
- Aries Corp., Westgate Research Park, McLean, Va. 22101 / 703-893-4400 / *C 67
Systems consultants, analysts, and programmers providing professional support to computer users for management information systems, software development and modification, scientific problems, statistical analysis, information retrieval, real-time applications and data conversion / Sv Co / S 300 / E 62
- Aries Corp. (branch office), 1144 Clifton Ave., Clifton, N.J. 07013 / 201-779-3200 / *C 67
Computing and programming services / Sv Ti / S 45 / E 66
- Arista Data Processing Center, (Div. of Arista Mills Co.), 438 Goldfloss St., Winston-Salem, N.C. 27107 / 919-723-0707 / *C 67
Specialists in design, implementation, operation of manufacturing and inventory control systems / Sv Ti / S 40 / E ?
- Arkay Engineering, Inc., 11800 W. Olympic Blvd., Los Angeles, Cal. 90064 / 213-272-2852 / *C 65
Engineering and consulting services. Experienced in designing and shipping hardware. Semiconductor circuits, data systems, automatic checkout and control, complete computers,

Roster of Organizations

- telemetry, instruments, value analysis, proposals / S 12 / E 58
- ARMA Div., American Bosch Arma Corp. — name changed to American Bosch Arma Corp., ARMA Div., which see
- The Arnold Engineering Co., P.O. Box G, Marengo, Ill. 60152 / 312-568-7251 / *C 65
- Magnetic materials / S 750 / E 36
- The Artronic Instrument Co., 11232 Triangle Lane, Silver Spring, Md. 20902 / 301-949-1131 / *C 67
- Molded computer circuits, networks, delay lines, pulse transformers / S ? / E 59
- Arvey Corp., Lamcote Div., 3500 N. Kimball Ave., Chicago, Ill. 60618 / 312-463-1400 / *C 66
- Perforator tape; Mylar reinforced paper, foil, and metallized foil combinations / S 300 / E 05
- Astrodata, Inc., 240 E. Palais Rd., Anaheim, Cal. 92803 / 714-772-1000 / *C 66
- Analog computers, digital computers, data processors, data acquisition systems, telemetry systems, timing systems, amplifiers, A/D and D/A converters, multiplexers, signal conditioning equipment, discriminators, oscillators, simulators, decommutators, time code generators, translators, displays, tape search systems, power supplies, computer interface systems / S 1100 / E 61
- Audio Devices, Inc., 235 East 42nd St., New York, N.Y. 10017 / 212-687-0800 / *C 67
- Complete line of high performance magnetic tapes / Eq / S 500 / E 37
- Audio Instrument Co., Inc., 220 E. 23rd St., New York, N.Y. 10010 / 212-MU9-5518 / *C 65
- Analog time delay devices; logarithmic converters; autocorrelation recorder / S 9 / E 49
- Auditex, Inc., 1239 Broadway, New York, N.Y. 10001 / 212-689-8999 / *C 67
- Data processing services: processing, programming, key punching, consulting / Sv / S 5 / E 65
- Auerbach Corp., 121 North Broad St., Philadelphia, Pa. 19107 / 215-491-8200 / *C 67
- A full range of computer consulting services: management information systems, software system design, programming, data communications systems design, project management and monitoring, product planning and market research, systems effectiveness evaluation, information storage and retrieval, mathematical modeling and simulation / Sv Co / S 230 / E 57
- Austin Data Processing Service Inc., 306 West 16th St., Austin, Tex. 78701 / 512-477-9707 / *C 67
- Services: accounting, market research, programming and systems. Classes on IBM 360/20, 4 tape 2 disk systems. Contract programming; complete service bureau / Sv Co / S 14 / E 64
- Auto Data Corp., 300 East Hampden, Suite 220, Englewood, Colo. 80110 / 303-761-0684 / *C 67
- Provides complete daily accounting and inventory exclusively for automobile dealers / Sv / S 4 / E 66
- Autographic Business Forms, Inc., 45 E. Wesley St., S. Hackensack, N.J. 07606 / 201-489-6500 / *C 67
- Business forms / S ? / E 1883
- Automated Business Records, Inc., 1601 Wyoming, El Paso, Tex. 79902 / - / *C 67
- Service bureau using IBM 1440 with 2 disk drives for business-engineering-scientific applications / Sv / S 9 / E 61
- Automated Concepts Inc., 60 East 42nd St., New York, N.Y. 10017 / 212-986-8955 / *C 67
- Supplies computer systems, programming and consulting services to the commercial and scientific user including personnel to solve peak over-loading programming conditions / Sv Ti Co / S 35 / E 66
- Automated Data Associates, 1320 Lawrence St., Rahway, N.J. 07065 / 201-382-3900 / *C 67
- Commercial, scientific programming; complete data processing service; real-time systems planning; computer time rental / Sv / S 10 / E 65
- Automated Data Processing Services, Inc., 1104 Spring St., Silver Spring, Md. 20910 / 301-779-5500 / *C 66
- Service Bureau operations; all type of data processing and conversion services; IBM 1440, 16K, 2-tape, 2 disk, 1403 printer, 2 card read/punches, NCR 420-1 optical scanner / S 35 / E ?
- Automated Information, Inc., 309 S.W. Fourth Ave., Portland, Ore. 97204 / 503-223-2139 / *C 67
- Operation, programming, and analysis for engineering, scientific, statistical, management science, and management reporting applications on any type of digital computer. Experienced in CPS, linear programming regression analysis, water network, earthwork computations, surveying applications, questionnaire tabulating. FORTRAN, SPS, 360 assembler and other languages written here / Sv / S 6 / E 63
- Automated Instant Data, Inc., 3333 East Central, Wichita, Kan. 67208 / 316-684-0536 / *C 67
- Computing, consulting and programming services; paper tape-to-card conversion; data preparation, keypunch verification. Equipment includes GE 415, 16K words memory, 5 magnetic tapes / Sv / S 12 / E 62
- Automated Management Systems, Inc., 1300 First Nat'l. Bank Bldg., Jackson, Miss. 39201 / 601-948-2081 / *C 67
- Service bureau operation / Sv / S 30 / E 61
- Automated Services, Inc., (Div. of Utility Development Corp.), 7009 N. River Rd., Ft. Wayne, Ind. 46805 / 219-749-9681 / *C 67
- General computer services offered ranging from payroll to complete general ledger applications; accounts receivable (general and utilities). Also custom systems designing, programming / Sv Ti / S 6 / E 66
- Automated Statements, Inc., 319 Alden Place, Orange, N.J. 07050 / 201-672-6367 / *C 67
- Accounts receivable services including monthly statement preparation / Sv / S 5 / E 66
- Automated Systems International Ltd., P. O. Box 5201, Seven Oaks Station, Detroit, Mich. 48235 / 313-933-9701 / *C 66
- Parts inventory control and replenishment systems service and operation for automotive parts; accounting and management reporting systems for automotive dealers / S 20 / E 60
- Automatic Accounting Systems, Inc., 15 West 26 St., New York, N.Y. 10010 / 212-689-6121, 212-689-6835 / *C 67
- Data processing service: payrolls, sales analysis, inventory, programming, systems / Sv / S 14 / E 63
- The Automation Co., 342 Madison Ave., New York, N.Y. 10017 / 212-867-0188 / *C 67
- Used punch card and punch tape equipment / Eq / S 3 / E 65
- Automation Dynamics Corp., 35 Industrial Pky., Northvale, N.J. 07647 / 201-768-9200 / *C 65
- Support test equipment / S 25 / E 57
- Automation Engineers, 344 W. State St., Trenton, N.J. 08618 / 201-695-2628 / *C 65
- Consultants in automatic control machinery, automatic materials handling equipment, information handling equipment, information handling equipment, and random card file equipment. Designers of specialized data processing equipment, including office machinery coupling mechanisms. Analysis of automation economics; supervision of installations / S 20 / E 42
- Automation Institute of America, (Subsid. of C-E-I-R, Inc.), 760 Market St., San Francisco, Cal. 94102 / 415-421-5793 / *C 67
- Courses in data processing skills offered through network of fifty franchised associates. (For specific locations, please see Roster of Courses, Training, and Instruction.) Instruction in machine operation, programming and systems analysis / Co / S 50 / E 56
- Automation Sciences, Inc., 275 Madison Ave., New York, N.Y. 10016 / 212-686-7122 / *C 65
- Service company: systems analysis, computer programming, engineering and feasibility studies for computer, simulation, data reduction, command control and special data processing systems / S 60 / E 63
- Automation Training Center, (Div. of Honolulu Business College), 1111 Bishop St., Honolulu, Hawaii 96813 / 808-587-274; 808-566-312 / *C 67
- In-school equipment used for training and data processing service: 7 key punches, 3 verifiers, 1-402, 1-514, 1-85, 1-83, 1-82; IBM 360/20 with 2560, 2020, 2203 units / Sv Ti Co / S 12+ / E 60
- Automation Training Schools, Inc., 52 Chauncy St., Boston, Mass. 02111 / 617-542-0518 / *C 67
- Training in all levels of EDP: basic key punch, tab wiring and operations, computer programming on digital systems / Co / S 40 / E 62
- Autonetics, (Div. of North American Aviation, Inc.), 3370 Miraloma Ave., Anaheim, Cal. 92803 / 714-772-8111 / *C 67
- Airborne digital computers including control panels, displays, printers and sensor conversion equipment / Eq Co / S 26,000 / E 48
- Auto-trol Corp., 6621 West 56th Ave., Arvada, Colo. 80002 / 303-421-5670 / *C 67
- Graphic digitizers, X-Y coordinate plotters, photo-optical shaft encoders / Eq / S 75 / E 60
- Auto-Tronix, Universal, 444 Sherman, Denver, Colo. 80203 / 303-744-6395 / *C 67
- Computer programming, systems consulting, service bureau processing; training in keypunching, unit record, computer operator, programming and systems work / Sv Co / S 70 / E 64
- Avtron Manufacturing, Inc., 10409 Meech Ave., Cleveland, O. 44105 / 216-641-8310 / *C 67
- Digital measuring, indicating and control systems, including outputs for trend recording, data logging, direct communication with general purpose computers and information systems S 110 / E 53

Roster of Organizations

B

- Babcock Electronics Corp., 1640 Monrovia Ave., Costa Mesa, Cal. 92627 / 714-LI8-0611 / *C 65
 Command control and guidance systems including receivers, transmitters, encoders, decoders, signal generators and support equipment / S 1000 / E 47
- Bailey Meter Co., (Div. of The Babcock & Wilcox Co.), Wickliffe, O. 44092 / 216-943-5500 / *C 67
 Data processing and computer systems for power plant and industrial process control, including pneumatic and electronic analog computers, digital data information systems, industrial process control computers for on-line, real-time applications and multi-computer control systems incorporating analog, fixed-program digital, and programmable digital computers / Eq / S 2500 / E 16
- Baldwin Kongsberg Co. (Div. of D. H. Baldwin - Kongsber V.), Suite 204, Columbia Wooster Bldg., 5710 Wooster Pike, Cincinnati, O. 45202 / 513-271-3030 / *C 67
 Automatic drafting systems; installation, warranty, programming, spare parts / Eq Co Le / S 25 / E 65
- Baltimore Business Forms, Inc., 3132 Frederick Ave., Baltimore, Md. 21229 / 301-233-8000 / *C 67
 Continuous forms; tabulating cards in form sets / S 700 / E 16
- Barron Data Systems, Inc., 3556 Monroe St., Toledo, O. 43606 / 419-241-3942 / *C 67
 Contract computer programming, systems design & consulting, personnel education, programming & systems packages / Sv Co / S 8 / E 65
- Basic Systems Inc., 880 Third Ave., New York, N.Y. 10022 / 212-752-4600 / *C 65
 Consulting services to design custom training courses to meet client training requirements and the design of self-instructional texts for individual purchasers / S 125 / E 60
- Battelle Memorial Institute, Columbus Laboratories, 505 King Ave., Columbus, O. 43201 / 614-291-3151 / *C 67
 Analysis and programming of scientific and engineering applications, special software development, business systems, and simulation. Design and development of special purpose digital and analog computers / Co / S 2900 / E 29
- Bay State E. D. P. Accessories, (Div. of Systems Mfg. Co.), 536 Granite St., Braintree, Mass. 02184 / 617-848-3490 / *C 67
 Wires, panels, accessory equipment for data processing & computer rooms; continuous forms, cards / S 4 / E 62
- Beckman & Whitley, (Div. of Technical Operations, Inc.), 441 N. Whisman Rd., Mountain View, Cal. 94040 / 415-968-6220 / *C 67
 Ultra high speed laser beam scanning; readers; recorders; character generators; and facsimile systems. Also, computer components — rotating mirror scanners, light beam modulators, and ultra high speed synchronous motors / S 85 (Div.), 722 (Total) / E 47
- Beckman Instruments, Inc., (main office), 2500 Harbor Blvd., Fullerton, Cal. 92634 / 714-871-4848 / *C 67
 Amplifiers; communication systems; computers; computer test equipment and components; controls; information converters; counters; data processing, recording, reduction equipment, displays; facsimile equipment; generators; integrators; multipliers; printers; recording papers; relays; scanners; servomechanisms; systems engineering; timing devices / Eq / S 6700 / E 35
- Beemak Plastics, 7424 Santa Monica Blvd., Los Angeles, Cal. 90046 / 213-876-1770 / *C 67
 Holders for tab cards / S 25 / E 52
- Bell & Howell Micro-Data Div., 6800 McCormick Rd., Chicago, Ill. 60645 / 312-539-7300 / *C 65
 Microfilm recorders and readers designed to complement computer and tab printers / S ? / E 61
- Bell Telephone Mfg. Co., Automation Systems Div., Berkenrodelel 33, Hoboken, Belgium / 03 27 78 35 / *C 67
 Data peripheral equipment (mainly magnetic tape transports; mail handling equipment, postal automation; document handling equipment, banking automation) / Eq / S 150 (ASD); 12,000 (company) / E 50 (ASD); 1882 (company)
- The Bendix Corp., Bendix-Pacific Div., 11600 Sherman Way, N. Hollywood, Cal. 91605 / 213-765-1010 / *C 66
 Telemetry decoding and processing components, systems and services / S 3200 / E 37
- The Bendix Corp., Eclipse-Pioneer Div., Teterboro, N.J. 07608 / 201-288-2000 / *C 65
 Airborne digital computers, analog-to-digital converters, transducers, motor generators, memory storage devices, automatic and manual checkout systems / S 9000 / E 16
- The Bendix Corp., Industrial Controls Div., 8880 Hubbell Ave., Detroit, Mich. 48228 / 313-272-3710 / *C 66
 Numerical control systems / S 300+ / E 57
- Benson-Lehner Corp., (Div. of United Gas Corp.), 14761 Califa St., Van Nuys, Cal. 91401 / 213-781-7100 / *C 67
 CRT printers, CRT printer/plotters, digital drafting systems, digital incremental plotters (card input, magnetic tape input, on-line), film readers/digitizers, strip chart readers / Eq / S 150 / E 51
- Berkeley Enterprises, Inc., 815 Washington St., Newtonville, Mass. 02160 / 617-332-5453 or 617-332-3928 / *C 67
 Publisher of "Computers and Automation" and other publications. Scientific kits for educational purposes: Brainiac (computer construction kit); Probability and Statistics kit; Teaching Machines and Programmed Learning kit / S 16 / E 54
- Frank R. Berman, Sc.D., Pan Am. Bldg., Suite 303E, 200 Park Ave., New York, N.Y. 10017; 2 Eagle Hill Court, Huntington, N.Y. 11745 / 212-YU6-2515; 516-421-3985 / *C 67
 Consulting services: feasibility and systems studies; program development; programming, FORTRAN, ALGOL, COBOL, PL/I and other languages. Computer education for personnel; assistance in conversion to IBM system 360 and other computers; seminars / Sv Co / S 2 / E 64
- Besco Equipment & Systems Co. Inc., 5533 Dyer St., Dallas, Tex. 75205 / 214-363-5533 / *C 67
 Manufacture and sales of elevated access panel type computer flooring systems; sell computer tape, wires, panels, accessory equipment / S 10 / E 60
- Biz-Matic Data Control Center's Inc., 232 Summer St., Boston, Mass. 02110 / 617-426-6863 / *C 67
 Data processing services; 1401 E4 system with tapes, disc, paper tape reader. Consulting on all phases of paperwork simplification; provide turn-key services for computer installations / Sv / S 52 / E 60
- Ernest E. Blanche & Associates, Inc., 10335 Kensington Pkwy., Kensington, Md. 20795 / 301-949-0500 / *C 67
 A service bureau using IBM 360 model 30 (32K, 6 tape drives, 7 & 9 channel); IBM 1401 (8K, 4 tape drives); 80 EAM machines / Sv Ti / S 120 / E 55
- Joseph K. Blum Co., 205 East 42nd St., New York, N.Y. 10017 / 212-686-7373 / *C 67
 Consulting services, site preparation, design work / Sv / S 8 / E 31
- Bolt Beranek and Newman Inc., (main office), 50 Moulton St., Cambridge, Mass. 02138 / 617-491-1850 / *C 67
 TELECOMP services: problem oriented, remote access time-sharing / Ti Co / S 500 / E 48
- Bolt Beranek and Newman Inc., Data Equipment Div., 2126 S. Lyon St., Santa Ana, Cal. 92705 / 714-546-5300 / *C 67
 GRAFACON: graphical computer input device. TELEPUTER: alph-numeric computer terminal device. COMPUTER INTERFACES: software, programming and hardware / Eq Sv Ti / S 350 / E 48
- Bonner & Moore Associates, Inc., 500 Jefferson Bldg., Houston, Tex. 77002 / 713-CA8-0871 / *C 66
 Consulting firm specializing in computer technology and management sciences; services ranging from conceptual system design and development through implementation, installation and project management / S 40 / E 56
- Booz, Allen & Hamilton, Inc., 135 S. La Salle St., Chicago, Ill. 60603 (offices also in New York; Washington, D.C.; Cleveland; Detroit; San Francisco; and Los Angeles) / 312-346-1900 / *C 67
 Management consultants; technical, management services in electronic and automatic data processing for integrated management information and control systems for industry, commerce, government, institutions; feasibility studies, systems design, equipment selection, implementation, systems conversion, EDP audit and review / Sv / S 1200 / E 14
- Bowles & Tillinghast, Inc., 3400 Peachtree, N.E., Atlanta, Ga. 30326 / 404-261-5420 / *C 67
 H-200 machine rental; insurance data processing service; management consultants / Sv Ti / S 35 / E 65
- Bowmar Instrument Corp., 8000 Bluffton Rd., Ft. Wayne, Ind. 46807 (company divisions include Acton Laboratories, Inc., Acton, Mass.; TIC of California, Newbury Park, Cal.) / 219-747-3121 / *C 65
 Precision servo components and assemblies, counters, electronic devices, measurement and test instruments, solid state digital computer readouts / S 1000 (including divisions / E 51
- W. H. Brady Co., 727 W. Glendale Ave., Milwaukee, Wis. 53209 / - / *C 67
 Continuous pre-printed, self-sticking pinfeed forms, tab labels, key punch correction seals / S 500+ / E 14
- Brandon Applied Systems, Inc., 30 East 42nd St., New York, N.Y. 10017 / 212-986-1518 / *C 67
 Information systems consultants offering data processing equipment training, management audit, standards, planned standard programming, EDP

Roster of Organizations

- planning and implementation, writing, market and product planning services to manufacturers and users / Sv Co / S 50 / E 64
- Brandon Systems Institute, (Div. of Brandon Applied Systems, Inc.), 1130 17th St., N.W., Washington, D.C. 20036 / 202-296-0678 / *C 67
- Conducts continuous public series of technical and managerial courses on data processing subjects as well as private training courses for business and government / Co / S 15 / E 66
- B-R Data Systems, Inc., (Div. of The Bunker-Ramo Corp.), 2121 Industrial Pkwy., Silver Spring, Md. 20904 / 301-622-3100 / *C 67
- Computer programming services, management information systems analysis and design, on-line programming techniques and advanced software for light pen guns display and councils, generalized data processing systems design / Sv Co / S 90 / E 61
- Brentwood Personnel Associates, 786 Broad St., Suite 310, Newark, N.J. 07102 / 201-622-0915 / *C 67
- Personnel employment service for EDP field / S 25 / E 49
- The Bristol Co., Waterbury, Conn. 06720 / 203-756-4451 / *C 66
- Special purpose computers; data recording; high speed printers; scanners; servo mechanisms; systems engineering; and telemeters / S 1800 / E 1889
- Brooks Instrument Div., Emerson Electric Co., 407 W. Vine St., Hatfield, Pa. 19440 / 215-855-5174 / *C 65
- Flow meters, variable area, turbine, and positive displacement with associated readout and control equipment / S 250 / E 46
- Charles Bruning Div., Addressograph Multigraph Corp., 1800 W. Central Rd., Mt. Prospect, Ill. 60058 / 312-CL5-1900 / *C 65
- Dry diazo, moist diazo and electrostatic copiers for use in communicating computer printout by reproduction methods / S 3000 / E 1897
- Bryant Computer Products, (Div. of Ex-Cell-O Corp.), 850 Ladd Rd., Walled Lake, Mich. 48088 / 313-624-4571 / *C 67
- Rotating random access, mass data storage drums and disc files complete with electronics controllers for direct plug in to most electronic data processors / Eq / S 580 / E 57
- Bulova Watch Co., Inc., Systems and Instruments Div., 62-10 Woodside Ave., Woodside, N.Y. 11377 / 212-NE9-5700 / *C 65
- Timers and timing devices; development of automatic fabrication and control processes and machinery; research and development of special-purpose electro-optical and electromechanical devices; precision manufacturing and assembly / S 500 / E 50
- The Bunker-Ramo Corp., 277 Park Ave., New York, N.Y. 10017 / 212-826-7171 / *C 66
- Digital computers for military use; input/output devices; on-line EDP services (information utility or data bank); bank automation equipment and systems; integrated circuits; systems study, research and development / S 2500 / E 28
- The Bunker-Ramo Corp., Business & Industry Div., 445 Fairfield Ave., Stamford, Conn. 06904 / 203-348-4291 / *C 67
- On-line electronic data processing services and equipment for financial community, banks, airlines, industry; peripheral equipment such as cathode ray tube input/output terminals / Eq / S 1200 / E 64
- The Bunker-Ramo Corp., (Div. of Martin Marietta Corp.), 8433 Fallbrook Ave., Canoga Park, Cal. 91304 / 213-346-6000 / *C 67
- Militarized digital computers; computer-driven display devices for military applications; stock quotation systems; reservation, banking systems; numerical control systems for machine tools / Eq Sv Ti Le / S 3000 / E 64
- The Bunker-Ramo Corp., Numerical Control Systems Div., 1070 East 152nd St., Cleveland, O. 44110 / 216-383-6380 / *C 67
- Numerical control systems for industry / Eq / S 175 / E 59
- J. H. Bunnell & Co., 920 Essex St., Brooklyn, N.Y. 11208 / 212-NI9-1717 / *C 65
- Tape punch / S 45 / E 1873
- Burlingame Associates, Ltd., 510 S. Fulton Ave., Mt. Vernon, N.Y. 10550 / 914-MO4-7530 / *C 65
- Analog computers, computing amplifiers and power supplies, analog recorders, analog-to-digital converters, digital voltmeters / S 40 / E 28
- Burr-Brown Research Corp., 6730 S. Tucson Blvd., Tucson, Ariz. 85706 / 602-294-1431 / *C 66
- Proprietary and custom analog computers and simulators, all silicon DC operational and instrumentation amplifiers, analog and hybrid function modules, power supplies and accessories / S 185 / E 56
- Burroughs Corp., 6071 Second Ave., Detroit, Mich. 48232 / 313-875-2260 / *C 67
- Electronic data processing and data communications systems and equipment for every general purpose, scientific and military data handling application. Specialized systems and components include input/output systems, magnetic tape storage systems, disk mass storage files, on-line disc file memory systems, high speed printers and multiple tape listers, paper tape readers and punches, punch card readers and punches, automatic record processors, MICR item processing and document sorter systems, hybrid micro-circuit modules, numerical readouts, alpha-numeric displays, visual displays, counting and decoding tubes and devices, memory stacks, and magnetic drums, disks, tapes, cores and thin films / Eq / S 38,000 / E 1886
- Burroughs Corp., Electronic Components Div., P.O. Box 1226, Plainfield, N.J. 07061 / 201-757-5000 / *C 67
- Ferrite memory cores, planes and stacks; visual readout devices and systems; electronic counters -- uni- and bi-directional with visual readout and electronic outputs / S 1200 / E 55
- Business Computer Service, Inc., 124 Court St., Charleston, W. Va. 25301 / 304-343-9471 / *C 67
- Computing service: sales analysis, inventory maintenance, payroll retail daily sales reporting; bookkeeping service through accountants for small businesses / Sv / S 6 / E 63
- Business Data Processing, 3760 State St., Santa Barbara, Cal. 93105 / - / *C 67
- General data processing services, primarily business oriented; applications include accounts receivable, inventory, payroll, financial statements, sales analysis. Custom programming / Sv / S 3 / E 63
- Business Machines Institute, 816 W. Olympic Blvd., Los Angeles, Cal. 90015 / 213-748-0121 / *C 67
- Training, programming, systems analysis, management and information systems courses; keypunch, tab and wiring hybrid computer courses; correspondence courses in digital computer technology; computer newsletter / Sv Co / S 10 / E 58
- Business Publishers Circulation Service, (Div. of Ojibway Press, Inc.), 1 East First St., Duluth, Minn. 55802 / 218-727-8511 / *C 67
- Specialists in computerized ABC and BPA circulation, circulation consultants, circulation acquisitions, fulfillment, direct mail service, audits, data processing, reader inquiry processing, printing / Sv / S 75 / E 66
- Business Supplies Corp. of America, Skytop Rd., Skytop, Pa. 18357 / 717-595-7511 / *C 67
- Standard and special tabulating cards, continuous forms, ribbons, magnetic tape, paper tape, wires, control panels, and/or panel covers / S 650 / E 59
- Butler-Roberts Associates, Inc., (Sub. of Oki Electronics of America, Inc.), 500 S.E. 24 St., Ft. Lauderdale, Fla. 33316 / 305-523-7202 / *C 65
- All computer and EDP peripheral equipment, including high speed line printers, input-output devices both on-line and off-line, etc. / S 12,000 (parent & subs.); 11 (Butler-Roberts Inc.) / E 1881 (parent); 60 (Butler-Roberts Inc.)

C

- Cadre Industries Corp., 20 Valley St., Endwell, N.Y. 13763 / 607-PI8-3373 / *C 65
- Cable harnesses, cable assemblies, wiring harnesses, custom manufacturing; amplifiers, plug-in modules and panels, test equipment, communications equipment and systems / S 814 / E 51
- CAE Industries, Ltd., Box 6166, Montreal 3, Quebec, Canada / 514-875-5522 / *C 66
- Solid state telegraph equipment, translators, selectors, etc. Supervisory control and telemetry systems; flight simulators; computers / S 3000 / E 47
- California Computer Products Inc., (Cal-Comp), 305 North Muller St., Anaheim, Cal. 92803 / 714-774-9141 / *C 67
- Digital plotting systems. Ink-on-paper plotters; electronic plotters; off-line, on-line and remote systems / Eq Ti / S 500 / E 59
- CALMA Co., 346 Mathew St., Santa Clara, Cal. 95050 / 408-244-0960 / *C 67
- Graphic-to-digital converters; data reduction equipment; magnetic tape recorders / Eq / S 35 / E 60
- Caltec, Inc., 3023 Sylvania Ave., Toledo, O. 43613 / 419-475-3501 / *C 67
- Programming, consultation and processing of technical and commercial digital computer applications / Sv Ti / S 6 / E 59
- Cambridge Computer Associates, Inc., 550 Massachusetts Ave., Cambridge, Mass. 02139 / 617-868-1111 / *C 67
- System analysis and design; program design and implementation; statistical design and analysis; system and program documentation / Sv / S 12 / E 65
- Cambridge Thermionic Corp., 445 Concord Ave., Cambridge, Mass. 02138 / 617-876-2800 / *C 66
- Digital system design, digital logic

Roster of Organizations

- modules, printed circuit boards, board racks and digital hardware accessories / S 472 / E 41
- Camwil, Inc., 11821 Pico Blvd., Los Angeles, Cal. 90064 / 213-GR3-9648 / *C 66
Special type heads for IBM selectric mechanisms. Type heads made up in computer and teletype codes; foreign languages; mathematical, chemical and electronic symbols / S 12 / E 62
- Camwil Inc., 835 Keeaumoku, Honolulu, Hawaii 96814 / 808-961-110 / *C 67
Special type heads for IBM selectric mechanisms / S 15 / E 62
- Canadian Aviation Electronics, Ltd., P.O. Box 6166, Montreal 3, Quebec, Canada / 514-631-6781 / *C 65
Code translators, supervisory control and telemetry equipment, printed circuit boards, flight systems simulators, traffic control equipment, analog-to-digital converters / S 1000 / E 47
- Canadian Research Institute, 85 Curlew Dr., Don Mills, Ontario, Canada / 416-445-6363 / *C 67
Interfacings for control of office machines, automotive traffic control; laboratory instruments; special computers for industrial automation / S 28 / E 38
- C & S Services, 20 So. Laura St., Jacksonville, Fla. 32202 / 904-353-0953 / *C 67
Public data processing service organization. IBM 360/30, 65K, tape, disk / Sv / S 50 / E 62
- Carlton Controls Corp., 15 Sagamore Rd., Worcester, Mass. 01605 / 617-791-6544 / *C 66
Photoelectric perforated tape reader for either paper or mylar tape / S 25 / E 58
- Carter & Associates, 2711 Oakgrove, Toledo, O. 43613 / 419-475-6270 / *C 67
Data processing consultants; complete computing services and time sales; contract programming; specialists in manufacturing applications and information retrieval / Sv / S 3 / E 66
- C A S H, Inc., 300 E. Fall Creek Blvd., N. Dr., Suite 401, Indianapolis, Ind. 46205 / 317-926-2341 / *C 67
Computer service center: regular batch processing; real-time "on-line" services / Sv Ti / S 28 / E 61
- C-E-I-R, Inc., 5272 River Rd., Washington, D.C. 20016 / 301-652-2268 / *C 67
Programming, systems analysis, operations, research, econometrics, linear programming, management sciences, institute for advanced technology; equipment includes IBM 360/65, 360/44, 360/30, 7094, 7090, 1401; GE 265 time sharing system / Sv Ti Co Le / S 1000 / E 54
- Celanese Plastics Co., (Div. of Celanese Corp.), 550 Broad St., Newark, N.J. 07102 / 201-642-6800 / *C 67
Celanar polyester film magnetic tape / S 600 / E ?
- Celestron Associates, Inc., 4 Broadway, Valhalla, N.Y. 10595 / 914-R01-3456 / *C 67
Analysis, programming services, software packages, in house and on site programming services, program conversion, automatic program translators, automatic program segmentors / Sv / S 22 / E 59
- Celestronics Inc., 4311 E. Seventh St., Long Beach, Cal. 90804 / 213-434-0018; 775-3817 / *C 67
Inventory control systems including electronic identification card reader, photo electric scan for accessing computer directly, coupled with input keyboard, high speed strip printer / Eq Sv / S 35+ service / E 61
- Centralab, the Electronics Div. of Globe-Union Inc., P.O. Box 591, Milwaukee, Wis. 53201 / 414-W02-9200 / *C 65
PEC[®] integrated circuits - typical functions; flip-flop, NOR gate, pulse shrinker, pulse stretcher, TDL NAND, monostable multi-vibrator. Also produce ceramic capacitors, variable resistors and rotary switches / S 3000 / E 28
- Century Electronics & Instruments, Inc., 6540 E. Apache St., Tulsa, Okla. 71415 / 918-TE5-9951 / *C 65
Multi-channel recording oscillographs of direct writing electrophotographic and conventional photographic types; vibration and stress analysis systems; data recording equipment and cameras; input-output devices; galvanometers; null balance recording potentiometers; UV direct writing oscillograph, hi-speed digital printer, telemetry calibrator, precision oscillator / S 650 / E 45
- Certron Corp., 2233 S. Barry Ave., Los Angeles, Cal. 90064 / 213-478-1001 / *C 67
Recertification of magnetic computer tape, new computer tape / Sv / S 60 / E 65
- CG Electronics Div., Gulton Industries, Inc., 15000 Central Ave., East, Albuquerque, N.M. 87108 / 505-299-7601 / *C 65
Digital data acquisition and reduction systems; missile and satellite-borne low and high-level PCM telemetry systems; low level-solid state multiplexers; high security digital command and monitoring systems; high speed A/D, D/A converters; digital timers; supervisory control systems; physiological data collection systems; automatic checkout and testing systems; computer linkage; data translation and formatting systems, digital serializer and visual readout devices; printed circuits, micro-welded, copper deposition modules / S 180 / E 57
- Chalco Engineering Corp., 15126 S. Broadway, Gardena, Cal. 90247 / 213-FA1-9021 / *C 66
Punched tape reading equipment and regulated solid state power supplies / S 120 / E 51
- Champion Service Corp., 19001 Villaview Rd., Cleveland, O. 44119 / 216-486-9300 / *C 67
Computer programming, sale of computer time, financial data processing work, time shared computing service, educational service / Sv Ti Co / S 47 / E 65
- Charlotte Business College, 404 West Trade St., Charlotte, N.C. 28202 / 704-333-7737 / *C 67
Courses offered in computing, programming and systems using IBM & GE equipment / Co / S 24 / E 62
- Charron-Williams Commercial College, 2 N.W. 2nd St., Miami, Fla. 33128 / 305-373-4693 / *C 67
Computing, programming and systems courses. Equipment includes IBM 1440 computer (disk and tape) and IBM unit record equipment / Co / S 40 / E 40
- Cheshire Inc., a subsidiary of Xerox Corp.), 408 Washington Blvd., Mundelrin, Ill. 60060 / 312-566-7880 / *C 67
Equipment to apply computer-addressed continuous forms to mail pieces, as labels or heat-transferred imprints / S ? / E 28
- Chrono-log Corp., 2583 West Chester Pike, Broomall, Pa. 19008 / 215-356-6771 / *C 67
Programmable clock/calendars for digital computers; digital clocks, calendars, timers, counters; time code readers, generators; tape search systems / Eq / S 20 / E 57
- Cimco Data Processing Co., (Div. of MAF Development Corp.), 5600 Paramount Blvd., Long Beach, Cal. 90805 / 213-634-0606 / *C 67
IBM 360/20, IBM 402. Accounting package: general ledger, financial statements, accounts receivable & payable, payrolls, production control, inventory control, sales analyses, P/R distribution; wiring for 402, 403, 407, processing, instructing customer's personnel pending customer's equipment delivery / Eq Sv Le / S 5 / E 59
- The CiMS Group, Inc., Penn Sheraton, Pittsburgh, Pa. 15230 / 412-281-2727 / *C 67
Consulting and programming services; information and systems engineering; operations research. Courses in systems, programming / Sv Co / S 5 / E 65
- Cincinnati Time Recorder Co., 1733 Central Ave., Cincinnati, O. 45214 / 513-241-5500 / *C 65
Fire alarms, master time and program systems, time recorders, indicating wall clocks, signaling devices, automatic parking control equipment, service supplies and data collection systems / S 300 / E 1896
- C. P. Clare & Co., 3101 Pratt Ave., Chicago, Ill. 60645 / 312-262-7700 / *C 67
Relays, related control components; mercury-wetted contact relays, sealed reed relays ("Clareed")[®]; crystal can and telephone type relays; stepping switches / S 2000 / E 37
- Clary Datacomp Systems (Div. of Clary Corp.), 404 Junipero Sierra, P.O. Box 1, San Gabriel, Cal. 91776 / 213-283-9485 / *C 67
Digital small scale computer; arithmetic units, paper tape punch, readers / Eq Co Le / S 80 / E 39
- Codamite Division, Pacific Ordnance & Electronics Co., 1747K1 W. Lincoln Ave., Anaheim, Cal. 92801 / 714-776-5432; 635-4100 / *C 67
Printers / Eq / S 200 / E 52
- Cognitronics Corp., 549 Pleasantville Rd., Briarcliff Manor, N.Y. 10510 / 914-R09-7900 / *C 66
Full line of composing room computers; remote optical scanners; digital to audio devices - "Speechmaker" units / S 35 / E 61
- Cohu Electronics, Inc., Box 624, San Diego, Cal. 92112 / 714-277-6700 / *C 67
DC data amplifiers, digital data logging systems, digital multimeters, closed-circuit television systems / S 225 / E 44
- Collins Radio Co., Dallas, Tex. 75207 / 214-Ad5-9511 / *C 66
Complete line of equipment and systems for communication, computation and control / S 18,000 / E 33
- Colorado Instruments, Inc., 1 Park St., Broomfield, Colo. 80020 / 303-466-7333 / *C 67
Central Data Recording Systems, C-Dek (Computer Data Entry Keyboard) / S 75 / E 61
- Columbia Commercial College, 1234 Hampton St., Columbia, S.C. 29201 / 803-

Roster of Organizations

- 253-6479 / *C 67
Courses in programming, computing / Co / S 20 / E 35
- Columbia Ribbon & Carbon Mfg. Co., Inc., Herhill Rd., Glen Cove, N.Y. 11542 / 516-676-2730 / *C 67
Data processing film and fabric ribbons; continuous spirit and offset duplicating masters; magnetic inked ribbons, carbons / S 500 / E 05
- Columbia Technical Corp., 50 St. at 25 Ave., Woodside, N.Y. 11377 / 212-932-0800 / *C 66
Delay networks for use in computers; hybrid cermet networks for use in computers; HUMISEAL line of insulating coatings for protection of electronic assemblies against environmental stresses / S 124 / E 50
- Combined Data Group Inc., 180 Broadway, New York, N.Y. 10038 / 212-964-1084 / *C 67
Consulting and service bureau: 1401 tape system, 360/30 tape system (on order), continuous forms / Sv Co / S 30 / E 66
- COMCOR, Inc. (Div. of Astrodata, Inc.), 1335 S. Claudina St., Anaheim, Cal. 92803 / 714-772-4510 / *C 67
Analog/hybrid computer systems and components / Eq Co Le / S 393 / E 59
- Commerce Clearing House, Inc., 4025 W. Peterson Ave., Chicago, Ill. 60646 / 312-C07-9010 / *C 66
Loose leaf automation reporter / S 1800 / E 13
- Components Corp., 106 Main St., Denville, N.J. 07834 / 201-627-0290 / *C 67
DCU-100 solid state decade counter / S 10 / E 43
- Computab, Inc., 4202 Murray Ave., Pittsburgh, Pa. 15217 / 412-521-1883 / *C 67
Service bureau: IBM 360/30 computer; keypunching, tab equipment. Main service: mailing list labels, maintenance and creation / Sv Ti / S 35 / E 60
- Comput-A-Credit, Inc., Pan Am Bldg., 200 Park Ave., New York, N.Y. 10017 / 212-YU6-2515 / *C 67
Computer-based touch tone translators to keypunch and audio response devices including job displays for retail credit and banking industries / Eq Sv Ti Co Le / S 60 (under contract) / E 67
- Computations, Inc., Whitney Rd., Harvard, Mass. 01451 / 617-456-3631 / *C 67
Programming services: business, scientific, software / Sv / S 12 / E 58
- Computer Applications Center, Inc., 516 Hutton Place, Columbus, O. 43215 / 614-224-8139 / *C 67
Consulting, processing services. Specialized services include engineering computations, data processing for engineering profession, construction industry. Systems study or problem analysis; computer programming; computer service; problem translation. Equipment includes: IBM 1130 computer; IBM 1627 plotter; IBM teleprocessing equipment; miscellaneous peripheral equipment / Eq Sv / S 8 / E 66
- Computer Applications Inc., 555 Madison Ave., New York, N.Y. 10022 / 212-759-1310 / *C 67
Computing, consulting and programming services; systems engineering. Equipment includes 360/20-30; 1401; CDC 1601; 1410; 360/75 / Eq Sv Ti Co / S 2000 / E 61
- Computer Associates, Inc., Lakeside Office Park, Wakefield, Mass. 01880 / 617-245-9540 / *C 66
Computing services; consulting ser-
- vices; programming services / S 50 E 61
- Computer Center (Div. of Industrial State Bank & Trust Co.), 1228 S. Burdick, Kalamazoo, Mich. 49001 / 616-349-9684 / *C 67
Business, financial data processing services / Sv Le / S 42 / E 63
- The Computer Center of Southern New England (Div. of Industrial National Bank), Rm. 520 Industrial Bank Bldg., 111 Westminster St., Providence, R.I. 02903 / 401-861-6100 / *C 67
Payroll; insurancy agency, demand deposit, mortgage, Christmas Club accounting; accounts receivable, billing; time sharing systems; savings application; golf handicap computing; account reconciliation services / Sv Ti Le / S 15 / E 64
- Computer Command & Control Co., Suite 1315, 1750 Pennsylvania Ave. N.W., Washington, D.C. 20006; and Suite 510, Wilford Bldg., 33 & Arch Sts., Philadelphia, Pa. 19104 / Washington, 202-298-6507; Philadelphia, 215-387-1500 / *C 67
Analysis, system design, management information system implementation, programming, executive systems design / Sv Co / S 40 / E 63
- Computer Consultants, Inc., 1340 Commonwealth Ave., Boston, Mass. 02134 / 617-734-4569 / *C 67
Programming design, consulting for systems; software development; real-time, scientific, engineering and commercial applications / Sv Co / S 3 / E 64
- Computer Control Co., Inc., Old Connecticut Path, Framingham, Mass. 01701 / 617-879-2600 / *C 66
Computers and special-purpose digital systems for space, engineering, training, scientific and business applications. Digital modules, test instruments, magnetic core memories. Space vehicle instrumentation, simulation and data handlers; information storage and retrieval; missile tracking and positioning; signal processing and time compression; language translators; industrial process and machine tool control; business data processing; pulse pattern and range time code generation; computer training devices / S 1500 / E 53
- Computer Devices Corp., 63 Austin Blvd., Commack, L.I., N.Y. 11725 / 516-543-4220 / *C 67
Delay lines, computer memories / S 50 / E 60
- The Computer Exchange, Inc., 30 East 42nd St., New York, N.Y. 10017 / 212-661-5870 / *C 67
Used computer systems of all major manufacturers (2nd and 3rd generation); used unit record equipment; computer time brokerage, sales; EDP consulting; computer leasing / Eq Sv Le / S 6 / E 66
- Computer Fulfillment, 225 East St., Winchester, Mass. 01890 / 617-729-4650 / *C 67
Specialized services and data processing for publishing industry; subscription fulfillment, circulation file maintenance and analysis; reader inquiry processing; consulting / Sv / S 12 / E 63
- Computer Fulfillment Corp., 84 So. Bayles Ave., Port Washington, N.Y. 11050 / 516-767-0639 / *C 67
Data processing service: accounts receivable, list maintenance, mail order fulfillment, consulting, sys-
- tems & programming 1401 and 360 / Sv / S 15 / E 65
- Computer International Sales Co., 2708 Bagley (P.O. Box 66847), Houston, Tex. 77006 / 713-JA4-3111 / *C 66
Sell used computers on commission for owners / S 8 / E 64
- Computer Label Co., 401 Broadway, New York, N.Y. 10013 / 212-925-3345 / *C 67
Marginal punched, continuous addressing label paper, heat transfer paper, pressure sensitive labels for data printers / S 15 / E 47
- Computer Logic Corp., 1528-20th St., Santa Monica, Cal. 90404 / 213-451-9754 / *C 67
Discrete logic cards IC; totalizers; counter timers; instruments for logic training and evaluation; data acquisition systems / S 12 / E 60
- Computer Methods Corp., 740 Mamaroneck Ave., White Plains, N.Y. 10605 / 914-428-0400 / *C 67
Programming, systems and consulting services for real-time and batch-type commercial applications; computation center housing a 7080 (160K, 15 tapes), 1401 (4K, 3 tapes, card reader/punch, printer), data transmission capabilities (7711) / Sv / S 60 / E 61
- Computer Programmers & Analysts, Inc. (Div. of Levin-Townsend Computer Corp.), 280 Madison Ave., Rm. 604, New York, N.Y. 10016 / 212-679-5633 / *C 67
Consulting services in systems analysis and programming; application development for System 360, Models 30, 40, 50, and 65; programming services including COBOL, FORTRAN, ALGOL, and PL/I utilizing full O/S, DOS, TOS; consultation available for 1400 and 7000 series equipment; computation facilities provided by our service bureau / Sv / S 50 / E 62
- Computer Programming Concepts, Inc., Atkinson Sq., Suite 802, Cincinnati, O. 45246 / 513-771-5551 / *C 67
Computing, consulting, programming and time-shared computing services; courses (programming) / Sv Ti Co / S 6 / E 63
- Computer Progress, Inc., 120 East 56th St., New York, N.Y. 10022 / 212-751-3430 / *C 67
Analysis and programming services / Sv / S 20 / E 65
- Computer Sciences Corp., 650 N. Sepulveda Blvd., El Segundo, Cal. 90245 / 213-678-0592 / *C 67
Software: systems analysis, design, development; systems and applications programming; operational systems; commercial applications; applied sciences; management information technology; remote access service bureaus; facilities management, operation, maintenance; problem-solving / Sv Ti / S 2400 / E 59
- Computer Service Consultants, Inc., 59 West Shore Rd., Warwick, R.I. 02889 / 401-739-6544, 6595 / *C 67
Service bureau: professional consultants, programming, systems analysts, data processing, other related services, system program conversions for updated installations / Sv / S 5 / E 64
- Computer Services Co., Lakewood Center Bldg., P.O. Box 3396, Tacoma, Wash. 98499 / 206-584-7214 / *C 67
Contract key-punching; payroll, accounts receivable, insurance agency, fuel oil dealer and golf handicap

Roster of Organizations

- record systems; education processing; inventory; mailing lists; general ledger and financial statements / Sv / S 20 / E 65
- Computer Sharing Inc., 363 Wedgewood Dr., Blackwood, N.J. 08012 / 609-227-6814 / *C 67
Time sharing commercial utility, remote terminals, batch processing / Sv Ti Co / S 10 / E 66
- Computer Supplies Co., 2301 Fifth Ave., Seattle, Wash. 98121 / 206-623-1617 / *C 67
Sell used computers, data processing equipment; install raised floors, environmental systems; complete line of accessories, supplies / Eq Le / S 4 / E 65
- Computer Supplies, Inc., 9540 West Bryn Mawr Ave., Rosemont, Ill. 60018 / 312-678-6780 / *C 67
Manufactures tabulating cards; distributes magnetic tape, etc. / S 10 / E 66
- Computer Systems Co., 1470 St. Charles Ave., Cleveland, O. 44107 / 216-228-4100 / *C 67
Technical data processing consultants and software contractors providing: feasibility studies, equipment selection assistance, application development, systems design and programming services for digital computers / Sv / S 10 / E 64
- Computer Systems Division, Graphic Controls Corp., 189 Van Rensselaer St., Buffalo, N.Y. 14210 / 716-853-7500 / *C 67
GE 265 time-sharing computation service provides on-line through use of Model 33 or 35 teletype stations or other compatible conversational terminal equipment; IBM 1440 remote access real time system operating in conversational inquiry mode through IBM 1050 class terminals; continuous data processing forms; computer system, forms design, general system design / Sv Ti Co / S 750 / E 57
- Computer Systems Institute, Inc., 300 Sixth Ave., Suite 275, Pittsburgh, Pa. 15222 / 412-261-6110 / *C 66
Training of computer programmers on RCA 301, IBM 1401-1410 systems / S 12 / E 62
- Computer Tabulating Corp., 136 Main St., Hempstead, N.Y. 11550 / 516-489-7481 / *C 67
Total services from key punching, tabulating and computer (1401, 360) / Sv Ti / S 50 / E 53
- Computer Technology Ltd., Sunley House, Maylands Ave., Hemel Hempstead, Herts, England / Hemel Hempstead 4727 / *C 67
Low-cost, high-performance modules; processors, stores, interfaces, displays, backing stores; Modular One real time computing system / Eq / S 50 / E 66
- Computer Test Corp., 3 Computer Dr., Cherry Hill, N.J. 08034 / - / *C 66
Core testers, pulse generators, memory test systems / S 250 / E 62
- Computer Usage Co., Inc., 344 Main St., Mount Kisco, N.Y. 10549 / - / *C 67
Systems analysis, programming services, computer time sales, educational services / Sv Co / S 1000 / E 55
- Computer Usage Development Corp., 22 West Rd., Towson, Baltimore, Md. 21204 / 301-823-1300 / *C 67
Consultants in all areas of data processing systems and applications including feasibility studies, systems analysis, programming, installation management; computing services, time sales / Sv Ti Co / S 25 / E 63
- Computer Usage Development Corp. (Div. of Computer Usage Co.), 8939 Sepulveda Blvd., Los Angeles, Cal. 91606 / 213-670-7246 / *C 67
Programming and analysis; consulting services; computer time brokering / Sv Ti Co / S 800 / E 55
- Computer Usage Development Corp. (Div. of Computer Usage Co., Inc.), 7315 Wisconsin Ave., N.W., Washington, D.C. 20014 / 301-656-0200 / *C 67
Two system 360/30's on premises; data processing, scientific programming and analysis services / Eq Sv Ti Co / S 200 / E 55
- Computer Usage Development Corp. (Div. of Computer Usage Co.), Barclay Bldg., City Line & Belmont Aves., Bala Cynwyd, Pa. 19004 / 215-839-4185 / *C 67
Consulting, analysis, programming services to owners or renters of computers; areas include data processing, software systems and development, management science / Sv Co / S 65 / E 55
- Computing & Software, Inc., 8155 Van Nuys Blvd., Panorama City, Cal. 91402 / 213-781-7960 / *C 67
Computer software development; scientific and business applications programming; mathematical and statistical analysis; business data processing; scientific computing; electronic and optical data reduction; equipment maintenance; data analysis and quality control / Sv / S 1152 / E 47
- Computrol Systems, Inc., 361 E. Paces Ferry Rd., N.E., Atlanta, Ga. 30305 / 404-872-5806 / *C 67
Problem-oriented on-line, time-sharing input devices; nation-wide, time-shared, on-line computer utility; consulting in on-line, time-shared systems / Sv Ti / S 20 / E 65
- Computron Inc., 122 Calvary St., Waltham, Mass. 02154 / 617-899-0880 / *C 67
Magnetic tape / S 250 / E 60
- Compress, Inc., 2120 Bladensburg Rd., N.E., Washington, D.C. 20018 / 202-529-0360 / *C 67
Computer systems, software design and development; computer evaluation using simulation techniques; programming services / Sv Co / S 92 / E 62
- COM-SHARE Inc., 4001 W. Devon Ave., Chicago, Ill. 60646 / 312-282-9444 / *C 67
Computing, consulting and programming services. Time-shared computing services using SDS 940 computers in Ann Arbor, Mich., Chicago, Ill., Minneapolis, Minn., and Houston, Tex. Instruction in computing, programming and systems / Sv Ti Co / S 50 / E 66
- Comtech, 4318 Hamilton St., Hyattsville, Md. 20781 / 301-779-0111 / *C 67
Applied mathematics, computer programming, scientific programming / Sv / S 5 / E 65
- Concap Computing Systems, Suite 226, Claremont Hotel, Berkeley, Cal. 94611 / 415-848-6020 / *C 67
Time-shared conversational computing for civil and structural engineers; software development for business, industry / Sv Ti / S 6 / E 66
- Connecticut Technical Corp., 3000 Main St., Hartford, Conn. 06120 / 203-522-6167 / *C 67
Keyboards; keyboard-perforators; input/output typewriters; typewriter tape preparation systems; digital printers, strip and line; custom peripheral design; graphic art special tape units; typewriter operating units / Eq Sv Co / S 20 / E 60
- Conrac Corp. 1600 S. Mountain Ave., Duarte Cal. 91010; and 330 Madison Ave., New York, N.Y. 10017 / 213-681-2311 (Cal.); 212-687-3330 (N.Y.) / *C 67
Data acquisition devices, encoders, numerical controls; measurement and control devices; instruments; timing devices; ultrasonic devices; nucleonic devices / S 2000 / E 45
- Consolidated Avionics (Div. of Condec Corp.), 800 Shames Drive, Westbury, N.Y. 11590 / 516-334-8400 / *C 67
Transistorized power supplies, stock and custom-design for use in computers and computer systems / S 230 / E 57
- Consolidated Electrodynamics Corp. (Div. of Bell & Howell Co.), 360 Sierra Madre Villa, Pasadena, Cal. 91109 / 213-796-9381 / *C 67
Analog computers, amplifiers, data recording equipment, magnetic heads, recording papers, magnetic tape / S 2500 / E 37
- Construction Products, Inc., 356 Chestnut St., Ashland, Mass. 01721 / 617-881-1700 / *C 67
Site contracting for computer facilities, including raised floors, air conditioning, partitions, ceilings / S 6 / E 65
- Continental Computer Associates, Inc., Beaver Hill, Jenkintown, Pa. 19046 / 215-224-2244 / *C 67
Leasing of IBM System 360 computers, punch card equipment. Management services: programming, feasibility studies, implementation, proposal analysis / Eq Sv Le / S 30 / E 65
- Continental Connector Corp., 34-63 56th St., Woodside, N.Y. 11377 / 212-TW9-4422 / *C 66
Precision electronic connectors for computers and data processing equipment; printed circuit, rack and panel, power, special designs, micro-circuit module sockets / S 525 / E 52
- Continental Systems Inc., 205 W. Fourth St., Cincinnati, O. 45202 / 513-381-7675 / *C 67
Specialists in automobile dealer accounting: journal, G/L, B/S, corporation financial statements, management business trend analysis; misc. sales analysis. Also offer systems, programming, consulting services, payroll, other business applications. H-200 computer, key-punch services / Sv / S 6 / E 66
- Control Data Corp., 8100 34th Ave., So., Minneapolis, Minn. 55440 / 612-888-5555 / *C 67
Digital computer systems, components, peripheral equipment; industrial and supervisory control systems; communications equipment; electro-mechanical devices / Eq Sv Ti Co Le / S 13,000 / E 57
- Control Data Corp., Control Systems Div., 4455 Miramar Rd., La Jolla, Cal. 92037 / - / *C 66
Electronic data processing and systems design; consulting services of all kinds / S 315 / E 56
- Control Data Corp., Data Display Div., 2401 N. Fairview Ave., St. Paul, Minn. 55113 / 612-631-0550 / *C 67
Cathode ray tube displays, microfilm computer recorders, remote terminals / Eq Co / S 500 / E 58
- Control Data Corp., Government Systems Div., 3101 E. 80th St., Minneapolis,

Roster of Organizations

- Minn. 55440 / - / *C 66
Special purpose digital computers and systems / S ? / E ?
- Control Data Corp., Houston Data Center, 7135 Office City Dr., Houston, Tex. 77017 / 713-644-2221 / *C 67
Professional programming and consulting services. Equipment includes CDC 3600, CDC 3200, CDC 160-A, SIE analog-digital converter, and Calcomp plotters / Sv Ti / S ? / E ?
- Control Data Corp., Special Systems Div., 8616 La Tijera, Los Angeles, Cal. 90045 / 213-776-3680 / *C 67
Large scale, special, multifunctional computer system analysis, configuration, development, integration, installation, management; complete hardware, software, maintenance contracting / Eq Sv Ti Co Le / S 66 / E 66
- Control Equipment Corp., 19 Kearney Rd., Needham Heights, Mass. 02194 / 617-444-7550 / *C 66
Digital logic modules, custom digital systems, digital instrumentation including multiplexers, A/D converters, output buffers, data loggers, similar data processing instrumentation / S 25 / E 56
- Control Logic, Inc., (Subsid. of Schaevitz Engineering), 3 Stratmore Rd., Natick, Mass. 01760 / 617-655-1170 / *C 67
Digital circuit cards/modules; special purpose digital systems / Eq / S 35 / E 61
- Controlmag Laboratories, 2459 Susquehanna St., Roslyn, Pa. 19001 / 215-884-8098 / *C 65
Custom digital counters and controls / S 18 / E 59
- Control Processing Services, 5809 Annapolis Rd., Hyattsville, Md. 20784 / 301-779-3770 / *C 67
Specialize in direct mailing field; IBM 360/30, 1401 12K; three upper-lower case printers / Eq Sv / S 55 / E 64
- Control Science Corp., 5150 Duke St., Alexandria, Va. 22304 / 703-354-9000 / *C 65
Decoders, encoders; active solid-state filters; displays, electronic and electro-mechanical; telemetering systems / S 35 / E 61
- Control Technology, Inc., (Div. of Milgo Electronic Corp.), 3450 E. Spring St., Long Beach, Cal. 90806 / 213-426-8328 / *C 67
Hybrid computing facility. Specialists in digital simulation; real time control; data acquisition programs; compilers; assemblers and program conversion / Sv Co Ti / S 20 / E 60
- Cook Electric Co., Data Stor. Div., 6401 W. Oakton, Morton Grove, Ill. 60053 / 312-967-6600 / *C 66
Systems engineering assistance; computer peripheral equipment including photoelectric paper tape readers. incremental and continuous digital magnetic tape transports with read and write capability; magnetic drum recorders; recorder development, design and manufacture capability / S 1500 / E 1897
- Co-Ordinated Data Accounting, 319 Alden Pl., Orange, N.J. 07050 / 201-672-6367 / *C 67
Payroll, accounts receivable, accounts payable services / Sv / S 5 / E 66
- Cornell-Dubilier Electronics, Div. Federal Pacific Electric Co., 50 Paris St., Newark, N.J. 07101 / 201-624-7500 / *C 66
Full line of capacitors for computer application; delay lines / S 3300 / E 20
- M. L. Councill Associates, Inc., 721 Ellsworth Dr., Rm. 204, Silver Spring, Md. 20910 / 301-587-1755 / *C 67
Data processing accessory equipment / Sv / S ? / E 60
- C.P. & S., Inc., 1141 Spring St., N.W., Atlanta, Ga. 30309 / 404-873-4578 / *C 67
Management consultants and service bureau; Honeywell 120, 16K, 4 tape system; sorters, collators, reproducers, key punches and key verifiers / Sv / S 12 / E 66
- Created Space, Inc., 175 Fifth Ave., New York, N.Y. 10010 / 212-675-3514 / *C 67
Engineer, design, build computer rooms; consultants for planning, expansion / Sv / S ? / E 65
- Creed & Co. Ltd., (Div. of ITET Corp.), Hollingbury, Brighton, Sussex, England / Brighton 507111 / *C 67
Make teleprinters, ancillary equipment, data processing equipment / Eq Sv Le / S 2800 / E 09
- Crystalonics, Inc., 147 Sherman St., Cambridge, Mass. 02140 / 617-491-1670 / *C 65
Semiconductors, solid circuits / S 100 / E 59
- James Cunningham Son & Co., Inc., 10 Carriage St., Honeoye Falls, N.Y. 14472 / 716-624-2000 / *C 66
Computer components: scanners, switch matrix, automatic controls keyboards, systems engineering / S 125 / E 1838
- Cyber-Tronics, Inc., 915 Broadway, New York, N.Y. 10010 / 212-674-9150 / *C 67
Leasing computers, punch card machines; buying and selling used data processing machines; maintenance service / Eq Sv Le / S 165 / E 61
- Cybetronics Inc., 132 Calvary St., Waltham, Mass. 02154 / 617-899-0012 / *C 67
Magnetic tape rehabilitation services, cleaners, cleaners, testers, certifier systems; computer performance monitor systems / Eq Sv / S 75 / E 60
- Cycle Equipment Co., P.O. Box 307, Los Gatos, Cal. 95030 / 408-378-4220 / *C 67
Punched tape handling equipment: winders, feeders, unwinders (powered, unpowered), reels, tape transports / S 10 / E 48
- D**
- R. N. Dailey, Inc., 101 Park Ave., New York, N.Y. 10017 / 212-683-6280 / *C 67
Systems consulting and programming / Sv Co / S 16 / E 65
- Dallas Tabulating Service, Inc., 1222 Ft. Worth Ave., Dallas, Tex. 75208 / 214-RI1-1408 / *C 67
1401 computer and IBM card processing services for commercial, financial, educational and agricultural concerns / Sv Co / S 18 / E 46
- DA-PEX — Data Processing Equipment Exchange Co., 334 Francis Bldg., Louisville, Ky. 40202 / 502-451-7457, 502-585-5454 / *C 67
Used computer brokers for EDP equipment and computer systems / Sv Le / S ? / E 60
- DARTEX Div. of Tally Corp., 1222 E. Pomona St., Santa Ana, Cal. 92707 / 213-542-1196 / *C 67
Data transmission equipment; data collection equipment; magnetic tape transports / Eq / S 36 / E 64
- Dashew Business Machines, Inc., 2219 Main St., Santa Monica, Cal. 90406 / 213-392-3981 / *C 67
Embossed and punched plastic card processing, service with punched tab cards as input / Sv / S 200 / E 52
- Data Acquisition Corp., (Div. of Picker X-Ray Co.), 417 Washington Ave., North Haven, Conn., and 2980 Whitney Ave., Hamden, Conn. 06518 / 203-248-5529 / *C 67
Desk-top digital computers / Eq Co / S 15-20 / E 64
- Data Associates, 1160 Terra Bella Ave., Mountain View, Cal. 94040 / 415-961-8760 / *C 67
Services and equipment for cleaning, testing and recertifying magnetic computer tape / Eq / S 4 / E 64
- Data Automation Co., Inc., 4858 Cash Rd., Dallas, Tex. 75247 / 214-ME7-2403 / *C 67
Leasing IBM data processing and punch card machines / Eq Le / S 25 / E 65
- Data Center Inc., (Div. of Aries Corp.), Westgate Research Park, McLean, Va. 22101 / 703-893-4450 / *C 67
Systems analysis, programming, IBM keypunch, Mohawk data recorders, UNIVAC 90 column punch, UNIVAC 1005 / Sv Ti Co / S 100 / E 64
- Data Communications, Inc., Church Rd., P.O. Box 29, Moorestown, N.J. 08057 / 609-235-6650, 51, 52 / *C 66
Digital communication and terminal equipment, Data transmission terminals; time division multiplex terminals; high speed teleprinters; and cryptic devices / S 25 plus manufacturing / E 62
- Data Control Services, 948 High Ave., SW, Canton, O. 44706 / 216-456-7333 / *C 67
Programming and systems analysis services for business management; complete computer systems design and services. IBM data processing equipment and Burroughs B260 computer / Sv Ti / S 10 (full time); 10 (part time) / E 63
- Data-Copy Co., (Div. of O. H. Davison Co.), 760 Bryant St., San Francisco, Cal. 94107 / 415-392-6613 / *C 67
Computer-graphic services including direct image/photo offset reproduction; collating/binding; computer-to-microfilm copy; text storage, editing and formatting; document preparation; file conversion; record maintenance / Sv / S 5 / E 64
- The Data Corp., 4050 Wilshire Blvd., Los Angeles, Cal. 90005 / 213-385-9255 / *C 65
Consultants, methods analysts, systems analysts, programmers for major computer manufacturers. In house IBM 1460, 360, SDS 910, Philco and REI Optical scanners. Representation in principal cities / S 150 / E 62
- Datacraft Inc., 15225 S. Main St., Gardena, Cal. 90247 / 213-321-2320 / *C 67
Weekly and monthly rental of small general purpose computers Model PDP-8/S (manufactured by Digital Equipment Corp.); training and programming assistance to rental customers / Eq Sv Le / S 17 / E 58
- Data Documents/Inc., (Div. of Data Documents), 2215 McKinney, P.O. Box 52459, Houston, Tex. 77052 / 713-222-9289 / *C 67
Manufacturers of tabulating cards (standard, document, gravure, continuous); sell magnetic tapes, continuous paper forms and pressure sensitive labels / S 21 / E 61
- Data Dynamics, Inc., 305 Webster St., Monterey, Cal. 93940 / 408-375-4133 / *C 65

Roster of Organizations

- Mathematical, operations and systems analysis and programming / S 110 / E 62
- Data Dynamics, Inc., (Subdiv. of Onsite Project), P.O. Box 6841, MacDill AFB, Fla. 33608 / 813-838-1811 / *C 67
Functional analysis and design; system software development / Sv Ti Co / S 35 (Project) / 64 (Project)
- Datafilm, Inc., 41 East 42nd St., New York, N.Y. 10016 / 212-986-5030 / *C 67
Microfilming services converting computer magnetic tape directly; microfilming all business data / Sv / S 5 / E 66
- Data Forms Co., Inc., P.O. Box 381, Kenmore Station, Boston, Mass. 02215 / 617-734-4807 / *C 67
Continuous forms, labels and binders / S 4 / E 65
- Data, Inc., 4620 Lee Hwy., Arlington, Va. 22207 / 703-524-0400 / *C 67
Computing, consulting and programming services. Equipment includes IBM 360/30 / Sv / S 65 / E 60
- Data Institute, Inc., 248 Farmington Ave., Hartford, Conn. 96105 / 203-249-9649 / *C 67
System design, programming and key-punch services; keypunch, computer operations and programming training / Sv Co / S 8 / E 64
- Data-link Corp., 4546 El Camino Real, Suite W. (P.O. Box AP), Los Altos, Cal. 94022 / 415-327-2616 / *C 67
Computer components and data processing accessory equipment (punched tape winders, splicer-gauge-punch, converters, paper tape, tape handlers) / S 25 / E 64
- Data Machines, Inc. -- see Decision Control, Inc./Data Machines, Inc.
- Data Management Associates, Inc., P.O. Box 7966, Atlanta, Ga. 30309 / 404-872-1671 / *C 67
Business form and information retrieval systems; sales and services; data processing accessory equipment and control panels / Sv / S 8 / E 64
- Datamation Assistants Co., Inc., Ninianne Blvd. & Rt. 1, Princeton, N.J. 08540 / 609-452-2211 / *C 66
Consultation hardware/software, service bureau job processing, keypunch/optical scanning conversions, information retrieval and total management system specialists / S 160 / E 65
- Datamation Services Inc., (Branch of Datamation Services), 381 Sunrise Hwy., Lynbrook, N.Y. 11563 / 516-593-3338 / *C 67
Programming, consulting and data processing services / Sv Ti / S 20 / E 65
- Datamedia Corp., 66 Hawley St., Binghamton, N.Y. 13902 / 607-722-6416 / *C 67
Data processing cards and ribbons, computer magnetic tape, source data recording devices, programming and consulting services / Sv / S 50 / E 65
- Datametrics Corp., 8217 Lankershim Blvd., North Hollywood, Cal. 91605 / 213-767-9811 / *C 67
A-D, D-A, D-D interface equipment which links computing equipment of different manufacturers together / Eq / S 20 / E 62
- Data Network Corp., 460 Twelfth Ave., New York, N.Y. 10018 / 212-LW4-2500 / *C 67
Time-sharing services for industry, including business data processing; business, scientific and engineering problem-solving; management information systems; computerized message switching; information retrieval; industry-wide data processing and data communications systems / Eq Sv Ti / S ? / E 65
- Data Operations Inc., 24 Mill St., Arlington, Mass. 02174 / 617-643-6030 / *C 67
Data processing services and consulting for business and industry. Services include computer time rental, keypunching, reader service, paid & control circulation, file maintenance. Equipment includes IBM System 360/30 / Sv / S 14 / E 66
- Data Perspectives, Inc., 1724 Silver Lake Blvd., Los Angeles, Cal. 90026 / 213-662-1166 / *C 67
Offer services in research systems, social sciences, and motivational IBM equipment and supplies / Eq Sv Ti Le / S 30 / E 64
- Data Processing Consultants, Inc., 740 N. Rush St., Chicago, Ill. 60611 / 312-943-1323 / *C 67
Computer processing service of market research (usually survey research) data / Sv / S 40 / E 61
- Data Processing Exchange, Inc., 1100 Glendon Ave., Suite 1647, Los Angeles, Cal. 90024 / 213-479-6650, 213-879-1199 / *C 67
Data processing equipment available and wanted / Eq Le / S 3 / E 62
- Data Processing, Inc., 1225 American Heritage Life Bldg., Jacksonville, Fla. 32202 / 904-355-9673 / *C 67
Service bureau for business; offer engineering and organizations consulting, data processing services, mailing list maintenance and Cheshire mailing services. Equipment includes a Honeywell 200 computer, 4 magnetic tape drives, and a Cheshire R9000 mailing machine / Sv Co / S 15 / E 64
- Data Processing Service, 908 Penn Ave., Pittsburgh, Pa. 15222 / 412-261-3730 / *C 67
Service bureau with IBM 1401 computer plus all unit record (IBM) equipment / Eq Sv Ti / S 10 / E 58
- Data Processing Supplies, Inc., Hotel Alms, Cincinnati, O. 45206 / 513-961-0776 / *C 67
Supplies: panels, wires, tape, magnetic tape, paper tape. Elevated floors and computer room air conditioning / S 15 / E 59
- Data Processors Supply Co., Box 3263, Huntsville, Ala. 35810 / 205-859-3170 / *C 67
Supply E.A.M. computer equipment, data processing accessories, elevated flooring, site environmental systems, desk-top computers / Eq / S ? / E ?
- Data Products Corp., 8535 Warner Dr., Culver City, Cal. 90230 / 213-837-4491 / *C 67
High speed line/printers for OEM's; discfile memory storage systems for OEM's and end users; off-line magnetic tape and off-line paper tape to line/printer systems; on-line line/printer systems for end users / Eq / S 475 / E 62
- Data Products Sales Corp., (Div. of Data Products Corp.), 8535 Warner Dr., Culver City, Cal. 90231 / 213-837-4491 / *C 67
High speed, buffered on-line printer stations and off-line magnetic tape to printer stations; discfiles for on-line operation / Eq Le / S 800 / E 61
- Datapulse Inc., Datapulse Div., 509 Hindry Ave., Inglewood, Cal. 90306 / 213-671-4334, 678-4275 / *C 66
Pulse generators, data generators, word, frame and character generators / S 100 / E 62
- Datapulse Inc., KRS Instruments Div., 780 S. Arroyo Pkwy., Pasadena, Cal. 91105 / 213-792-4142, 681-7416 / *C 66
Data recording instrumentation utilizing continuous-loop magnetic tape cartridges / S 50 / E 62
- Data Reproduction Systems, 300 E. Beach Ave., Inglewood, Cal. 90302 / 213-678-1149 / *C 67
Microfiche readers, cameras and printers, and microfilm cameras / S 25 / E 64
- Data Services Corp., 2835 Springboro Rd., Dayton, O. 45401 / 513-298-1475 / *C 67
Data processing services / Sv Ti Co Le / S 35 / E 55
- DataStation of Los Angeles, (Div. of Commercial Computers Inc.), 1401 W. Olympic Blvd., Los Angeles, Cal. 90015 / 213-388-1411 / *C 67
Scientific computing time by the hour; IBM 360/30; IC-6000. Sales agents for IC-6000; leasing agents for used IBM / Sv Le / S 12 / E 65
- DataStation of New York, Inc., 666 Third Ave., New York, N.Y. 10017 / 212-867-0336 / *C 67
Market Standard Computer Corp.'s IC 6000 computer series with IBM 7094/7044 emulation. Also sell IBM 7094 time on own IC 6000; lease 2nd generation equipment / Eq Sv Le / S ? / E ?
- Data Supplies, Inc., 465 Boulevard, SE, Atlanta, Ga. 30312 / 404-622-9383 / *C 67
Tabulating cards, control panels and wires, computer tape, accessory equipment; continuous forms and cards; computer flooring and partitioning; pin-feed labels, binders; miscellaneous computer supplies / S 12 / E 57
- Data Systems Analysts, Inc., Cooper Pkwy. Office Bldg., N. Park Dr., Pennsauken, N.J. 08109 / 609-665-6088 / *C 67
Computer consulting, programming, system design services, etc. / Sv / S 50 / E 63
- Data Systems Corp., 16 Elizabeth St., West Conshohocken, Pa. 19428 / 215-825-1536 / *C 67
Custom data acquisition and/or translation systems / Eq / S 20 / E 61
- Data Systems, Inc., 434 Stinson Blvd., Minneapolis, Minn. 55413 / 612-331-9435 / *C 67
Computing and data processing services using Burroughs B-300 computer and IBM peripheral equipment; also offer keypunching services / Sv / S 40 / E 61
- Data Technics Corp., 508 10th St., Des Moines, Ia. 50309 / 515-288-9777, 515-288-2300 / *C 67
Systems engineering, programming, operations, consulting, training for client personnel services; equipment includes Honeywell 200, 120; IBM peripheral gear (keypunches, verifiers, sorters, collators, reproducing punches, interpreters, etc.); IBM 360 / Sv Ti Co (client personnel) / S 60-70 / E 63
- Data Trends, Inc., 1259 Route 46, Parsippany, N.J. 07054 / 201-334-1515 / *C 66
Computer/communications systems; remote I/O terminal devices; data collection systems; optical scanners (hand printed) / S 28 / E 63
- Data Tronics Corp., (Div. of Ark.-Best Corp.), 310 Towson Ave., Ft. Smith, Ark. 72901 / 501-SU2-8987 / *C 67
Data processing services, including programming, processing, systems design, keypunching, paper tape; equipment includes IBM 360 Model 30 32K with 3 disk drives and 2 tape drives; sorter; collator; reproducer

Roster of Organizations

- interpreter / Sv / S 28 / E 60
 Datatronics, Inc., 2501 Dickinson St.
 Philadelphia, Pa. 19146 / 215-H05-0485
 / *C 67
 Data processing and programming ser-
 vices / Sv / S 12 / E 59
- Datronc Rental Corp., 5210 Wesley Ter-
 race, Chicago, Ill. 60656 / 312-992-
 0760 / *C 67
 Purchase and leasing data processing
 EAM equipment to computers / Eq Sv Le
 / S ? / E ?
- Davidson Electronic Development Co., 2211
 Peninsula Dr., Erie, Pa. 16505 / 814-
 833-9818 / *C 66
 Front end specialists (parameter
 measurements, scanning, data reduc-
 tion and sequencing for computer in-
 put, tape or cards) / S 20 / E 51
- Davis Equipment, Inc., (Div. of Anken
 Chemical & Film), 5110 East 15th St.,
 Tulsa, Okla. 74112 / 918-WE9-3344 /
 *C 67
 Sales of digital computer tape, spe-
 cial packaging, rehabilitation -
 cleaning, programmed tension winding
 / S 100 / E 55
- Decision Control, Inc./Data Machines, Inc.,
 1590 Monrovia Ave., Newport Beach, Cal.
 92660 / 714-646-9371 / *C 67
 Data 620, Data 620I digital computers;
 VersaSTORE core memory systems; Versa
 LOGIC and micro VersaLOGIC modules /
 Eq / S 220 / E 56
- Decision Systems Inc., 1490 Queen Anne Rd.,
 Teaneck, N.J. 07666 / 201-833-2690 / *C
 66
 Systems development, computer programs
 and programming systems, analog and
 digital data processing services, com-
 puter application and feasibility
 studies, systems analysis, information
 retrieval, and automatic programming
 development / S 60 / E 60
- DEK Services, (Div. of Dorothy Kane School),
 11 West 42nd St., New York, N.Y. 10036
 / 212-L04-0230 / *C 67
 Service bureau for keypunch and veri-
 fying overloads; EAM applications;
 on premises leasing of time or equip-
 ment / Sv Co Le / S ? / E 38
- Dela Data Corp., 1718 San Pablo Ave.,
 Pinole, Cal. 94564 / 415-758-4224 / *C
 67
 Consulting and services (primarily
 test scoring) / Sv / S 4 / E 59
- Delco Radio Div., General Motors Corp.,
 700 E. Firmin St., Kokomo, Ind. 46901 /
 312-GL7-8461 / *C 65
 (Semiconductors) silicon and german-
 ium power transistors, silicon rec-
 tifiers, digital circuits and support
 equipment; data format converters;
 data acquisition and recording sys-
 tems; digital circuit modules to 10
 m.c. speeds; special purpose digital
 systems; solid state industrial con-
 trol systems / S 6000 / E 36
- Delcos, Inc., (Div. of McDonnell Co.),
 360 Western Federal Savings Bldg., Den-
 ver, Colo. 80202 / 303-534-6291 / *C 67
 Key punching, systems and programming
 consulting; programming services; ma-
 chine time / Sv Ti Co / S 85 / E 56
- Delta Data Systems, Inc., 9903 Rhode Is-
 land Ave., College Park, Md. 20741 /
 301-935-3144 / *C 67
 Simulation; systems analysis; systems
 design; computer programming; confi-
 guration management analysis; software
 conversions; training courses; sem-
 inars; customer orientation; manage-
 ment consultants; feasibility studies
 / Sv Co / S 40 / E 64
- Dennison Manufacturing Co., Machines Sys-
 tems Div., 300 Howard St., Framingham,
 Mass. 01702 / 617-873-3511 / *C 66
 Cummins-Dennison Dat-A-Read / S
 3800 / E 1844
- Design Automation, Inc., 809 Massachu-
 setts Ave., Lexington, Mass. 02173 /
 617-862-8998 / *C 67
 Computer analysis of electronic cir-
 cuits and systems; design review
 service; electronic circuit and sys-
 tem design / Sv Co / S 5 / E 65
- Detroit IPC, (Div. of General Electric
 Co., Information Services Dept.), 22150
 Greenfield Rd., Oak Park, Mich. 48237 /
 313-398-9000 / *C 67
 G.E. time-sharing services; batch
 processing / Sv Ti Co / S 12 (local)
 / E 66 (ISD Dept.)
- Dialight Corp., (Div. of Cons. Electron-
 ics Ind. Corp.), 60 Stewart Ave.,
 Brooklyn, N.Y. 11237 / 212-497-7600 /
 *C 67
 Indicator lights, illuminated push
 button switches, single plane num-
 eric readouts, "Datalites" (ultra-
 miniature indicator lights for com-
 puter and automation fields), trans-
 istorized indicator lights, indicat-
 ing lamps, time-delays relays. "Data
 Strips" and "Data Matrix" for com-
 puters and automation applications /
 S 250 / E ?
- Diamonite Products Mfg. Co., McConkey St.
 Ext., Shreve, O. 44676 / 216-547-4211
 / *C 65
 Computer components of alumina cer-
 amics, high strength, low loss, high
 density, electrical insulating, vac-
 uum tight, readily metallized. Sizes
 available, subminiature through nor-
 mal size requirements / S 175 / E 40
- DI/AN Controls, Inc., 944 Dorchester Ave.,
 Boston, Mass. 02125 / 617-288-7700 /
 *C 67
 Digital systems and equipment for
 commercial, industrial and military
 applications / Eq / S 250 / E 58
- Diebold Inc., 818 Mulberry Rd., S.E.,
 Canton, O. 44702 / 216-453-4592 / *C
 67
 Products for storage and fire pro-
 tection of in-put data for computers
 / S 5000 / E 1859
- Digi-Data Corp., 4315 Baltimore Ave.,
 Bladensburg, Md. 20710 / 301-266-9378
 / *C 67
 Digital magnetic tape recorders;
 paper to magnetic tape converters;
 punched card to magnetic tape trans-
 mission systems / Eq / S 25 / E 62
- Digital Development Corp., (Div. of
 Xebec Corp.), 5575 Kearny Villa Rd.,
 San Diego, Cal. 92123 / 714-278-9920
 / *C 67
 Rotating magnetic memory devices and
 systems / Eq / S 100 / E 59
- Digital Devices, Inc., 200 Michael Drive,
 Syosset, N.Y. 11791 / 516-921-2400 /
 *C 67
 Magnetostrictive delay lines, assoc-
 iated electronics, complete memories,
 communications buffers, analog and
 voice delay units / S 100 / E 62
- Digital Electronics Inc., Ames Court,
 Plainview, N.Y. 11803 / 516-433-7800
 / *C 67
 General purpose scientific and edu-
 cational systems; custom designed
 special data systems / Eq Co / S 50
 / E 61
- Digital Equipment Corp., 146 Main St.,
 Maynard, Mass. 01754 / 617-897-8821 /
 *C 67
 General purpose digital computers;
 A-D and D-A converters; logic mod-
 ules; CRT displays; test systems;
 printed circuit boards; magnetic
- tape systems / Eq Co / S 1500 / E 57
- Digitek Corp., 5959 W. Century Blvd.,
 Los Angeles, Cal. 90045 / 213-670-9040
 / *C 67
 Specialization in system programs to
 include operation systems, compilers,
 assemblers, loaders, and data manage-
 ment systems. Developed products
 include compilers for FORTRAN, PL/I,
 JOVIAL, SIMSCRIPT, and various spe-
 cial purpose languages / Sv / S 28 /
 E 61
- Digitronics Corp., 1 Albertson Ave.,
 Albertson, N.Y. 11507 / 516-484-1000 /
 *C 67
 Data communications and data acquis-
 ition equipment; paper tape readers
 and handlers / Eq / S 450 / E 57
- DISCON Corp., 4250 N.W. 10th Ave., Fort
 Lauderdale, Fla. 33309 / 305-565-5511
 / *C 67
 Digital plotters, coordinate readers,
 film readers; binary to decimal con-
 verters; digital data compression and
 recording systems; numeric readouts /
 S 50 / E 65
- Distributors Data Processing, 540 E.
 Delavan Ave., Buffalo, N.Y. 14211 /
 716-895-4800 / *C 67
 All unit record IBM equipment includ-
 ing IBM CAM computer / Sv / S 4 / E
 65
- Diversified Integration of Data Services,
 (Div. of Electronic Administrative
 Services, Inc.), 1745 Saratoga Ave.,
 San Jose, Cal. 95129 / 408-257-4800 /
 *C 67
 Analysis and programming of commer-
 cial, scientific systems and appli-
 cations; data processing and alge-
 braic compilers and assemblers;
 interpretive languages; operating
 systems; linear programming; matrix
 generators; information retrieval
 systems; machine feasibility and
 computer installation effectiveness
 studies / Sv Ti Co / S 20 / E 66
- Documentation Inc., 4833 Rugby Ave.,
 Bethesda, Md. 20014 / 301-656-9500 /
 *C 67
 Information systems design: consult-
 ing, basic research, computer pro-
 gramming and engineering, operation
 of information centers, indexing,
 abstracting, cataloging, microfilm-
 ing, optical scanning, photo-composi-
 tion, mechanized publishing.
 Microfiche readers / Sv Ti / S 650
 / E 51
- Document Control Associates, 1807 Elm-
 wood Ave., Buffalo, N.Y. 14207 / 716-
 875-6464 / *C 67
 Consulting services: management in-
 formation systems, computer feasi-
 bility studies; production scheduling
 and inventory control; on-the-job
 training of supervisors and operators
 / Sv Co / S 5 / E 62
- Dolin Metal Products, Inc., 315 Lexington
 Ave., Brooklyn, N.Y. 11216 / 212-638-
 9472 / *C 66
 Manufacturers of stock size data tape
 store units; special sizes mobile
 storage systems; tabulating card
 files / S 80 / E 48
- Mo Dorman Co., 785 Mission St., San
 Francisco, Cal. 94103 / 415-362-5713
 / *C 67
 New and used data processing accesso-
 ries; buy, sell and lease accessories
 as well as equipment; specializing in
 sale and installation of Friden equip-
 ment / Eq Sv Le / S 17 / E 18
- DPS, Inc., 1800 Longview Rd., Waukegan,
 Ill. 60085 / 312-662-3333 / *C 67
 Complete data processing services,

Roster of Organizations

- including MICR, punched tape keypunching, programming and systems consultation. Specialists in school and bank processing / Sv Ti Co / S 30 / E 64
- Drake Mfg. Co., 4626 N. Olcott Ave., Harwood Heights, Ill. 60656 / 312-867-7227 / *C 67
- Miniature lighting specialists manufacturing indicator, instrument and read-out lights, lenses and lamp-holders for commercial and military equipment / S approx. 140 / E 32
- Draughon Business College, 632 West 4th St., Winston-Salem, N.C. 27102 / 919-722-0121 / *C 67
- IBM key punch / S ? / E 24
- Dresser Products Inc., P.O. Box 2035, Providence, R.I. 02905 / - / *C 67
- Punched tape handling equipment and filing supplies / S 9 / E 55
- Drexel Dynamics Corp., Maple Ave., Horsham, Pa. 19044 / 215-927-6200 / *C 66
- Card readers, sub systems OEM, components, card feeders / S 200 / E 56
- Duluth Avionics, (Div. of Litton Systems, Inc.), Duluth Terminal Bldg., Duluth, Minn. 55802 / 218-727-8241 / *C 67
- Airborne inertial navigation systems electronics / S 600 / E 62
- E. I. duPont de Nemours & Co., Inc., Film Dept., 1007 Market St., Wilmington, Del. 19898 / 302-774-2421 / *C 67
- Industrial films for electrical/electronic applications, computer tapes, programming belts / S ? / E ?
- Dura Business Machines, 32200 Stephenson Hwy., Madison Heights, Mich. 48071 / 313-588-1100 / *C 66
- Dura MACH 10 automatic typewriters; Dura code converters / S 400 / E 61
- Durant Mfg. Co., 600 N. Cass St., Milwaukee, Wisc. 53201 / 414-271-9300 / *C 65
- Digital read-out instrument counters and indicators / S 300 / E 1879
- Dymec, (Div. of Hewlett-Packard Co.), 395 Page Mill Rd., Palo Alto, Cal. 94306 / 415-326-1755 / *C 67
- 4K--32K computer, with instrumentation peripherals for data acquisition / Eq Co Le / S 600 / E 57
- E**
- Eastman Kodak Co., 343 State St., Rochester, N.Y. 14650 / 716-325-2000 / *C 65
- Photographic equipment, staple synthetic and organic chemicals and dye-stuffs; facsimile equipment (photocopy); recording paper / S 50,000 / E 1889
- EBASCO Services Inc., (Div. of Electric Bond and Share Co.), 2 Rector St., New York, N.Y. 10006 / 212-014-4400 / *C 67
- Computing, consulting and programming services; information and systems engineering; economic and operations research; instruction in computing and programming. Equipment includes Control Data G-20 computer / Sv / S 1500 / E 06
- Ecco Consulting Inc., 615 Washington Rd., Pittsburgh, Pa. 15228 / 412-561-5509 / *C 67
- Operations research; software development; systems analysis and programming; engineering applications; simulation models / Sv / S 10 / E 64
- EDACO, Inc., 348 Baronne St., New Orleans, La. 70112 / 504-522-9295 / *C 67
- Sell, purchase, trade, and lease data processing equipment and supplies / broker / Le / S 3 / E ?
- EDCO Data Processing Corp., 226 West 37th St., New York, N.Y. 10018 / 212-LW4-0290 / *C 67
- Data center including IBM 1401 8K 4-tape, IBM 360-30 16K 6-tape, 30 keypunch machines; operating on 3 shifts / Sv Ti / S 55 / E 65
- E D P Corp., (Div. of Cenco Instruments Corp.), 1900 N. Mills Ave., Orlando, Fla. 32803 / 305-241-5324 / *C 67
- Time code generators; digital clocks; time code translators and formatters; digital displays / Eq / S 50 / E 59
- EDP Leasing Corp., 118 East 60th St., New York, N.Y. 10022 / 212-688-2369 / *C 67
- Leasing EAM equipment / Eq Le / S ? / E 65
- EDP Supply Co., (Div. of Publishers Supply Inc.), 313 Congress St., Boston, Mass. 02210 / 617-426-7974 / *C 67
- Paper tape and accessories, TWX paper tape, pin-feed labels, teletype paper, data phone / S 4 / E 60
- Educators Consultant Service, Inc., Seven Hills Plaza, 70 Madison St., Worcester, Mass. 01610 / 617-757-1714 / *C 67
- Educational service bureau established and run by educators for schools and colleges / Sv / S 6-8 / E 64
- Efficiency Bindery Inc., 55 Broadway, New York, N.Y. 10006 / 212-DI4-5568 / *C 67
- Specializing in binding data processing office records into permanent bound books on the premises or in our bindery / S 15 / E 23
- Thomas Ekeland Co., 100 William St., New York, N.Y. 10038 / 212-269-6975 / *C 67
- Tapes, disk packs library equipment versatile for max. capacity in least space; storage systems to mobilize on tracks existing libraries and stock rooms / Eq Sv / S 7 / E 57
- ELCO Corp., Maryland Rd. & Computer Ave., Willow Grove, Pa. 19090 / 215-659-7000 / *C 65
- VARICON* Connectors, BI/CON* Connectors, MICROCON* Connectors, MODUCON* Micro-modules, VARIMATE* Connectors, VARIPLATE* Connectors, VARIPAK* Card Cages, E-Z MATE* Tube Sockets (*Trade Mark) / S 700 / E 47
- Electric Indicator Co., Inc., Camp Ave., Stamford, Conn. 06879 / 203-322-1671 / *C 65
- Sub-fractional and fractional A/C and D/C motors, generators and blowers used in computers / S 170 / E 26
- Electro Instruments, Inc., 8611 Balboa Ave., San Diego, Cal. 92112 / 714-277-6590 / *C 65
- Digital voltmeters, ohmmeters, ratio-meters; analog-to-digital converters; wideband DC amplifiers, X-Y recorders, monitor oscilloscopes, digital data systems / S 647 / E 54
- N. V. Electrologica, 4 Bordewijkstraat, Rijswijk (ZH), The Netherlands / 070-906720 / *C 66
- El X2, EL X4, EL X8 computers; EL 1000 tape-reader; disc-storage-drive for interchangeable disc-packs / S 500 / E 56
- Electro-Mechanical Research, Inc., (Div. of Schlumberger Ltd.), P.O. Box 44, Princeton, N.J. 08540 Company divisions include: Aerospace Sci. Div., 5012 College Ave., College Park, Md. 20740; Computer Div., 8001 Bloomington Free-way, Minneapolis, Minn. 55420; Magnetics Div., P.O. Box 130, Van Nuys, Cal. 91408; Photoelectric Div., P.O. Box 44, Princeton, N.J. 08540;
- Telemetry Div., P.O. Box 3041, Sarasota, Fla. 33578 / 609-924-9100 / *C 67
- Small to large scale digital computers for scientific and engineering applications; both analog and digital data acquisition communications and processing systems / Eq / S 1600 / E 42
- Electro-Miniatures Corp., 600 Huyler St., So. Hackensack, N.J. 07606 / 201-488-7770 / *C 66
- Commutator switches. Metal segments and rings embedded in plastic compounds / S 152 / E 55
- Electronic Associates Inc., West Long Branch, N.J. 07764 / 201-222-1100 / *C 65
- Analog, digital and hybrid computers, digital plotting equipment, computing services / S 2500 / E 45
- Electronic Business Machines Co., 625 Bard Ave., Staten Island, N.Y. 10310 / 212-273-3636 / *C 67
- Buy, sell, purchase and leaseback used IBM DP equipment from key punches to computers / Eq Le / S 7 / E 61
- Electronic Calculus, Inc., 57 West 57th St., New York, N.Y. 10019 / 212-759-1212 / *C 67
- Services solving structural problems on computers for consulting engineers and industrial or state organizations; has large library of structural computer programs which are enumerated in a free folder and described in detail in a free handbook / Sv / S 9 / E 66
- Electronic Computer Programming Institute of Central Pa., Inc., (Div. of ECPI, Inc.), 49 N. Progress Ave., Harrisburg, Pa. 17109 / 717-545-4231 / *C 67
- Courses in data processing and computer programming / Co / S 18 / E 65
- Electronic Computer Programming Institute of Chicago, (Franchised branch of ECPI, Inc.), 220 S. State St., Chicago, Ill. 60604 / 312-922-7754 / *C 67
- EAM wiring, operation and education; 1401 and 360 education and programming; management science service bureau / Sv Co / S 8 / E 65
- Electronic Computer Programming Institute of Cincinnati, Inc., (Div. of ECPI, Inc.), 31 East 4th St., Cincinnati, O. 45202 / 513-421-6222 / *C 67
- 1401 and 360 computer programming training / Co / S 6 / E 65
- Electronic Computer Programming Institute of Columbus, Inc., (Franchised branch of ECPI, Inc.), 4544 Indianola Ave., Columbus, O. 43214 / 614-263-1841 / *C 67
- Courses and instruction in IBM data processing and computer programming, including IBM tabulating equipment operation, control panel wiring, and programming logic, languages, and computer operation for IBM 1400 and 360 series / Co / S 20 / E 66
- Electronic Computer Programming Institute of Detroit, (Div. of ECPI, Inc.), 16411 W. Eight Mile Rd., Detroit, Mich. 48235 / 313-273-1200 / *C 67
- Key punch, data processing and computer programming courses / Co / S 20 / E 65
- Electronic Computer Programming Institute of Milwaukee, Wis., (Franchised branch of ECPI, Inc.), 174 W. Wisconsin Ave., Milwaukee, Wis. 53203 / 414-276-7460 / *C 67
- IBM unit record; 1401 programming; system 360 instruction / Co / S 15 / E 65
- Electronic Computer Programming Institute of Northeastern Ohio, Inc., (Franchised brach of ECPI, Inc.), 850 Euclid Ave.,

Roster of Organizations

- Cleveland, O. 44114 / 216-771-5855 / *C 67
 Courses and instruction in IBM data processing and computer programming, including IBM tabulating equipment operations, control panel wiring, and programming logic, languages, and computer operation on IBM 1400 and 360 series / Co / S 30 / E 64
- Electronic Computer Programming Institute of Omaha, (Div. of ECPI, Inc.), 305 S. 17th St., Omaha, Nebr. 68102 / 402-345-1300 / *C 67
 Resident and home study courses in data processing and computer programming using IBM equipment. Consulting service and contract programming / Sv Co / S 35 / E 65
- Electronic Computer Programming Institute of West-Rockl., (Div. of ECPI, Inc.), 235 Mamaroneck Ave., White Plains, N.Y. 10605 / 914-949-3002 / *C 67
 Vocational training in data processing and computer programming / Sv Co / S 15 / E 65
- Electronic Data Processing, Inc., 1st National Bank Bldg., Ft. Lauderdale, Fla. 33300 / 305-523-8531 / *C 67
 E.D.P. services and programming / Sv Ti / S 26 / E 60
- Electronic Development Corp., 423 W. Broadway, Boston, Mass. 02127 / 617-268-9696 / *C 67
 DC, AC voltage calibrators; analog/digital converters (voltage digitizers); data acquisition systems / Eq / S 20 / E 58
- Electronic Engineering Co. of Calif., 1601 E. Chestnut Ave., Santa Ana, Cal. 92702 / 714-547-5501 / *C 67
 Timing, data processing, electro-mechanical products; format control buffer and data recording systems / S 300 / E 47
- Electronic Management, Computerology Corp., 6900 Wisconsin Ave., Washington, D.C. 20015 / 301-0L6-0540 / *C 67
 Consultants in military and civilian functionally encompassing systems / S 8 / E 64
- Electronic Memories, Inc., 12621 Chadron Ave., Hawthorne, Cal. 90250 / 213-772-5201 / *C 67
 Memory cores, stacks and systems for industrial, commercial and military/aerospace uses / Eq / S 1500 / E 62
- Electronic Modules Corp., 1949 Dr., Timonium, Md. 21093 / 301-252-2900 / *C 67
 Special purpose digital control systems, P.C.M. demultiplexing, scanner systems, sequencer systems, digital logic modules, integrated circuit logic cards, temperature controllers, A.C. switches / S 170 / E 61
- Electronic Processors Inc., 2101 Magnolia Ave., Birmingham, Ala. 35205 / 205-322-2551 / *C 67
 Computer service bureau functions / Sv Ti Co / S 60 / E 61
- Electronic Tabulating Corp., 14925 Schaeffer Hwy., Detroit, Mich. 48227 / 313-272-1863 / *C 67
 Computer and data processing services / Sv / S 25 / E 51
- Electron Ohio Inc., 1278 W. 9th St., Cleveland, O. 44113 / 216-MA1-5377 / *C 67
 Data collection systems; card and badge readers; piece counters; production recorder; magnetic drums / Eq / S 20 / E 61
- Electropac, Inc., (Subsid. of Computer Control Co., Inc.), Industrial Park, Peterborough, N.H. 03458 / 603-924-3821 / *C 65
 Contract manufacturer of electronic and electromechanical equipment (computer, aerospace, industrial, medical). Production or prototype construction wiring or circuit assembly to commercial or Mil specifications / S 220 / E 60
- Elgenco, Inc., 1550 Euclid St., Santa Monica, Cal. 90404 / 213-451-1635 / *C 67
 Electronic noise generators (function generators) / S ? / E 55
- El Paso Data Services, Inc., 616 E. Yandell Dr., El Paso, Tex. 79902 / 915-533-1313 / *C 67
 Key punch overload and training; data processing courses; systems consulting; file conversions / Sv Co / S 6 / E 65
- El-Rad Manufacturing Co., (Div. of Sherwood Electronic Labs), 4300 N. California Ave., Chicago, Ill. 60618 / 312-478-7300 / *C 67
 Delay lines and pulse transformers; other special coils / S 250 / E 44
- Emtech Research Products Corp., 12 Potter Ave., New Rochelle, N.Y. 10801 / 914-235-7500 / *C 67
 Manufacturers of computer interfaces for instrumentation; peripheral devices for small digital computers; special small scale data processing systems; and distributors of small digital computers / Eq / S 15 / E 63
- Encoder Div., Litton Precision Products, Inc., 7942 Woodley Ave., Van Nuys, Cal. 91406 / 213-781-2111 / *C 66
 Digital shaft encoders of the magnetic, optical and contact types. Output codes include self-decoded, binary, BCD, gray and V-Scan binary / S 175 / E 63
- Engineered Electronics Co., 1441 E. Chestnut Ave., Santa Ana, Cal. 92702 / 714-547-5651 / *C 67
 Digital logic cards, modules, integrated circuit logic cards, custom systems, custom packaging and welding, rotary thumbwheel switches / Eq Sv / S 200 / E 54
- English Electric Computers Ltd., (Div. of English Electric Co., Ltd.), Kidsgrove, Stoke-on-Trent, Staffordshire, England / Kidsgrove 3511 / *C 67
 Data processing systems and support services, training, time-hire / Eq Sv Co / S 5000+ / E 63
- Ennis Business Forms, Inc., (Subdivision of Ennis Business Forms, Inc.), P.O. Box 217 (Sherwood Field), Paso Robles, Cal. 93446 / 805-238-1144 / *C 67
 Tabulating cards, continuous carbon interleaved forms / S 1200 / E 09
- Kurt Enslin, 42 East Ave., Rochester, N.Y. 14604 / 716-232-5016 / *C 67
 Programming of special systems, multivariate statistics application, perceptron simulation, system engineering including data acquisition equipment, consultation on acquisition of computers particularly for foreign application, etc. / Sv Ti Co / S 4 / E 62
- Entelek, Inc., 42 Pleasant St., Newburyport, Mass. 01950 / 617-465-3000 / *C 66
 Key punch performance aids, programmed instruction in computer-based management, computer-assisted instruction / S 10 / E 61
- E.P.G. Computer Services, Inc., 369 Lexington Ave., New York, N.Y. 10017 / 212-682-5255 / *C 67
 Consulting, contract systems and programming; training of client personnel in systems and programming / Sv Co / S 20 / E 66
- Epsco, Inc., 411 Providence Hwy., Westwood, Mass. 02090 / 617-329-1400 / *C 65
 Computer components and equipment; special purpose computers, monitoring systems, computer linkages and format recorders, 1 and 5 megacycle digital circuit cards, wide-board amplifier series, portable data gathering systems, high speed A/D converters, volt-meters, reference sources. Pulse code modulation air and ground telemetry systems / S 275 / E 54
- Erdo & Morgan Inc., 111 Fourth Ave., New York, N.Y. 10003 / 212-A14-6970 / *C 67
 Market research studies, including pre-computer cleaning, systems, key-punching and EAM tabulations / Sv / S 40 / E 47
- ESS GEE, Inc., 1 Holland Ave., White Plains, N.Y. 10603 / 914-WH6-1200 / *C 65
 Airborne data processing equipment and instrumentation. Instrumentation and recording equipment for operation into computers, A/D converters, and computer interconnection components. Ground data handling systems / S 75 / E 59
- Evershed & Vignoles Ltd., Acton Lane Works, Chiswick, London W. 4, England / Chiswick 3670 / *C 65
 Special purpose analog computers data loggers, industrial telemetry, process control, servo-system components / S 2300 / E 1895
- Exact Electronics, 455 S.E. 2nd St., Hillsboro, Ore. 97123 / 503-648-6661 / *C 67
 Electronic function generators / S 40 / E 57
- Executone, Inc., 47-37 Austell Place, Long Island City, N.Y. 11101 / 212-EX2-4800 / *C 66
 Electronic voice communication, sound, signalling and pocket page systems / S 450 / E 37
- E-Z Sort Systems, Ltd., 45 Second St., San Francisco, Cal. 94105 / 415-GA1-8005 / *C 65
 Edge-punched cards for filing and sorting data. Special cards for correlation of facts. Control systems for a number of electronic computers. Teaching machines, program scheduling / S 186 / E 35

F

- Fabri-Tek, Inc., 5901 S. County Rd. 18, Minneapolis, Minn. 55436 / 612-935-8811 / *C 67
 Cores, planes, and stacks for ferrite memories; coincident current core memory systems (3D and 2 1/2D); thinfilm memory systems; digital educational computers; paper tape punches and readers; bio-medical and nuclear physics research instruments / Co / S 2000 / E 57
- Facit-Odhner Inc., a subsidiary of Atvidabergs Industries of Sweden, 222 East 44 St., New York, N.Y. 10017 / 212-867-7171 / *C 65
 Sale of the Facit high-speed tape reader, tape punch and tape duplicator / S 10,000 / E 22
- Fairchild Controls, (Div. of Fairchild Camera and Instrument Corp.), 225 Park Ave., Hicksville, L.I., N.Y. 11802 / 516-WEB-5600 / *C 65
 Especially for computing and data processing industries — a complete new line of single turn, multi-turn potentiometers and trimmers (FAIRCON)

Roster of Organizations

- / S 500 / E 45
Fairchild Semiconductor, (Div. of Fairchild Camera & Instrument Corp.), 313 Fairchild Dr., Mountain View, Cal. 94042 / 415-962-5011 / *C 67
Ferrite memory cores, microcircuit memory systems, silicon Planar integrated circuits, transistors, diodes, photo arrays, microwave signal sources / Eq / S 13,000 / E 57
Fairchild Space & Defense Systems, (Div. of Fairchild Camera & Instrument Corp.), 300 Robbins Lane, Syosset, N.Y. 11791 / 516-931-4500 / *C 67
A-D/D-A conversion systems; avionics, shipboard and commercial signal conditioning equipment / Eq / S 2000 / E 20
F & F Enterprises, Inc., 2035 Wabansia Ave., Chicago, Ill. 60647 / 312-489-5500 / *C 67
Produce electromechanical switches for electronic equipment / S 75 / E 54
Farrington Electronics Inc., (Div. of Farrington Manufacturing Co.), 6707 Electronics Dr., Springfield, Va. 22151 / 703-354-5000 / *C 67
Optical character recognition equipment; scanners / Eq Sv Le / S 500+ / E 59
Fedder Data Centers, Inc., 307 S. Sharp St., Baltimore, Md. 21201 / 301-685-6773 / *C 67
Services in optical scanning, systems engineering, computer programming and processing, data conversion, operations research and facilities management; also, computer and peripheral equipment leasing / Sv Le / S 50 / E 57
Fedder Data Centers of California, Inc., (Div. of Fedder Data Centers, Inc.), 330 N. Laurel Ave., Los Angeles, Cal. 90048 / 213-938-2431 / *C 67
Service bureau for accountants / Sv Ti Co / S 65 / E 59
Federal Business Products, 184 Kent Ave., Brooklyn, N.Y. 11212 / 212-ST2-0300 / *C 66
Manufacturers of business forms and systems / S 165 / E 26
Felsenthal Instruments Co., 7450 W. Wilson Ave., Chicago, Ill. 60656 / 312-867-7450 / *C 67
Special purpose hand held computers; desk calculators; edge and back lighted panels with knobs for same; plotters and plotting boards / S 149 / E 99
Ferranti Electric, Inc., East Bethpage Rd., Plainview, N.Y. 11803 / 516-293-8383 / *C 66
Agent for Ferranti Ltd., Hollinwood, Lancashire, Eng. Argus 400 and 500 general purpose and process control computers, silicon integrated circuits, moire fringe measuring systems, viscometers, magnetic tape bulk erasers, high resolution CRT display tubes / S 16,000 / E 1896
Ferranti Ltd., Manchester, Lancashire & Brackwell, Berkshire, England / Fails-worth 2071 or Bracknell 2020 / *C 65
Real time digital computers and data handling systems / S over 5000 / E 1882
Ferranti-Packard Electric Ltd., Industry St., Toronto 15, Ontario, Canada / 416-762-3661 / *C 66
FP6000 general purpose computer, special purpose computer systems (reservations systems, process control), photo-electric tape readers, magnetic flip disc displays, special digital systems design and manufacture / S 1100 (company); 220 (Electronics) / E 12 (company); 49 (Electronics)
Ferroxcube Corp., (Div. of Consolidated Electronics), P.O. Box 359, Saugerties, N.Y. 12477 / 201-246-2811 / *C 67
Ferrite core memory components and systems, magnetic tape recording heads / S 1200 / E 49
Fischer & Porter Co., County Line Rd., Warminster, Pa. 18974 / 215-OS5-6000 / *C 65
Industrial and military data acquisition equipment. Digital computer process control. Multiple pressure measuring systems. Vehicular traffic data records and systems. Meteorological data recorders and systems. Electronic integrator / S 15,000 / E 37
Fisher-Stevens Inc., 120 Brighton Rd., Clifton, N.J. 07012 / 201-471-4000 / *C 67
Computer consulting, systems design, programming and operational services for business and government applications, marketing informational systems, operations research projects; educational division (Computer Science Institute) offers IBM 360 programming courses; also, direct mail services are provided / Sv Ti Co / S 250 / E 18
Flight Research Div., (Giannini Scientific Corp.), P.O. Box 1-F, Richmond, Va. 23201 / 703-737-4163 / *C 67
Cameras - high resolution single frame recorders used in microfilm industry or computer display read-out devices; encoders - Mem-o-tizer, used for converting analog rotary input data into electrical digital output / S 750 / E 48
Floating Floors Inc., (Subsidiary of National Lead Co.), 111 Broadway, New York, N.Y. 10006 / 212-732-9400, Ext. 585 / *C 67
Free access raised floor system for computer rooms and other applications; precision made die cast aluminum panel in 18 1/4" or 24" modules, completely interchangeable and supported by a die cast aluminum pedestal assembly; under floor cavity can be used for cables, wires, etc., or as a plenum for air conditioning / S ? / E ?
Dr. Ivan Flores, 931 President St., Brooklyn, N.Y. 11215 / 212-789-1312 / *C 67
Consulting: systems lay out; hardware and software design; feasibility investigation; proposal management; education course outline; preparation and presentation; research and development of digital systems / Sv / S 5 / E 60
Florida Technical College of Orlando, (Div. of American Futures, Inc.), 115 West Central Ave., Orlando, Fla. 32801 / 305-425-8651 / *C 67
Complete data processing and computer programming course which includes the following equipment: 082, 083, 084 sorters; 548, 552 interpreters; 514, 519 reproducers; 085, 087, collators; 407 accounting machine; Burroughs 200 computer systems; IBM 1401 systems; data processing methods and procedures with practical applications to business; Honeywell H-200 systems; H-200 COBOL language / Co / S 26 / E 62
FORMCO, 3621 McKinney Ave., P.O. Box 64816, Dallas, Tex. 75206 / 214-LA8-8942 / *C 67
Continuous IBM cards, custom forms, and labels; tape reel labels; binders; stock paper; custom stock paper; forms system design; FORMSCARD[®]; continu-
ous MICR checks, continuous envelopes / S 5 / E 61
Forms Inc., (Div. of Mosler Safe Co.), Easton Rd. & Pa. Tpke., Willow Grove, Pa. 19090 / 215-LI8-6300 / *C 67
FORMSCARDS (continuous tabulating card without the medial strip between cards) and all types of continuous line hole punched forms for use on computers / S 100+ / E 46
Fort Lauderdale Technical College, 201 West Sunrise Blvd., Ft. Lauderdale, Fla. 33311 / 305-523-3454 / *C 67
Computing, programming and systems courses. Facilities include IBM 360/20 system; IBM unit record equipment / Sv Co / S 24 / E 66
The Foxboro Co., 38 Neponset Ave., Foxboro, Mass. 02035 / 617-543-9750 / *C 65
Process computer systems, data logging and alarming computers, alarm scanners, computer set point stations / S 3000 / E 03
Franklin Electronics, Inc., (Div. of Anelox Corp.), East 4th St., Bridgeport, Pa. 19405 / 215-272-4800 / *C 67
High-speed digital printers, alphanumeric print-out, 32 columns line capacity / S 125 / E 52
Friden, Inc., (Div. of The Singer Co.), 2350 Washington Ave., San Leandro, Cal. 94577 / 415-357-6800 / *C 67
Data processing, data collecting and data communications systems including: FLEXOWRITER[®] automatic writing machine; COLLECTADATA[®] data collection network; COMPUTYPER[®] electronic billing/accounting machine; ADD-PUNCH[®] adding machine/tape punch; auxiliary equipment (readers, punches, tab card punch control); photoelectric keyboards; calculators (rotary and electronic); adding machines (10-key and special type style for optical reader); supplies (tape, cards, ribbons); and courses for customers / Eq Co / S 12,000 / E 34
Fulfillment Consultants Corp., 1937 Williamsbridge Rd., Bronx, N.Y. 10461 / 212-792-8155 / *C 67
Service bureau offering 360/20, various types of unit record equipment / Eq Sv Ti / S 12 / E 64

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- General Atronic Corp., 1200 E. Mermaid Lane, Philadelphia, Pa. 19118 / 215-248-3700 / *C 66
Memory systems, electronic; automatic counting & sorting systems; photo-electric readers; oscilloscopes & cameras for recording data / S 250 / E 56
General Computers Inc., 5990 W. Pico Blvd., Los Angeles, Cal. 90035 / 213-939-7687 / *C 67
Card programmed diode function generators / S 20 / E 47
General Devices, Inc., Box 253, Princeton, N.J. 08540 / 609-924-2500 / *C 66
Digital data acquisition systems, tape to tape translators, computer input devices, telemetering systems / S 75 / E 53
General Dynamics/Electronics, 3302 Pacific Hwy., P.O. Box 127, San Diego, Cal. 92112 / 714-298-4641 / *C 65
Computer readout devices, high speed electronic printers, high speed communications printers, microfilm recorders, plug-in and potted circuits, digital devices for display of computer information, input and visual output devices (the CHARACTERON[®])

Roster of Organizations

- shaped beam tube), facsimile systems / S 1200 / E 55
- General Dynamics/Electronics, 1400 North Goodman St., Rochester, N.Y. 14601 / 716-FI2-8000 / *C 65
- Digital computers, process control computers, statistical analog computers, data transmission systems, data logging systems / S 4000 / E 1894
- General Electric Co., Electronic Components Sales Operation, 1 River Rd., Schenectady, N.Y. 12305 / 518-FR4-2211 / *C 66
- Sells electronic components and devices to electric and electronic product manufacturers / S 250,000 / E 1892
- General Electric Co., Information Systems Marketing Operation (ISMO), 13430 N. Black Canyon Hwy., Phoenix, Ariz. 85029 / 602-941-2900 / *C 67
- GE-115 small computer systems, GE-200 Line and GE-400 Line medium computer systems, GE-600 Line large computer systems, DATANET[®]-30 data communications systems, DATANET[®]-760 CRT remote terminal systems, computer supplies and accessories. Information processing time sharing services via the GE Information Systems Dept. (hdq., Bethesda, Md.) / Eq Sv Ti Co Le / S 8000 / E 56
- General Electric Co., Laminated Products Dept., Coshocton, O. 43812 / 614-MA2-5310 / *C 65
- Flooring for free-access floors / S 700 / E ?
- General Electric Co., Printer-Reader Bus Sect., 511 N. Broad St., Philadelphia, Pa. 19123 / 215-WA5-4343 / *C 67
- Photoelectric punched and printed tape readers and reelers, electrostatic printer and recorders, character generators, communication terminal systems / Eq / S 140 / E 66
- General Electric Co., Process Computer Bus Sect., 2255 W. Desert Cove Rd., Phoenix, Ariz. 85029 / 602-943-2341 / *C 67
- On-line, real-time process computer control systems / Eq Sv Co / S 1000 / E 61
- The General Fireproofing Co., E. Dennick Ave., Youngstown, O. 44501 / 216-746-7271 / *C 65
- Data processing accessory equipment / S 2600 / E 02
- General Instrument Corp., Magne-Head/Systematics Div., 13040 S. Cerise Ave., Hawthorne, Cal. 90250 / 213-679-3377 / *C 66
- Tape to card converters, card to tape converters, data communication equipment / S 300 / E 55
- General Instrument Corp., Radio Receptor Div., 100 Andrews Rd., Hicksville, N.Y. 11802 / 516-681-4300 / *C 66
- Custom designed general support equipment, automated test equipment, special purpose computer components and computer systems, digital systems using small-medium general purpose computers / S 600 / E 1922
- General Kinetics Inc., 2611 Shirlington Rd., Arlington, Va. 22206 / 703-671-4500 / *C 67
- Magnetic tape testers, cleaners, winders and erasers / Eq Sv / S 197 / E 55
- General Precision, Inc., GPL Div., Bedford Rd., Pleasantville, N.Y. 10570 / 914-769-5000 / *C 67
- Information retrieval and annotation systems, character vector generators, analog to digital capacitive reset integrators, hard copy printers, microtelevisors / S 1100 / E 46
- General Precision, Inc., Kearfoot Products Div., 1150 McBride Ave., Little Falls, N.J. 07424 / 201-256-4000 / *C 66
- Analog, digital, and hybrid computers. Programmed measurement and checkout equipment. Digital data communication, high-speed logic, and range instrumentation systems. Data acquisition and recording systems. Analog to digital converters. Servomechanisms and systems. Digital electro-luminescent solid state readout devices (alpha-numeric). Resolvers, transolvers, synchros, servo motors, motor tach generators, servo amplifiers, QR circuits, dc power supplies, choppers, mag-amps, signal comparators and sensors, and summing-isolation amplifiers / S 6000 / E 17
- General Precision, Inc., Librascope Group, 808 Western Ave., Glendale, Cal. 91201 / 213-244-6541 / *C 67
- Digital computers, disc memories, woven plated wire memories, encoders, integrators, flow computers, automatic diagnostics, technical management services, high precisions optical systems and instrumentation / Eq Co Le / S 2000+ / E 37
- General Precision, Inc., Link Group, Colesville Rd., Binghamton, N.Y. 13902 / 607-772-3100 / *C 66
- Aircraft and missile simulators, video and photographic storage/retrieval and processing systems, space information systems, range timing and instrumentation systems, graphic data conversion systems, special purpose analog/digital computing systems and ancillary equipments, computer simulation, and scientific programming services / S 4000 / E 35
- General Procedures Corp., 150 E. 52nd St., New York, N.Y. 10022 / 212-751-1991 / *C 67
- Computer programming, system analysis, production service on 1401, 1410, H200, 360/30 / Sv Ti / S 12 / E 63
- General Radio Co., 22 Baker Ave., West Concord, Mass. 01781 / 617-369-4400 / *C 67
- Electronic test and measuring equipment / S 1200 / E 15
- Genisco Technology Corp., Systems Div., 18435 Susana Rd., Compton, Cal. 90221 / 213-774-1850 / *C 66
- Tape recording and reproducing systems; telemetry checkout equipment / S 450 / E 47
- Geo Space Corp., Computer Div., 3009 S. Post Oak Rd., Houston, Tex. 77027 / 713-NA2-4570 / *C 67
- Digital CRT plotters (on-line), digital seismic input systems, analog computers, hybrid linkage interfaces, digital computer accessories and I/O channel test equipment / Sv / S 200 / E 66
- Geo Space Corp., (Div. of Westec Corp.), 5803 Glenmont, Houston, Tex. 77036 / 713-666-1611 / *C 67
- Analog and hybrid computers; hybrid linkage, digital CRT plotters / Eq / S 600 / E ?
- The Geotechnical Corp., 3401 Shiloh Rd., Garland, Tex. 75040 / 214-278-8102 / *C 65
- Slow-speed, low-frequency analog magnetic tape recorder/reproducers / S 650 / E 36
- The Gerber Scientific Instrument Co., 83 Gerber Rd., South Windsor, Conn. (P.O. Box 305, Hartford, Conn. 06074) / 203-644-1551 / *C 66
- Plotters (plotting boards), automatic drafting machines, graphic to digital converters, digital to graphic converters, data reduction equipment, scanners / S 275 / E 48
- Gianni Controls Corp. — name changed to Conrac Corp., which see
- Global Tabulating Equipment Corp., (Div. of International Typewriter), 1229 W. Washington Blvd., Chicago, Ill. 60607 / 312-733-1200 / *C 67
- Used IBM equipment and parts, leasing / Eq Le / S 5 / E 63
- Globe Exploration Co., (Div. of Shell Oil Co.), P.O. Box 4547, Midland, Tex. 79701 / 915-0X4-1651 / *C 67
- Commercial computing devices / Sv / S 240 / E 54
- L. Goldstein & Son, Inc., 177 Milk St., Boston, Mass. 02109 / 617-LI2-9220 / *C 67
- Buy, sell used tabulating and DP machinery, accessory equipment / Eq / S 4 / E 63
- GPS Instrument Co., Inc., 188 Needham St., Newton, Mass. 02164 / 617-969-9405 / *C 67
- Wide band, multi-timescale analog and hybrid computer systems; statistical analog hybrid equipment; electronic multiplier, dividers, switches, comparators, amplifiers, statistical distribution analyzers; programming and use of analog computer center; research and development of analog computational techniques and devices / Eq Sv / S 40 / E 51
- Graham Magnetics Inc., Graham, Tex. 76046 / 817-549-3211 / *C 67
- Manufacture magnetic computer tape / S ? / E ?
- Graham White Personnel Agency, Inc., 181 Broadway, New York, N.Y. 10007 / 212-349-1280 / *C 67
- Consulting services / Sv / S 25 / E 62
- Graphic Controls Corp., 189 Van Rensselaer St., Buffalo, N.Y. 14210 / 716-857-7500 / *C 67
- Time sharing computing services; custom-stock continuous forms / Ti / S 750 / E 46
- H. J. Gruy & Associates, Inc., 2501 Cedar Springs Rd., Dallas, Tex. 75201 / 214-RI2-1421 / *C 67
- Computing and data processing services; facilities include IBM 360/30, 65K byte; 1403 printer and associated equipment / Sv / S 80 / E 51
- The GYREX Corp., 3003 Pennsylvania Ave., Santa Monica, Cal. 90404 / 213-EX3-0462 / *C 65
- Computer input systems (high speed data processors); time and frequency standards and control systems; pulse generators and time markers / S 30-35 / E 56

H

- Haddonfield Research & Mfg. Co., 121 Gill Rd., Haddonfield, N.J. 08033 / 609-429-9218 / *C 66
- Production of ferrite products used in the memory area, consultation in ferrite magnetics, manufacture of small-scale computer systems marketed under the name "Computator" / S 10 / E 62
- Hagan Controls Corp., 250 Mt. Lebanon Blvd., Pittsburgh, Pa. 15228 / 415-563-6120 / *C 66
- Data loggers, alarm indicating monitors, recorders / S 521 / E 18
- Halbrecht Assoc., Inc., 7315 Wisconsin Ave., Washington, D.C. 20014 / 301-656-9170 / *C 67

Roster of Organizations

- Referral and placement of personnel in fields of electronic data processing, management information systems, operations research, and the management sciences at all levels, coast to coast / S 10 / E 57
- Hallmarkets International, 98-41 64th Rd., P.O. Box 252, Forest Hills, N.Y. 11375 / 212-275-3725 / *C 67
Control panels and wires, manual portable key-punch machine, paper tape racks, bursters, inked ribbons, magnetic tape ledgers, punch cards, aluminum business and tab card holders, manual and electric paper tape winders. (All of firm's equipment is imported from Europe sold in U.S.A.; firm exports world-wide U.S. made data processing supplies.) / S 12 / E 63
- Hamilton, Grayden & Flemmer, Inc., Hamilton Rd., Hopkins, Minn. 55343 / 612-941-1120 / *C 67
Delay lines, magnetic discs and drums, keyboards, indicator lights, servo-mechanisms / S 6 / E 55
- Hammond Manufacturing Co. Ltd., 394 Edinburgh Rd. N., Guelph, Ontario, Canada / 519-822-2960 / *C 66
Transformer and sheet metal components of all types for electronic and electrical computer sub and main systems / S 350 / E 27
- Philip Hankins & Co., Inc., 800 Massachusetts Ave., Arlington, Mass. 02174 / 617-648-8550 / *C 67
Consulting and programming for scientific and business applications. Also, service bureau operation on IBM system 360 (65K and 16K) computers; business and accounting reports and a specialized capacity for retail store operations / Sv / S 80 / E 59
- Philip Hano Co., Inc., 85 Sargeant St., Holyoke, Mass. 01040 / 413-533-7141 / *C 67
Continuous forms marginally punched including custom, standard, stock tab and tab imprints / S ? / E 1888
- Hanover & Selwyn Co., Cambridge Savings Bank Bldg., 1374 Massachusetts Ave., Cambridge, Mass. 02138 / 617-UN4-7347 / *C 67
Applications development for time sharing, telemetry and test data processing / Sv / S 2 / E 65
- Hardy Scales Co., (Div. of Utah Systems Div.), 155 31st St., Ogden, Utah 84401 / 801-399-5825 / *C 67
Electronic weighing systems which interphase with computers; floor, bench, in-motion, and rail scales; automatic batch mix system, in-motion carton dimensioning and cube calculations / S 55 / E 06
- Jack M. Harrison & Assoc., 57 E. Oakland Ave., Salt Lake City, Utah 84115 / 801-485-8644 / *C 67
Systems consultants, contract programming, computing service, data processing forms-systems, bureau services / Sv / S 12 / E 64
- Hayden Book Co., Inc., (Subsid. of Hayden Publishing Co., Inc.), 116 W. 14th St., New York, N.Y. 10011 / 212-675-5020 / *C 67
Titles on computers, programming and related sciences / Co / S 21 / E 63
- The A. W. Hayden Co., 232 N. Elm St., Waterbury, Conn. 06720 / 203-756-4481 / *C 67
Timing and control devices, stepper switches, mechanical counters / S 600 / E 46
- Heath Co., Benton Harbor, Mich. 49022 / 616-YU3-3961 / *C 65
Educational analog computer / S 575 / E 46
- Heliodyne Corp., 7810 Burnet Ave., Van Nuys, Cal. 91405 / 213-787-7300 / *C 66
Scientific and business data processing; feasibility studies; management sciences / S 100 / E 62
- Herner & Co., 2431 K St., N.W., Washington, D.C. 20037 / 202-965-3100 / *C 67
Design and operation of information retrieval systems, library automation projects, SDI systems, bibliographic services and surveys / Sv Co / S 100 / E 55
- Hewlett-Packard, 1501 Page Mill Rd., Palo Alto, Cal. 94304 / 415-326-7000 / *C 67
Digital computer with interfaces for working with electronic measuring instruments; digital tape recorders. Also test instruments: oscilloscopes, pulse generators, counters, signal and function generators, digital, analog and vector voltmeters, vector impedance meters, wave and spectrum analyzers, microwave instruments, time and voltage standards, power supplies, amplifiers, analog tape; X-Y and continuous-chart recorders; digital data acquisition systems / Eq / S 11,000 / E 39
- Hewlett-Packard Co., Mountain View Div., 690 Middlefield Rd., Mountain View, Cal. 94040 / 415-968-7291 / *C 67
Digital and analog magnetic tape units / Eq / S 200 / E 61
- The Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, O. 44108 / 216-541-8060 / *C 67
Punched card readers, electronic test equipment / S 700 / E 14
- Hoffman Electronics Corp., Semiconductor Div., Hoffman Electronic Park, El Monte, Cal. 91734 / 213-686-0123 / *C 65
Photoelectric tape and card readers; semi-conductor devices including diodes, regulators, temperature compensated reference devices / S 429 / E 41
- Hollander Assoc., P.O. Box 2276, Fullerton, Cal. 92633 / 714-525-8777 / *C 67
Applied research, design and consultation; system optimization studies for computer architecture and applications including communications switching, command and control, simulation, and management systems. Work is based on a proprietary technique for optimum decision making / Sv / S 16 / E 61
- Holley Computer Products Co., (Subsid. of Control Data Corp.), 1480 N. Rochester Rd., Rochester, Mich. 48063 / 313-651-8811 / *C 66
High and medium speed digital drum printers / S 200 / E 61
- Honeywell Inc., Computer Control Div., Old Connecticut Path, Framingham, Mass. 01701 / 617-879-2600 / *C 67
Computers, core memories, memory test equipment, logic modules / Eq / S 2000 / E 53
- Honeywell Inc., Denver Div., 4800 E. Dry Creek Rd., Denver, Colo. 80217 / 303-771-4700 / *C 65
Incremental digital magnetic tape recorders / S 1000 / E 1886
- Honeywell Inc., Electronic Data Processing Div., 60 Walnut St., Wellesley Hills, Mass. 02181 / 617-235-7450 / *C 67
General purpose digital computers for business, industry and science; complete line of peripheral equipment including magnetic tape units, punched-card equipment, audio response systems, all-purpose remote terminals / Eq / S 11,000 / E 55
- Honeywell Inc., Industrial Div., 1100 Virginia Dr., Fort Washington, Pa. 19034 / 215-643-1300 / *C 66
General purpose digital computers for on-line real-time applications, special purpose analog computers, and programming and maintenance of these systems / S about 3500 / E 1863
- Houston Fearless Corp., 11801 W. Olympic Blvd., Los Angeles, Cal. 90064 / 213-272-4331 / *C 67
Film card reader and film card camera processor / Eq / S 500+ / E 43
- Houston OMNIGRAPHIC Corp., (Div. of Houston Instrument Corp.), 4950 Terminal Ave., Bellaire, Tex. 77401 / 713-MO7-7403 / *C 67
Digital plotting systems / S 75 / E 58
- Howard's Automatic Devices, 2270 Atlantic Blvd., Jacksonville, Fla. 32207 / 904-398-9515 / *C 67
Paper tape and supplies; Dura Mach 10, 1041, and other punched tape equipment. ADDO-X & Odhner adding machine and posting machines with punched tape output. Tabulating and computer accessory and storage equipment; floating computer floors; Dolin mobile storage of all types; modular and shelf filing equipment and supplies / S 1 / E 56
- HRB-Singer, Inc., Box 60, Science Park, State College, Pa. 16801 / 815-238-4311 / *C 66
Services and special equipment in the areas of operations research, system analysis, and system measurement and evaluation / S 1250 / E 46
- Hughes Aircraft Co., Centinela Ave. & Teale St., Culver City, Cal. 90230 / 213-391-0711 / *C 67
Aerospace and surface-based computers; automatic checkout equipment; aerospace signal processing display equipment (sensors, display and control systems, human factors engineering); data processing and presentation equipment; general purpose attack computer; aircraft on-board data management equipment; high data-rate tape recording; magnetic drum memories / S 32,000 / E 35
- Hume Associates, Inc., 122 E. 42nd St., New York, N.Y. 10017 / 212-986-2609 / *C 67
Consulting service / Sv Co / S 4 / E 58

I

- IBM Corp., Data Processing Div., 112 E. Post Rd., White Plains, N.Y. 10601 / 914-WH9-1900 / *C 65
Complete line of data processing systems and equipment, including the IBM System/360, the IBM RAMAC 305 (model 2), 1401-G, 1401, 1440, 1460, 1410, 1620, 1620 (model 2), 7010, 7040, 7044, 7070, 7072, 7074, 7080, 7090, 7094, 7094II, data processing systems; 1420 bank transit system; 1240 bank data processing system; 1062 teller terminal; 1230 optical mark scoring reader; 1231 optical mark page reader; 1282 optical reader card punch; 1418 optical character reader; random access disk and drum storage units; 7770 audio response unit; 1070 process communication system, 2321 data cell drive; 1015 inquiry display terminal; 2250 display console; 2671 paper tape reader; 1710 control system; magnetic

Roster of Organizations

- character inscribing and sensing equipment; airline reservations systems; Tele-processing devices and systems including data collection and transmission equipment; Hypertape; mark sensing equipment; and a full line of punched card equipment, including the low-cost Series 50 line. Also printers, Micro-processing, punched cards, magnetic tape, magnetically encoded paper checks and other supplies used with data processing equipment / S 116,000 / E 11
- IBM Corp., Federal Systems Div., 326 E. Montgomery Ave., Rockville, Md. 20852 / 301-GA4-6700; 301-HA7-4110 / *C 65
Electronic information handling and control systems for U.S. government space, defense, and civil programs. Systems management, systems development, research, engineering, production, installation, and field support / S ? / E 55
- IBM Corp., Neighborhood Rd., Kingston, N.Y. 12401 / 914-383-0123 / *C 67
Electronic computers / S 5000 / E ?
- IB Personnel Service Agency, Inc., 261 Broadway, New York, N.Y. 10007 / 212-COT-3475 / *C 67
Employment agency specializing in data processing personnel, including programmers, computer systems, analysts, and operations managers / S 5 / E 54
- I.D.R. Co., Inc., 325 Chestnut St., Philadelphia, Pa. 19106 / 215-WA2-4200 / *C 67
Service bureau for publishers / Sv / S 67 / E 61
- Image Instruments, Inc., 2300 Washington St., Newton Lower Falls, Mass. 02162 / 617-969-8440 / *C 66
Storage tube systems for man-machine interface, off-line processing, temporary storage or multiple display purposes in conjunction with computer / S 13 / E 58
- IMC Magnetics Corp., Western Div., 6058 Walker Ave., Maywood, Cal. 90270 / 213-LU3-4785 / *C 65
Linear and rotary solenoids, step-servo motors, synchros, resolvers, digital to shaft angle converters / S 150 / E 46
- Indel Inc., 6749 East 12 St., Tulsa, Okla. 74112 / 918-TE5-9568 / *C 67
Amper computer tape, tape rehabilitation, cleaning and recertifying. Data processing equipment and supplies / S 30-40 / E 56
- Indiana General Corp., Electronics Div., Crows Mill Rd., Keasbey, N.J. 08832 / 201-826-5100 / *C 67
Ferrites: Linear and square loop, memory cores, memory planes, memory stacks, pulse transformers and recording heads / S 580 / E 02
- Inductor Engineering, Inc., 117 Schley Ave., Lewes, Del. 19958 / 302-645-6251 / *C 67
Toroidal transformers; electronic, telemetry filters; magnetic amplifiers / S 30 / E 56
- Industrial Data Processing, Inc., (Div. of Control Industries, Inc.), 4114 Telegraph Rd., Bloomfield Hills, Mich. 48013 / 313-647-1000 / *C 67
Computing and consulting services / Sv / S 10 / E 65
- Industrial Electronic Engineers, Inc., 7720 Lemona Ave., Van Nuys, Cal. 91405 / 213-787-0311 / *C 66
Rear-projection readout and display devices and systems; binary to decimal driver/decoders; readout and display accessories; illuminated switch status indicator; bina-view self-decoding readout / S 200 / E 46
- Industrial Formulations Corp., 30 Dupont St., Plainview, N.Y. 11803 / 516-681-1780 / *C 67
Anti-static cleaning preparation for use on all plastics, ceramics and bright metals / S 6 / E 66
- Industrial Nucleonics Corp., 650 Ackerman Rd., Columbus, O. 43202 / 614-267-6351 / *C 65
AccuRay industrial process measurement and automatic control systems, data reduction and readout systems for paper, plastics, metal and other industries / S 550 / E 50
- Industrial Products Group (Div. of Texas Instruments Inc.), 3609 Buffalo Speedway, Houston, Tex. 77006 / 713-JA6-1411 / *C 67
Special purpose computers for digital seismic data processing, data communications systems, A-D, D-A converters and multiplexers; test instruments for circuit testing and design work; semiconductor test systems / Eq / S 1000+ / E 53
- Informatics Inc., (Div. of Data Products Corp.), 5430 Van Nuys Blvd., Sherman Oaks, Cal. 91401 / 213-783-7500 / *C 67
Software development, programming services, systems engineering, information systems / Sv Co / S 340 / E 62
- Information Control Systems Inc., 327 Fourth Ave., Ann Arbor, Mich. 48108 / 313-761-1600 / *C 67
Computer programming and consulting services; specializing in process control, real time data acquisition systems, numerical control systems / Sv / S 30 / E 65
- Information Development Co., 1621 East 17th St., Santa Ana, Cal. 92701 / 714-547-8861 / *C 67
Consulting and software in real-time systems, compilers, time sharing systems, management information systems and applications programming / Ti Sv / S 70 / E 65
- Information Displays, Inc., 102 East Sandford Blvd., Mt. Vernon, N.Y. 10550 / 914-699-5515 / *C 67
Computer controlled cathode ray tube displays / Eq Le / S 50 / E 60
- Information Dynamics Corp., 80 Main St., Reading, Mass. 01867 / 617-944-2224 / *C 67
Data processing services for science, industry, and the professions; IBM System 360/30 and peripheral equipment on site (also a facility in Washington, D.C.) / Co Sv / S 38 / E 60
- Information for Industry, Inc., 1000 Connecticut Ave., N.W., Washington, D.C. 20036 / 202-296-4936 / *C 66
Sole owners of data base covering all U.S. chemically related patents issued since 1950 to date. Programs available for IBM, Burroughs and CDC equipment / S 6 / E 55
- Information International, Inc., 545 Technology Sq., Cambridge, Mass. 02139 / 617-868-9810 / *C 67
Programmable film readers/recorders, contract film reading, programming / Eq Sv / S 50 / E 62
- Information Management Associates, Inc., 4221 Lindell, St. Louis, Mo. 63108 / 314-JE5-2544 / *C 67
Consulting, systems design, programming, service bureau services / Sv / S 10 / E 65
- Information Management, Inc., (Div. of Wofac Corp.), 165 Bedford St., Burlington, Mass. 01803 / 617-272-1300 / *C 67
Review, appraisal, analysis, design and implementation of information handling systems for business, industry and government. Professional and technical services in the evaluation, extension and improvement of existing manual or automated operational and management systems / Sv Co / S 200+ / E 65
- Information Processing Inc., 520 Raleigh St., Orlando, Fla. 32805 / 305-422-4600 / *C 67
Computer consulting, programming and processing services; specializing in scientific and engineering applications / Sv / S 2 / E 64
- Information Processing Systems, Inc., 200 West 57th St., New York, N.Y. 10019 / 212-246-2267 / *C 67
Used electronic data processing systems; appraisals of systems value; leasing and lease consulting / Sv Le / S ? / E 63
- Information Research Associates, Inc., 3065 Rosecrans Pl., San Diego, Cal. 92110 / 714-224-3795 / *C 67
Operations research, systems analysis, scientific computer programming, communications engineering / Ti / S 20 / E 65
- Information Research Associates, Inc., 442 Marrett Rd., Lexington, Mass. 02173 / 617-861-0410 (0411) / *C 67
Research and development, consultation in information, mathematical and communications sciences; computer programming, numerical analysis, operations research and analysis; pattern recognition analysis, systems and devices; display analysis automata / Sv / S 13 / E 64
- Information Science Institute, 323 Third Ave., Pittsburgh, Pa. 15222 / 412-281-8083 / *C 67
Courses in computing, programming, and systems / Co / S ? / E 65
- Information Sciences Associates — name changed to Arthur S. Kranzley & Co. Inc., which see
- Information Sciences Division, Brown Engineering Co., Inc., 300 Sparkman Dr. N.W., Huntsville, Ala. 35805 / 205-532-1379 / *C 67
Machine time sales, business and scientific systems development. Equipment includes 360/30, 360/50, Philco optical scanner, Analex 3610 print station / Sv / S 200 / E 61
- Information Supplies Corp., 2411 Howard St., Evanston, Ill. 60202 / 312-BR3-3000 / *C 67
Manufacturers tabulating cards; other services offered include magnetic tape, continuous forms, tabulating ribbons, magnetic tape cleaners and certifiers, and tape rehabilitation / Sv / S 125 / E 57
- Information Systems Co., (Div. Lear Siegler Co.), 1111 Wilshire, Los Angeles, Cal. 90017 / 213-HU2-4633 / *C 67
Contract programming, business data processing, critical path scheduling, computer installation management, engineering consulting / Sv / S 130 / E 65
- Information Systems for Management, Inc., 323 3rd Ave., Pittsburgh, Pa. 19106 / 412-281-5460 / *C 67
Consulting services / Sv / S 15 / E 65
- Infotec, Inc., 80 Urban Ave., Westbury, N.Y. 11590 / 516-334-1624 / *C 67
Engineering: data communication via data phone, remote terminal devices, custom engineering. Complete programming service; specialize in graphics and integrated hardware systems / Eq Sv / S 35 / E 64
- Infotran Inc., 860 Fifth Ave., New York, N.Y. 10021 / 212-LE5-7724 / *C 67

Roster of Organizations

- Special purpose computers, data communications and control systems; planning, design and development of total information systems; new product development; educational services / Sv / S 6 / E 64
- Inftrec Corp., 80 Wall St., New York, N.Y. 10005 / 212-943-5228 / *C 67
Information research and engineering technology, contracting and consulting in information management systems research, analysis, evaluation, design and marketing / Sv Ti Co / S 12 / E 66
- Inland Computer Service, 3664 Market St., Riverside, Cal. 92501 / 714-684-0714 / *C 67
UNIVAC service bureau / Sv Ti / S 5 / E 66
- Innovation Consultants, Inc., 4 E. State St., Doylestown, Pa. 18901 / 215-F18-2324 / *C 67
Consulting services, especially, long range systems planning, and market and product development for advanced systems; management education; executive search / Sv Co / S 15 / E 66
- Input, Inc., 500 Old Elm Rd., Highland Park, Ill. 60035 / 312-433-4450 / *C 67
Data processing services. Large IBM keypunch facility, EAM equipment, Honeywell 5 tape 120 computer. Rent IBM keypunches to other customers / Eq Sv Ti / S 60 / E 66
- Institute for Computing Sciences, Preston Forest Tower, P.O. Box 30245, Dallas, Tex. 75230 / 214-AD1-1012 / *C 66
Educational programs for management; career training / S 15 / E 65
- Institute for Scientific Information, 325 Chestnut St., Philadelphia, Pa. 19106 / 215-WA3-3300 / *C 67
Offer complete data files of magnetic tapes of scientific information from all disciplines (considered largest commercially available). Also, ASCA, a selective dissemination service, covering approximately 6000 current scientific articles each week / Sv / S 150 / E 60
- Institute of Computer Management Inc., (Div. of Litton Industries), 2204 Walnut St., Philadelphia, Pa. 19103 / 215-L09-3220 / *C 67
Programming courses; equipment includes IBM 360/20, 8K; 1403 printer 2560 MFCM; 2501 reader; 83 sorter; 85 and 87 collator; 514 reproducer / Co / S 25 / E 63
- Institute of Computer Technology, Inc., Suite 100 - 2600 Virginia Ave., N.W., Washington, D.C. 20037 / 202-337-7200 / *C 67
Train computer operators, programmers and systems analysts on IBM 1401, 360, and autocoder; feasibility studies, programming systems design / Sv Co / S 7 / E 64
- Integrated Business Methods, Inc., 2135 Wisconsin Ave., N.W., Washington, D.C. 20007 / 202-965-5015 / *C 67
Data preparation, key punching and verifying, EAM, maintenance of automated information systems, data processing management consultation, systems analysis, programming / Sv / S 200 / E 57
- Interdata, 17 Lewis St., Eatontown, N.J. 07724 / 201-542-3094 / *C 67
16 bit general purpose digital computer. Peripheral equipment including card readers, line printers, teletype, magnetic tape units, A/D and D/A converters, multiplexer and logic modules / Eq / S 30 / E 66
- International Accountants Society, Inc., Business Electronics Div., 209 W. Jackson Blvd., Chicago, Ill. 60606 / 312-HA7-5322 / *C 66
Home study courses in programming for computers, and applications of business problems to computers / S 100 / E 55 (division)
- International Computers and Tabulators Ltd., 839 Stewart Ave., Garden City, New York, N.Y. 11533 / 516-CH8-5656 / *C 66
I.C.T. 1900 series of digital computers. Computer peripheral and auxiliary equipment for O.E.M. / S 20,000 / E 59
- International Data Corp., 355 Walnut St., Newtonville, Mass. 02160 / 617-332-8840 / *C 67
Market research and analysis studies in the computer and data processing field. Computer and tab equipment customer rosters maintained for U.S. and foreign markets / Sv / S 22 / E 64
- International Data Processing Corp., 15 E. 26th St., New York, N.Y. 10010 / 212-683-6115 / *C 67
Consulting and programming services / Sv / S 15 / E 63
- International Data Processing Institute, (Div. of International Data Processing Institute), 1024 S. Wabash Ave., Chicago, Ill. 60605 / 312-HA7-3342 / *C 67
Training of IBM key punch and basic machine operators, and IBM computer programmers / Co / S 30 / E 60
- International Digitizing Corp., P.O. Box 7337, Tulsa, Okla. 74105 / 918-LU2-0757 / *C 67
Digitizing services for electrical logs, or almost any other type of graphical data. Computer programming and consulting for oil industry / Sv / S 3 / E 66
- International Diode Corp., 90 Forrest St., Jersey City, N.J. 07304 / 201-432-7151 / *C 67
Fast switching germanium diodes, silicon diodes / S 10-19 / E 59
- International Electro-Magnetics, Inc., Eric Dr. & Cornell Ave., Palatine, Ill. 60067 / 312-358-4622 / *C 67
Research, development and production of record, playback and erase magnetic heads / S 37 / E 59
- International Electronic Research Corp., 135 W. Magnolia Blvd., Burbank, Cal. 91502 / 213-849-2481 / *C 66
Analog to digital converters / S 350 / E 50
- International Rectifier, 233 Kansas St., El Segundo, Cal. 90246 / 213-678-6281 / *C 66
Zener voltage regulators, controlled rectifiers, transient protectors, photoelectric readouts / S 1100 / E 47
- International Resistance Co., 401 N. Broad St., Philadelphia, Pa. 19108 / 215-WA2-8900 / *C 66
Resistors (composition, film, power and precision wire wound and special application); potentiometers, displacement transducers; low pressure cell; rectifiers; pressure transducers, diodes, frequency and time standards / S 2500 / E 27
- International Tabulating Institute, (Div. of International Tabulating Institute Franchise Co.), 1030-15th St., N.W., Suite 240, Washington, D.C. 20005 / 202-296-2866 / *C 67
Instruction in key punch, computer and machine operation and wiring, programming, complete data processing / Co / S 14 / E 64
- International Tabulating Institute, (Div. of Kett Engr.), 101 S. Vermont, Los Angeles, Cal. 90004 / 213-385-8301 / *C 67
Training in programming, computer operations, tab & wiring, and key-punch / Co / S 20 / E 57
- Interstate Data Services, Inc., (Div. of Americana Nursing Ctrs., Inc.), 118 E. Washington St., Monticello, Ill. 61856 / 217-762-2437 / *C 67
Data processing services, programming, systems analysis, consulting / Sv / S 14 / E 59
- Invac Corp., 26 Fox Rd., Waltham, Mass. 02154 / 617-899-2380 / *C 67
Peripheral data processing equipment; tape punches and readers; input keyboards, I/O typewriters, output printers; tape-to-tape conversion systems / Eq / S 70 / E 59
- Itek Corp., 10 Maguire Rd., Lexington, Mass. 02173 / 617-862-6200 / *C 65
Research, development and manufacture of digital computers, graphic to digital converters, information retrieval devices, mass memory systems, high speed printers, film readers, scanners, translating equipment, and visual output devices / S 2100 / E 57
- ITT Data Services, (Div. of International Telephone and Telegraph Corp.), Route 17 & Garden State Pkwy., Paramus, N.J. 07652 / 201-262-8700 / *C 67
Complete computation, programming and systems services / Sv Ti / S 600 / E 65
- ITT Federal Laboratories, (Div. of International Telephone and Telegraph Corp.), 500 Washington Ave., Nutley, N.J. 07110 / 201-284-0123 / *C 65
Medium and large scale real time data processors for on-line applications: ITT 025 data processor, ITT 525 Versatile Automatic Data Exchange / S ITT, 173,000; ITTFL, 5,000 / E 20
- ITT General Controls, 801 Allen Ave., Glendale, Cal. 91201 / 213-842-6131 / *C 65
Automatic controls for product or process. Counters and counting devices, actuators, magnetic valves, Hydramotor electrohydraulic valves and actuators, industrial controls and instruments, mercury switches, Klikswitch snap-acting switches, time switches (sequency), transformer-relays, contactors, limit controls (temperature) / S 3000 / E 30

J

- J. L. Jacobs & Co., 53 W. Jackson Blvd., Chicago, Ill. 60604 / 312-427-8162 / *C 67
Consulting services / Sv / S 45 / E 15
- Janus Control Corp., 296 Newton St., Waltham, Mass. 02154 / - / *C 66
Electronic decade and instrument counters and counter-related products; numerical displays / S 30 / E 63
- Johnson Computing & Tabulating Corp., 5800 Marvine St., Philadelphia, Pa. 19140 / 215-WA2-5012 / *C 67
Complete service center / Sv / S 75 / E 58
- Jonker Corp., 26 N. Summit Ave., Gaithersburg, Md. 20760 / 301-948-9440 / *C 67
Information retrieval systems, data retrieval and correlation systems based on Termatres optical coincidence equipment; information systems design / Sv Eq / S 75 / E 60

K

- Kaman Nuclear, (Div. of Kaman Aircraft),

Roster of Organizations

- Garden of Gods Rd., Colorado Springs, Colo. 80907 / 303-473-5880 / *C 67
Scientific and commercial service bureau; Control Data 3400, UNIVAC 1004 and data link capabilities, EAM equipment, plotting / Sv Ti Co / S 300 / E 57
- Kansas City College of Automation, 3230 Main St., Kansas City, Mo. 64111 / 816-JEL-6007 / *C 67
Complete tabulating systems and key punch machines (IBM equipment) / Eq Co / S 11 / E 63
- Kardon Computing Center, (Div. of Kardon Enterprises), 219 N. Broad St., Philadelphia, Pa. 19107 / - / *C 67
Computer service bureau specializing in commercial applications offering systems and programming services, keypunching and computer time either as a complete package or individually / Sv / S 30 / E 65
- John F. Keane Assoc., Inc., 77 Main St., Hingham, Mass. 02043 / 617-749-5917 / *C 67
Consulting, systems, and programming services / Sv / S 20 / E 65
- Kee's Coastal Business College, Suite 350 Monticello Arcade, Norfolk, Va. 23510 / 703-627-1544, 703-622-3013 / *C 67
Key punch, data processing and computer programming training / Co / S 8 / E 38
- George Kelk Ltd., 48 Lesmill Rd., Don Mills, Ontario, Canada / 416-445-5850 / *C 67
Special-purpose computers and interface equipment for on-line gauging and process control / S 56 / E 53
- Keltec Industries, Inc., Alexandria Div., 5901 Edsall Rd., Alexandria, Va. 22314 / 703-354-2000 / *C 67
Special purpose computers; consulting services; converters — A/D, D/A, graphic to digital, and tape to tape. Data logging and data acquisition equipment. Digital integrators, programming services, scanners, simulators, systems engineering / Eq Sv / S 265 / E 58
- Kennedy Co., 275 N. Halstead Ave., Pasadena, Cal. 91109 / 213-681-9314 / *C 67
Incremental recorders, including Models DS 370, 1400, 1500 and 2200 / S ? / E ?
- Keuffel & Esser Co., 300 Adams St., Hoboken, N.J. 07030 / 201-659-1100 / *C 67
Digital computer / Eq / S 2100 / E 1867
- Keydata Corp., (Div. of Charles W. Adams Assoc.), 575 Technology Sq., Cambridge, Mass. 02139 / 617-491-6565 / *C 67
On-line invoice preparation with real time control of inventory, accounts receivable, and by-product sales analysis / Ti / S 76 / E 64
- Keyed Systems & Service, Inc., (Div. of A. H. Rice Co.), 55 Spring St., Pittsfield, Mass. 01201 / 413-443-1765 / *C 67
Data processing services covering full range of general business accounting and financial reports, statistics, inventory control, computer assisted numerical control tapes / Sv Co / S 3 / E 65
- Keystone Computer Assoc., Inc., 409 N. Easton Rd., Willow Grove, Pa. 19090 and 385 Concord Ave., Belmont, Mass. 02178 / 215-657-0400 and 617-489-2100 / *C 67
Service in computer programming, software systems design and development, systems analysis, operations research, systems engineering, applied math, scientific and data processing applications, management consulting / Sv / S 75 / E 65
- Kimball Systems, Inc., (Div. of Litton Industries), 215 Daniel St., Farmingdale, N.Y. 11735 / 516-MY4-7300 / *C 65
High-speed punched tag reader, PM "75" machine, hard pack / S 450 / E 1876
- Lester B. Knight & Associates, Inc., 549 W. Randolph St., Chicago, Ill. 60606 / 312-263-3800 / *C 67
Management information systems, planning, re-thinking, systems design, equipment selection and implementation; EDP audit of operations; CPM network scheduling; TELE-communications; plant automation. Service for banking, industry, institutions, commerce, government / Sv / S ? / E 45
- Wm. M. Kordsiemer and Assoc., 100 W. Monroe St., Chicago, Ill. 60603 / 312-RA6-7580 / *C 67
Design and implementation of integrated distribution operation systems; specification of data processing and communications equipment, environment and personnel; training and development of personnel; analysis of financial aspects / Sv Co Le / S 50 / E 60
- E. H. Kramer & Co., 6505 Wilshire Blvd., Los Angeles, Cal. 90048 / 213-653-6230 / *C 67
Consulting services and system design / Sv Co / S 6 / E 60
- Arthur S. Kranzley & Co., Inc., 1110 Wynwood Ave., Cherry Hill, N.J. 08034 / 609-665-4447 / *C 67
Management consultants specializing in the computer field: systems guidance; marketing research on an industrial level; new product and service development programs; technically oriented project, service and product planning / Sv / S ? / E 62
- KRS Instruments, (Div. of Datapulse Inc.), 1313 N. Lincoln Ave., Pasadena, Cal. 91103 / 213-798-9144 / *C 67
Cartridge magnetic tape recorders / S 62 / E 63
- Kwik File Inc., 2516 Lyndale Ave. S., Minneapolis, Minn. 55405 / 612-827-5641 / *C 67
Tabulating card trays and edge punched card trays / S 10 / E 64
- Kyros Corp., 5428 Lake Mendota Dr., Madison, Wis. 53705 / 608-238-3587 / *C 67
Consulting in plastics, coatings, adhesives, aerosol technology, etc.; "Kyread" computer tape developer; "Kysolve" specialty solvents / S 6 / E 60
- Leach Corp., 405 Huntington Dr., San Marino, Cal. 91108 / 213-682-3506 / *C 67
Magnetic tape recorders, relays / Eq / S 1000 / E 19
- Leach Corp., Controls Div., 717 N. Coney Ave., Azusa, Cal. 91702 / 213-334-8211 / *C 66
Data recording systems for aerospace and industrial applications; specializing in light-weight, portable, high environmental applications; compatible with all computer formats / S 450 / E 60
- Lear Siegler, Inc., Power Equipment Div., P.O. Box 6719, Cleveland, O. 44101 / 216-662-1000 / *C 66
Magnetic particle clutches or brakes / S 1200 / E 40
- Ledex Inc., 123 Webster St., Dayton, O. 45402 / 513-224-9891 / *C 65
Research, development, design, and production of remote switching and actuating components and subsystems, such as intervalometers, automatic checkout, mode selectors, programmers, sequence controls, positive/negative circuit searching, pulsing devices, guidance control, power transfer, switching and/or actuating subsystems to meet extreme environments. Standard products include: rotary and medium stroke linear solenoids, protected silicon bridge rectifiers, transient controls, stepping and servostep motors, open and hermetically sealed switches for multi-circuit switching, arc suppressors / S 340 / E 42
- Leeds & Northrup Co., Sumneytown Pke., North Wales, Pa. 19454 / 215-699-5353 / *C 66
Industrial computer control systems — digitally directed analog mode and direct digital control, LN 4100, LN 4200—also, a line of industrial data loggers, LN 1000, LN 1500 / S 3100 / E 1899
- Lenkurt Electric Co., Inc., (Div. of G.T.E.), 1105 County Rd., San Carlos, Cal. 94070 / 415-591-0461 / *C 67
Communications systems / S ? / E ?
- LFE Electronics, 1075 Commonwealth Ave., Boston, Mass. 02215 / 617-254-4233 / *C 66
Batch-fabricated core memories; CRT displays; delay line memories / S 1050 / E 46
- Licon Div., Illinois Tool Works Inc., 6615 W. Irving Park Rd., Chicago, Ill. 60634 / 312-AV2-4040 / *C 65
Full line of precision snap-action switches, illuminated pushbutton switches, environment-free switches / S 150 / E 55
- Liebert Corp., 500 Dana Ave., Columbus, O. 43223 / 614-221-8589 / *C 67
Mfg. floor-flo system; air conditioning unit for constant temperature and humidity computer rooms (prepackaged system) / Eq / S 35 / E 65
- Lincoln Business College, 814 W. Church St., Orlando, Fla. 32805 / 305-241-1571 / *C 67
Instruction and training in control panel wiring, card and form design, procedure development, IBM management principles, and 1401 computer programming, key punch operation, sorting, reproducing, collator and interpreting, accounting and calculation machines / Co / S 8 / E 64
- Lipps, Inc., 1630 Euclid St., Santa Monica, Cal. 90404 / 213-EX3-0449 / *C 66
Complete line of instrumentation and audio heads for professional equipment — magnetic recording heads / S 50 / E 47
- Liskey Aluminum, Inc., P.O. Box 580, Glen Burnie, Md. 21061 / 301-796-3300 / *C 66
Raised flooring, modular air conditioning, partitions, design and engineering for planning computer room / S 250 / E 58
- Litton Electronic Business Systems — Monroe International Inc., 955 Waterman Ave., E. Providence, R.I. 02914 / 401-434-4207 / *C 67
Monrobot XI desk-sized electronic computer for scientific, business and educational uses; Monro-magnetic card system; Litton EBS/1210 electronic programmed billing computer, alpha-numeric-punched tape I/O can be utilized as satellite computer and connected to real time network system; electro-mechanical and

Roster of Organizations

- electronic printing desk top office machines / Eq Sv Ti Co Le / S 22 (Branch) / E 64 (Div.)
- Litton Industries, Clifton Precision Products, Marple at Broadway, Clifton Heights, Pa. 19018 / 215-622-1000 / *C 66
- Converters—analogue to digital, digital to analog; mechanical counters; sine-cosine resolvers; servomechanisms; synchros / S 1300 / E 45
- Litton Industries, Data Systems Div., 8000 Woodley Ave., Van Nuys, Cal. 91406 / 213-781-8211 / *C 66
- Air data computers; general purpose micro-electronic computer; data links; IFF decoders; microelectronic power supplies; command and control system engineering, development and production; automated test equipment; displays; tape recorders / S 3200 / E 61
- Litton Industries, Electron Tube Div., 960 Industrial Rd., San Carlos, Cal. 94070 / 415-591-8411 / *C 67
- Displays; data recording equipment; scanners / Eq / S 1200 / E 53
- Litton Industries, Encoder Div., 20745 Nordhoff St., Chatsworth, Cal. 91311 / 213-341-6161 / *C 67
- Analog to digital shaft transducers / Eq Sv / S 200 / E ?
- Litton Industries, Potentiometer Div., 226 E. Third St., Mt. Vernon, N.Y. 10550 / 914-664-7733 / *C 67
- Precision potentiometers: wirewound, conductive film, carbon film, single turn, multi-turn, pendulum transducers. Variable resistors; unitized servo modules; servo components; potentiometer equipment / S 800 / E 55
- Litton Industries, Triad Distributor Div., 305 N. Briant St., Huntington, Ind. 46750 / 219-356-6500 / *C 66
- Transformers, filter reactors, integrated circuit cards, card extractors, component lead benders / S 500+ / E 47
- Litton Industries, USECO Div., 13536 Saticoy St., Van Nuys, Cal. 91402 / 213-786-9381 / *C 66
- Terminals, handles, knobs, pushbutton switches, special machined and molded products / S 200 / E 42
- Litton Industries, Winchester Electronics Div., Main St. & Hillside Ave., Oakville, Conn. 06779 / 203-274-8891 / *C 66
- Connectors and accessories; round, rectangular miniature, subminiature, printed circuit, coax, crimp contact; special application types / S 500 / E 41
- Litton Systems, Inc., Mellonics Systems Development Div., 1001 W. Maude Ave., Sunnyvale, Cal. 94086 / 408-245-0795 / *C 66
- Data systems engineering and computer programming services in the analysis, design and development of command and control systems; data handling networks; scientific and commercial data processing systems; information management systems; digital computer simulation systems / S 80 / E 61
- LMC Data, Inc., 116 East 27th St., New York, N.Y. 10016 / 212-MU9-4747 / *C 67
- Leases and sells all types of IBM punched card equipment and small IBM card oriented computers / Eq Le / S 100 / E 61
- Lockheed Electronics Co., Avionics and Industrial Products Div., (Div. of Lockheed Aircraft Corp.), 6201 E. Randolph St., Los Angeles, Cal. 90022 / 213-722-6810 / *C 67
- Memory cores, planes, stacks and systems (military and commercial); printed circuit boards and assemblies, etched and/or plated, PC switch parts, chem-milled circuits, multi-layer boards, flexible/flat ribbon multi-conductor cables, welded modules / Eq / S 800 / E 59
- Logic Corp., 15 W. Broad St., Palmyra, N.J. 08077 / 609-829-3106 / *C 67
- Custom designed digital equipment, programming services. LC1000 general purpose digital computer for business and educational use. Special purpose inventory control systems / Eq Co Sv / S 100 / E 64
- Logitek, Inc., 42 Central Dr., Farmingdale, L.I., N.Y. 11735 / 516-MY4-3080 / *C 66
- Time code generators, magnetic tape search and control, time code translators, digital clocks / S 55 / E 61
- Loral Electronic Systems, (Div. of Loral Corp.), 825 Bronx River Ave., Bronx, N.Y. 10472 / 212-TI2-9500 / *C 65
- Special purpose digital and analog computers / S 2255 / E 48
- Lufkin Research Laboratories, 210 W. 131st St., Los Angeles, Cal. 90061 / 213-321-6283 / *C 66
- Digital magnetic tape recorders; tape-to-tape converters; magnetic tape readers / S 35 / E 63

M

- Machine Accounting Supply Co. of Tenn., 821 17th Ave., S., Nashville, Tenn. 37203 / 615-256-1909 / *C 67
- Data processing supplies and accessories / S 1 / E 64
- F. B. MacLaren & Co., Inc., 15 Stepar Pl., Huntington Sta., L.I., N.Y. 11746 / 516-HA3-4433 / *C 66
- Special purpose analog computers / S 15 / E 50
- MAC Panel Co., (Div. of Adams-Millis Corp.), 2060 Brentwood St., P.O. Box 5027, High Point, N.C. 27263 / 919-882-8138 / *C 67
- Magnetic computer tape, magnetic instrumentation tape, audio tape, data processing control panels and wires, plugboard programming systems / S 95 / E 58
- Mactex, (Div. of McDonnell Co.), Suite 400/500, Jefferson Bldg., Houston, Tex. 77002 / 713-224-5921 / *C 67
- Management consultants to scientific and commercial businesses offering consulting, engineering and programming on computers 7094, 360/30, 360/40, Calcomp plotter, on-line photo plotter, 7711, data transmission terminals 360/20's / Eq Sv Ti Co / S 80 / E 64
- Magnecraft Electric Co., 5575 N. Lynch Ave., Chicago, Ill. 60630 / 312-AV2-5500 / *C 65
- High speed relays for computers / S 125 / E 51
- Magne-Head/Systematics Div., General Instrument Corp. — see General Instrument Corp., Magne-Head/Systematics Div.
- Magnetic Media Corp., 616 Fayette Ave., Mamaroneck, N.Y. 10543 / 914-698-8660 / *C 67
- Magnetic tape / S ? / E 65
- Magnetics Inc., Butler, Pa. 16001 / 412-285-4711 / *C 66
- Powder cores, tape wound cores, ferrite cores, isolation amplifier / S 400 / E 49
- Magnusonic Devices, Inc., (Div. of Dyna Magnetic Devices), 68 Toledo St., Farmingdale, N.Y. 11735 / 516-249-2888 / *C 67
- Manufacturing of magnetic tape heads and bulk tape degaussers; recontouring of magnetic tape heads / S 20/E 66
- MAI Equipment Corp., 100 Providence Hwy Westwood, Mass. 02090 / 617-326-8311 / *C 67
- Purchase, leaseback and supplier of IBM punch card equipment; purchase and supplier of IBM 1401 systems; purchase and leaseback of IBM 360 systems / Eq Le / S 55 / E 57
- Gene Maior & Assoc. Inc., 138 Nepperhan Ave., Yonkers, N.Y. 10701 / 914-969-0807 / *C 67
- Data processing machines 024's through 407's: panels, wires, parts, all peripheral equipment, leasing, rebuilding, sales, purchasing, customer engineering, systems / Eq Sv Le / S 25 / E 64
- Management Advisory Services, 2951 Stony Place, Oceanside, N.Y. 11572 / 516-OR8-5443 / *C 67
- Consultants to management specializing in data processing; system design and installation; wiring of EDM panels; programming and service bureau work for market research / Sv / S 4 / E 59
- Management Computer Controls, Inc., 3385 Airways Blvd., Memphis, Tenn. 38130 / 901-396-7620 / *C 67
- Consulting and data processing. Specialists in construction and reinforcing steel / Sv / S 9 / E 65
- Management Dynamics Ltd., Heathrow House, Bath Rd., Cranford, Hounslow, Middlesex, England / SKYport-9191 / *C 67
- Consulting and computing services; operations research; programming. ICT 1905 system, 8 x 40Kc magnetic tape unit, paper tape readers, paper tape punch, card reader, line printer. Also, systems instruction / Sv Co / S 500 / E 65
- Management Information Services Inc., 42 E. Gay St., Columbus, O. 43215 / 614-221-7571 / *C 67
- Programming and consulting services, installation management, programming packages for financial institutions, commercial on-line and off-line processing / Sv Ti / S 25 / E 64
- Management Monitors Inc., 18049 Crenshaw Blvd., Torrance, Cal. 90504 / 213-321-8487 / *C 67
- General and specialized data processing service / Sv / S 12 / E 63
- Management Research International, Inc., 503 Mutual Savings Bldg., Austin, Tex. 78701 / 512-GR2-8255 / *C 67
- Consulting services in areas of management science, marketing, operations research, urban studies, economic analysis, computer-related systems design and implementation, and applied science / Sv Co / S 15+ / E 65
- Management Systems Corp., 209 Griffin St., Dallas, Tex. 75202 / 214-RT2-8251 / *C 66
- Data processing consultants in systems and applications; installation management; contract programming; computing services and time sales; complete bureau services / S 20 / E 64
- Management Systems International AB, 37, Baneratan, Stockholm, Sweden / 08/607040 / *C 66
- Courses in data processing; periodical "Automatisk Data-Behandling"; books / S 4 / E 65
- F. L. Mannix & Co., Inc., 65 Williams St., Wellesley Office Park, Wellesley Hills, Mass. 02181 / 617-237-1921 / *C 67
- Consulting and placement service for EDP clients / Sv / S 7 / E 59
- The Marconi Co. Ltd., Automation Div., Chelmsford, Essex, England /

Roster of Organizations

- Chelmsford 53221 / *C 67
Manufacture general purpose on-line Myriad computers / S ? / E ?
- Marks-Baer, Inc., 5586 Main St., Williams-ville, N.Y. 14221 / 716-634-9090 / *C 67
Services: applications design, programming, consulting, training / Sv Co / S 8 / E 66
- Marksmen, Inc., 21 West 10th St., Kansas City, Mo. 64105 / 816-842-4150 / *C 67
Data acquisition, transmission and conversion; models 353 typewriter recorder console; 354 typewriter recorder transmitter; 355 typewriter recorder playback; 356 typewriter recorder, transmitter, playback, receiver; 949 tape to tape converter / S 20 / E 64
- L. A. Marler & Co., 6827 Myron Ave., St. Louis, Mo. 63121 / 314-EV1-8449 / *C 67
Source data key punches, source data capturing devices (punch tape & punched card from typewriter key-boards) / Eq / S 7 / E 35
- Marshall, Roger D., W-425 Arlington Towers, Arlington, Va. 22209 / 703-524-7515 / *C 67
Tape to card converter, card to tape converter, card to teletype, teletype to card, act as government distributor for Systematics Div., General Instrument Corp.; tape to magnetic tape converters and card via telephone to magnetic tape communications as government distributor for Digi-Data Corp.; also SeeScan Optical Coincidence information systems / Eq / S 1 / E 55
- Martin W. Wyrod Assoc., 747 New Center Bldg., Detroit, Mich. 48202 / 313-TR4-0045 / *C 67
Systems consulting firm providing comprehensive services for the applications of computer technology in industry, commerce and government with specialized capabilities in areas of systems analysis, programming, information processing, process control and software development / Sv / S 7 / E 66
- Massey Dickinson Co., Inc., 9 Elm St., Saxonville, Mass. 01706 / 617-877-2511 / *C 65
Programming and data acquisition equipment for behavioral, physiological, psychological, and visual research / S 25 / E 57
- Mast Development Co., 2212 E. Twelfth St., Davenport, Ia. 52803 / 319-323-9729 / *C 67
Identification cameras, miniature angle counters, random access film-strip and slide projectors (information retrieval devices) / S 75 / E 45
- MATA College of Automation, 415 E. Broad St., Columbus, O. 43215 / 614-224-8263 / *C 67
Courses in computing, programming, and systems / Co / S 35 / E 60
- Mathatronics, (Div. of Barry Wright Corp.), 241 Crescent St., Waltham, Mass. 02154 / 617-893-1630 / *C 67
Desk computer/calculators with manual, 10 key or full typewriter keyboard, punched paper tape I/O and serial strip and page printers with applications and complete software for statistical, mathematical, scientific and engineering areas / Eq / S 100 / E 61
- Mathematical Applications Group, Inc., 180 S. Broadway, White Plains, N.Y. 10605 / 914-428-2350 / *C 67
Systems analysis and computer programming / Sv / S 20 / E 66
- Mathematical Engineering Associates, Inc., 7007 Preston Rd., Dallas, Tex. 75205 / 214-LA1-0370 / *C 67
Consultation EDPM with total EDP audit methods; documentation techniques and standards; programming and analysis of systems, with total implementation; educational services / Sv Co / S 25 / E 59
- Mathematischer Beratungs-und Programmier-ungsdienst, Recheufentrum Rhin-Ruhr, Kleppinstrasse 26, 4600 Dortmund, W. Germany / 0231-528697 / *C 67
Consulting, system engineering, programming, computing (ADP), operations research; (general and special consulting ADP; various system engineering; basic and application software programming both commercial and scientific ADP; scientific and commercial computing on own computer, Electrologica XI and external comp. capacity.) Editors of technical magazine "elektronische dataverarbeitung". Programming course / Sv Co / S 100 / E 57
- The Matrix Corp., Computer Services Div., 635 Hawaii St., El Segundo, Cal. 90245 / 213-679-8211 / *C 67
Computing, consulting and programming services; information and systems engineering; programming and systems courses. Equipment includes two IBM 7094, two IBM 1401, a 360/65, three 360/40, two 360/30, a GE 635 and 115 and nine Univac 1004's / Eq Sv Co / S 100 / E 64
- The Matrix Corp., Computer Services Div., 380 Madison Ave., New York, N.Y. 10017 / 212-697-0800 / *C 67
Computer time sales — IBM 7094, IBM 360/40, IBM 360/65. Computer programming and consulting services / Sv Ti / S 200 / E 52
- Mauchly Associates, Inc., Montgomeryville, Pa. 18936 / 215-646-5700 / *C 67
Software systems design in project scheduling methods. IBM 1620 card I/O service bureau / Sv / S 60 / E 59
- Mauchly Honig Time Sharing Associates, (Div. of Mauchly Associates), 116 N. Central Ave., Hartsdale, N.Y. 10530 / 914-949-4580 / *C 67
Marketing representatives for the Mauchly-Dataport™ portable terminal; time sharing, consulting and programming services / Eq Sv Ti Co Le / S 10 / E 67
- Mauchly Systems, Inc., (Div. of Mauchly Associates, Inc.), Box 279, Montgomeryville, Pa. 18936 / 215-MI6-5700 / *C 67
Applied research; information systems design and implementation; data reduction and analysis; operations research; EDP systems — analysis, design, programming / Sv Co / S 16 / E 65
- Mauchly Techniques, Inc., (Div. of Mauchly Associates, Inc.), P.O. Box 279, Montgomeryville, Pa. 18936 / 215-MI6-5700 / *C 67
Work scheduling and control systems; analysis, design, and installation / Eq Sv Co Le / S 30 / E 64
- Mauchly-Wood Software Corp., (Div. of Mauchly Associates, Inc.), 3355 Via Lido, Newport Beach, Cal. 92660 / 714-675-4060 / *C 67
Digital Seismic software systems and component parts; information retrieval, operating, and inventory control systems / S 15 / E 66
- MBI Systems, Inc., Statler Office Bldg., 20 Providence St., Boston, Mass. 02115 / 617-426-3689 / *C 66
Programming, systems analysis and design, feasibility studies, pre- and post installations, systems audit, documentation studies, personnel selection / S 6 / E 64
- McCormack, Allen & Co., 434 So. Wabash Ave., Chicago, Ill. 60605 / 312-431-9494 / *C 67
List maintenance services and zip coding by computer, market research statistics, conversion to magnetic tape, publishing consultants on uses of the computer / Sv / S 25 / E 66
- McDonnell Automation Co., (Div. of Mc Donnell Douglas Corp.), P.O. Box 516, St. Louis, Mo. 63166 (Facilities also at 666 Park Ave., E. Orange, N.J. 07017; 7115 Leesburg Pike, Falls Church, Va. 22043; Columbia, Mo.; Denver, Colo.; and Houston, Tex.) / 314-PE1-2121 (St. Louis) / *C 67
Complete range of data processing and computing services: programming, systems design and consulting; management sciences, engineering applications, business consulting services to government, science, business and industry / Sv Co / S 1400 / E 60
- MCE Inc., (The Institute for Management & Computer Education), 135 West 50th St., New York, N.Y. 10020 / 212-581-4423 / *C 67
Management science & programming: courses & seminars, in-house & public / Co / S 6 / E 66
- Mead Management Services, (Div. of Mead Corp.), Talbott Tower, Dayton, O. 45402 / 513-222-9561 / *C 67
Computer services IBM 360/50, 360/30 and NCR 315 RMC. Systems, programming, operations research and key punch services / Sv / S 30 / E 65
- Mechanized Business Inc., Koppers Bldg., Pittsburgh, Pa. 15219 / 412-391-1324 / *C 67
IBM 1401, 16K, 4-7330's; IBM 1410, 40K, 4-7330's; IBM 7010, 100K, 9-729's - IV; all IBM peripheral equipment / Sv Ti / S 60 / E 49
- Medcomp Research Corp., 3333 Vine St., Cincinnati, O. 45220 / 513-281-5617 / *C 67
Programming, systems & consulting services with special applications to scientific or statistical problems. Instruction to qualified persons with extreme physical handicaps / Sv Co / S under 25 / E 65
- Medical Billing Service, Inc., 3023 Summit St., Oakland, Cal. 94609 / 415-452-3663 / *C 67
Computing and consulting; commercial time-sharing services / Sv Ti / S 9 / E 65
- Medical Computer Services, 68 Harvard St., Brookline, Mass. 02146 / 617-566-1139 / *C 67
Specialized data processing service for hospital subscribers for patient billing, statistics, payroll preparation and various analytical reports with data collection service by telecommunication / Sv / S 12 / E 61
- Melcor Electronics Corp., 1750 New Highway, Farmingdale, N.Y. 11735 / 516-694-5570 / *C 67
Control, servo, operational and buffer amplifiers / S 90 / E 60
- Mellonics Systems Development, Div. of Litton Systems, Inc. -- see Litton Systems, Inc., Mellonics Systems Development Div.
- Memorex Corp., 1180 Shulman Ave., Santa Clara, Cal. 95050 / 408-248-3344 / *C 67
Precision magnetic tape / S 950 / E 61
- Memphis Methods & Tabulating Service, 56 N. Main St., Memphis, Tenn. 38103 / 901-527-4913 / *C 67
1401 magnetic tape, 1440 disc; dealer pressure sensitive labels, continuous forms; mailing lists, direct mail service; all computer applications;

Roster of Organizations

- keypunching / Eq Sv Co Le / S 15 / E 58
 Merle Thomas Corp., 10400 Connecticut Ave., Kensington, Md. 20795 / 301-933-4410 / *C 67
 Specialize in financial and material management information systems and special technical consulting services; two modern hi speed computers and related peripheral equipment serve most data processing needs. Business and technical programming staff; engineers capable of computer systems and hardware design / Sv / S 90 / E 62
 Methods Research Corp., 105 Willow Ave., Staten Island, N.Y. 10305 / 212-442-4900 / *C 66
 Visual control systems / S 25 / E 1852
 M-H Standard Corp., 400 Heaton St., Hamiltion, O. 45011 / 513-894-7171 / *C 65
 Palletflo and Versarack, components for computer controlled live storage racks / S 50 / E ?
 Miami Institute of Technology, 561 NE 79 St., Suite 238, Miami, Fla. 33138 / 758-4942 / *C 67
 Training in data processing; computer technology; programming; punched card equipment; data processing service bureau; consulting service / Sv / S 3 / E 65
 Michigan Business Machines, 1375 E. Square Lake Rd., Troy, Mich. 48084 / 313-879-0055 / *C 67
 All used computers. IBM punched card equipment / Le / S 8 / E 62
 Micro-Lectric, Inc., 19 Debevoise Ave., Roosevelt, L.I., N.Y. 11575 / 516-FR8-3222 / *C 65
 Precision wire-wound potentiometers, linear and non-linear, sine cosine / S 19 / E 51
 Micronic Corp., 3127 Colvin St., Alexandria, Va. 22314 / 703-549-3033 / *C 66
 Magnetic tape / S 30 / E 65
 Microsonics, Inc., 60 Winter St., Weymouth, Mass. 02188 / 617-337-4200 / *C 65
 Delay lines memory systems up to 20 mc; quartz crystal computer clocks / S 50 / E 57
 Microspace, Inc., 170 S. Van Brunt St., Englewood, N.J. 07631 / 201-567-7454 / *C 65
 Information discs, analog to digital conversion encoders, energy coupled encoder, visual read-out equipment, light sources / S 27 / E 62
 Micro Switch, (Div. of Honeywell), 11 W. Spring St., Freeport, Ill. 61032 / 815-232-1122 / *C 67
 Manufacturer of: precision snap-action switches; mercury switches; reed switches; multi-lighted Coordinated Manual Controls equipped with dry-circuit or electronic duty contact blocks; microsecond "one-shot" circuits (electronic package); keyboards / S ? / E 35
 Mid-America Computer & Data Processing Center, 306 W.O.W. Bldg., 14th & Farnam, Omaha, Nebr. 68102 / 402-341-2424 / *C 67
 Computer service specializing in accounts receivable and doctor billing / Sv Ti / S 10 / E 62
 Midland National Bank, 201 West Wisconsin Ave., Milwaukee, Wis. 53203 / 414-273-4200 / *C 67
 Computing services, programming, systems engineering. Equipment includes: B-300 - Tape, optical scanner, all other related E.A.M. equipment / Sv Le / S 27 / E 62
 M.I.D.S., Inc., 545 Eighth Ave., New York, N.Y. 10018 / 212-565-2479 / *C 67
 Data processing consultants in the apparel industry — systems design, seminars, programming, computer service center / Sv Ti Co / S 8 / E 66
 Midwest Business Statistics Inc., 6945 North Ave., Oak Park, Ill. 60302 / 312-VI8-9700 / *C 67
 Commercial and scientific computing service for medical profession only; utilize various hardware strictly on a time sharing basis / Sv / S 40 / E 60
 Midwestern Instruments, Subsidiary of Tele Corp., 41st and Sheridan, Tulsa, Okla. 74101 / 918-627-1111 / *C 66
 Tape transport systems / S 300+ / E 51
 Mikron, Inc. - Bankers Data Services, Inc., 505 Hadley, Houston, Tex. 77002 / 713-JA8-2436 / *C 67
 General data processing service, paper tape, magnetic tape, punch card applications; financial applications, MICR processing / Sv / S 8 / E 65
 Milner Bros. Prods., 8000 Blackburn Ave., Los Angeles, Cal. 90048 / 213-936-4914 / *C 67
 Software, management consultants / Sv Co Le Ti / S 30 / E 58
 Missouri Research Laboratories, Inc., 2109 Locust St., St. Louis, Mo. 63103 / 314-241-7875 / *C 66
 Binary-to-decimal converter/display, digital interface, digital address selector / S 400 / E 46
 Modern Business Records, 6030 Chase Rd., Dearborn, Mich. 48126 / 313-584-7330 / *C 67
 Computing services using IBM 360 and miscellaneous EDP equipment / Sv / S 30 / E 49
 Mohawk Data Sciences Corp., 245 Columbine St., Denver, Colo. 80206 / 303-333-1548 / *C 67
 Data recording, data communications and verifying equipment / Eq / S 3 / E 64
 Mohawk Data Sciences Corp., 95 E. Main St., Meriden, Conn. 06450 (Branch) / 203-238-1976 / *C 67
 Manufacture and market data recorders (key entry magnetic tape "key punch-key verify" machines and related magnetic tape input devices / Eq / S 4 / E 64
 Mohawk Data Sciences Corp., P.O. Box 630, Herkimer, N.Y. 13350 / 315-866-6800 / *C 67
 Data-recorders for computer input preparation directly on 1/2" standard computer magnetic tape with on-line devices such as punched card reader, modem for long distance transmission of data; adding/listing machine; paper tape strip reader; input/output typewriter / S ? / E 64
 Monarch Metal Products, Inc., MacArthur Ave., New Windsor, N.Y. 12550 / 914-562-3100 / *C 67
 Data processing accessory equipment; computer accessories; punch card accessories; forms binding equipment / Eq / S 85 / E 45
 Monroe Computer Systems Div., 550 Central Ave., Orange, N.J. 07050 / 201-673-6600, Ext. 469 / *C 66
 Monroe XI, a desk sized general purpose digital computer for business, engineering and educational use and other computers for special purposes; the magnetic Monro-Card System, an optional supplementary storage system for Monrobot XI / S 1000 / E 64 (Div.)
 Monroe DATALOG Div. of Litton Industries — see Litton Industries, Monroe DATALOG Div.
 Monroe Data Processing Inc., 550 Central Ave., Orange, N.J. 07050 / 201-673-6600 / *C 66
 Nationwide data processing services offered through accountants to small and medium sized businesses; process all paperwork necessary for general business accounting and financial statements; deliver sales analysis for management guidance; also DATA-TAX, a computerized personal income tax preparation service / S 100+ / E 60
 Monroe International, Inc., Div. Litton Industries, 550 Central Ave., Orange, N.J. 07050 / 201-673-6600 / *C 65
 Monrobot XI desk-sized electronic computer for scientific and business use, Monro-Card Processor for additional high-capacity storage. Electro-mechanical and electronic office machines / S ? / E 12
 Moog Inc., Industrial Div., 220 Samison Rd., East Aurora, N.Y. 14052 / 716-652-0220 / *C 67
 Servo actuation components and systems for computer memory storage equipment and tape transports / S 100 / E 59
 Moore Associates Inc., 815 American St., San Carlos, Cal. 94070 / 415-591-5363 / *C 67
 Telemetering and data transmission systems / Eq / S 50 / E 57
 Moore Business Forms, Inc., Niagara Falls, N.Y. 14302; Park Ridge, Ill. 60068; Denton, Tex. 76201; Emeryville, Cal. 94608 / *C 67
 Continuous business forms; scanning forms; tab card products; forms handling equipment / S 13,000+ / E 1882
 The Morley Co., 909 Islington St., Portsmouth, N.H. 03801 / 603-436-5430 / *C 67
 Tabulating cards and magnetic tape for data processing equipment / S 75 / E 1890
 F. L. Moseley Co., 409 No. Fair Oaks, Pasadena, Cal. 91103 / SY2-1176 / *C 64
 X-Y recorders (with time base); strip chart recorders, logarithmic amplifiers, curve followers, computer accessories / S 300 / E 51
 The Mosler Safe Co., 320 Park Ave., New York, N.Y. 10022 / 212-PL2-4500 / *C 65
 Protection for data processing tapes, disk packs, etc., from fire, smoke, moisture; mechanized card files / S 2200 / E 1848
 Motorola Inc., Government Electronics Div., 8201 E. McDowell Rd., Scottsdale, Ariz. 85252 / 602-947-8011 / *C 67
 Visual display equipment (graphic, CRT, radar); high speed printers; special purpose computers for guidance, radar data processing; data transfer systems (microwave) / S ? / E ?
 Motorola Semiconductor Products, Inc., 5005 E. McDowell Rd., Phoenix, Ariz. 85008 / - / *C 66
 Computer components / S 6600 / E 55
 MSADP, Inc., 835 E. Germantown Pike, Norristown, Pa. 19401 / 215-279-7500 / *C 67
 General data processing and computing services; facilities include Burroughs B-283, 4 magnetic tapes, paper tape, punched card IBM unit card equipment / Eq Sv / S 20 / E 64
 M.T.I. Business Schools (General Office), 5512 Hollywood Blvd., Hollywood, Cal. 90028 / 213-H01-9471 / *C 67
 Training for IBM 360 and IBM 1401 programmers; also for computer, tab wire and key punch operators / Co / S 35 / E 54
 M.T.I. Business Schools, (Branch of M.T.I., Inc.), 1703 Broadway, Suite 300, Oakland,

Roster of Organizations

- Cal. 94612 / 415-834-1253 / *C 67
 Training for keypunch, sorter and computer operators, etc. Also computer programming / Co / S 11 / E 64
- M.T.I. Business Schools of Sacramento, Inc., (Div. of M.T.I. Inc.), 2100 Capitol Ave., Sacramento, Cal. 95816 / 916-442-8933 / *C 67
 Full line of data processing training with emphasis on business application. All models of IBM key punch unit record equipment; IBM 360/20 computer system and related peripheral equipment. Train key punch operators, computer operators, and computer programmers / Sv Co / S 12 / E 65
- M.T.I. Business Schools, 80 E. San Carlos St., San Jose, Cal. 95112 / 408-286-8282 / *C 67
 Training in IBM 029, 024, 026, 059 key punch equipment; IBM 082 sorter / Co / S 8 / E 65
- M.T.I. Business Schools, 7790 N.W. 7th Ave., Miami, Fla. 33150 / - / *C 67
 Computer training and instruction / Co / S 12 / E 55
- Multiforms, Inc., 560 Third Ave., Mt. Vernon, N.Y. 10550 / 914-0W9-5600 / *C 67
 Business and data processing forms and systems / S 90 / E 59
- Murray & Heister, Inc., 1335 Green Court, N.W., Washington, D.C. 20005 / 202-NAB-5234 / *C 67
 Data processing forms, labels, card correction seals, carbon interleaved card sets / S 16 / E 28
- Ray Myers Corp., 1302 E. Main St., Endicott, N.Y. 13760 / 607-PI8-0424, PI8-4273 / *C 66
 Data processing accessory equipment. Systems development and production programs for input/output departments in data handling. Complete floor plan service / S 50 / E 55
- N**
- Namac, Inc., 534 Boston Post Rd., Wayland, Mass. 01778 / 617-899-5560 / *C 67
 Computing and consulting services. Equipment includes H-200, 16-K, 5 tape drives, punch paper tape reader, sorter, collator, key punches / Eq Sv / S 20 / E 61
- Namar, Inc., 108 West Liberty Dr., Wheaton, Ill. 60187 / 312-653-6878 / *C 67
 Data processing consulting, programming and training; micro film service and consulting / Sv / S 5 / E 64
- Nash and Harrison Ltd., 1355 Wellington St., Ottawa 3, Ontario, Canada / 613-722-6544 / *C 67
 Digital process control computers designed around standard modular components which may be adapted to a wide variety of control applications. Special designs and consulting services quoted on request / S 12 / E 57
- Natel Engineering Co., Inc., 7129 Gerald Ave., Van Nuys, Cal. 91406 / 213-782-4161 / *C 67
 Synchro to DC converters to operate with air data computers and ground computer systems / S 45 / E 59
- National Blank Book Co., Water St., Holyoke, Mass. 01040 / 413-539-9811 / *C 67
 Data binders for punched forms; perforator tape / S 1500 / E 1843
- The National Cash Register Co., Main & K Sts., Dayton, O. 45409 / 513-449-2000 / *C 67
 NCR 315, 310, 304 digital computer systems, RMC (thin film rod memory computer) computer peripherals (card read and punch, magnetic tape servos
- disc files), CRAM files, MICR encoders and sorters, paper tape (read and punch), optical font read; 735 series magnetic tape encoders; NCR 500 computers; magnetic ledger accounting machines; electro-mechanical accounting machines; adding machines; cash registers; business forms; data processing service centers; on-line data processing service / Eq Sv Co / S 70,000 / E 1878
- The National Cash Register Co., (Branch), 921 N St., Fresno, Cal. 93721 / 209-264-5018 / *C 67
 NCR 315-100, 315 RMC, 500, 395, 395-400 / Eq Sv Co / S 100 / E 1884
- The National Cash Register Co., Electronics Div., 2815 W. El Segundo Blvd., Hawthorne, Cal. 90250 / 213-777-7111 / *C 67
 NCR 315-100 and 315 RMC EDP systems and peripherals, NCR 420-2 optical journal reader, and NCR 411 check digit verifier / Eq Sv Ti / S 2200 / E 50
- National Computer Analysts, Inc., U.S. Hwy. 1, Lynwood Dr., Princeton, N.J. 08540 / 609-452-2800 / *C 66
 Consulting, programming and computing services / S 40 / E 62
- National Computer Systems, Inc., 1015 S. Sixth St., Minneapolis, Minn. 55415 / 612-335-3267 / *C 67
 Optical mark readers; psychological & educational test scoring and data processing computer systems with on-line scanner input / Eq Sv / S 50 / E 62
- National Data Processing Corp., 2950 Mahoning Ave., Youngstown, O. 44509 / 216-799-7137 / *C 67
 Data processing consultants in systems and applications; contract programming; computing services and time sales; complete bureau services / Sv / S 10 / E 61
- National Keypunch Services, Inc., 430 Oak Grove, Minneapolis, Minn. 55403 / 602-332-6596 / *C 67
 Keypunching and keyverifying of all data (alpha and/or numeric) / S 65 / E 65
- National Manpower Register, 635 Madison Ave., New York, N.Y. 10022 / 212-HA1-4945 / *C 67
 Computerized employment services for technical professionals / Sv / S 24 / E 65
- National Physical Laboratory, Mathematics Div., Teddington, Middx., England / TEDDINGTON Lock 3222 / *C 66
 Computing service using ACE and KDF9 / S 60 / E 45
- Neat Data Processing Services, 212 North St. Paul, Dallas, Tex. 75201 / 214-748-4977 / *C 67
 Complete computer and tabulating data processing services; data processing systems consultants and contract programmers; hourly or contract computer or tabulator time; hourly or contract keypunching / Sv Ti / S 15 / E 63
- Nexus Research Laboratory, Inc., 480 Neponset St., Canton, Mass. 02021 / 617-828-9000 / *C 66
 Solid-state encapsulated d-c operational amplifiers, logarithmic modules and related components for analog applications; low-profile cases (.375" high) for card rack mounting; analog computer building blocks. Applications department to assist customers with special designs / S 160 / E 62
- Norden Div. of United Aircraft Corp., Helen St., Norwalk, Conn. 06852 / 203-838-4471 / *C 65
 Sense amps, differential amps, servo amps, gates, custom analog and digital circuits, all fabricated as monolithic integral circuits; T0-5 or flat package / S 2100 / E 28
- North Atlantic Industries, Inc., 200 Terminal Dr., Plainview, N.Y. 11803 / 516-681-8600 / *C 66
 Resolver/synchro computer interface equipment / S 125 / E 56
- Northrop Corp., Nortronics Div., 2301 W. 120th St., Hawthorne, Cal. 90250 / 213-757-5181 / *C 66
 Airborne digital computers, input/output devices, support equipment, software, programming, systems integration and test / S 4200 (Div.) / E 57 (Nortronics Div.)
- Northrop Corp., Nortronics Div., Precision Products Dept., 100 Morse St., Norwood, Mass. 02062 / 617-762-5300 / *C 65
 Precision gyroscopes, gyro systems, inertial components, inertial sensor test facilities, standards laboratories, accelerometers / S 1200 / E 48
- Northwest Management Services, Inc., 1107 Pike St., Seattle, Wash. 98101 / 206-MA4-4233 / *C 67
 All types of data processing service center operations including data communications & real-time, time-sharing, on-line processing / Sv Ti / S 18 / E 58
- Norton Associates, Inc., 10 Di Tomas Ct., Copiague, N.Y. 11726 / 516-598-1600 / *C 67
 Standard and special magnetic record/playback/erase heads in single and multitrack arrangements for magnetic tape, film, drum, and magnetic ink character recognition / S under 50 / E 55
- NUMEX Corp., 223 Crescent St., Waltham, Mass. 02154 / 617-899-4040 / *C 67
 Decoding readouts and displays; numerical counters / Eq / S 15 / E 66
- O**
- Edward Ochman Systems, Box 141, Fairfield, Conn. 06430 / 203-259-1927 / *C 67
 Control panels and wires; computer and paper tape; data processing accessories / S 50 / E 49
- Ohio Envelope Co., Box 19086, Cincinnati, O. 45219 / 513-W01-6698 / *C 67
 Accessory equipment for computers / S 48 / E 39
- Ohr-tronics, Inc., 305 West Grand Ave., Montvale, N.J. 07645 / 212-391-7000 / *C 67
 System 80 ticket data control, tape punches and readers, flexibit punch, edge-punched card and flatbed readers, encoding keyboards, digital dial input, tape spoolers, single-revolution clutch / Eq Le / S 75 / E 63
- Oki Electronics of America Affiliate/Oki Elec. Ind. Co. Ltd., 202 East 44th St., New York, N.Y. 10017 / 212-682-1665 / *C 66
 Peripheral equipment / S 10,000 / E 1881
- Oklahoma School of Banking and Business, 22 Park Ave., Oklahoma City, Okla. 73102 / 405-CE5-8575 / *C 67
 Training of keypunch operators, unit record equipment operators, computer programmers / Co / S 20 / E 60
- Old Town Corp., 750 Pacific St., Brooklyn, N.Y. 11238 / 212-MA2-2600 / *C 67
 Inked ribbons for all computers; continuous spirit forms / S 300 / E 17
- Omni-Data, (Div. of Borg-Warner Corp.), 511 N. Broad St., Philadelphia, Pa.

Roster of Organizations

- 19123 / 215-WA5-4343 / *C 66
Digital communication systems, communication terminal equipment, photo-electric tape readers, recorders and displays / S 38,000 (Borg-Warner Corp.) / E 60
- OPTOMECHANISMS Inc., 40 Skyline Drive, Plainview, N.Y. 11803 / 516-433-8100 / *C 66
Photographic type processors; special cameras; photographic devices; photometric devices; optical tachometers; projectors; optical trackers; stereo viewers; satellite detectors; measuring interferometers; stereo comparators; linear measuring tables; neg. to pos. film viewers / S 120 / E 51
- Orchard-Hays & Co., Inc., (Div. of Computer Applications Inc.), 8555 Sixteenth St., Silver Spring, Md. 20910 / 201-587-1333 / *C 67
System analysis, design and computer programming. Operations research, management sciences, and mathematical programming consulting services, software documentation standards consulting, program or systems documentation and technical writing services. Computer equipment evaluation and computer facility and operational audits. Developers of language processors. Compilers, translators, creators of mathematical programming systems (LP/600, CDC OPTIMA). Personnel training seminars and workshops in computer data processing technology and management sciences / Sv Co / S 39 / E 63
- P**
- Pacific Data Processing Co., 9601 Wilshire Blvd., Beverly Hills, Cal. 90210 / 213-275-8254; 272-4747 / *C 67
Financial data processing, data conversion, systems consulting, incremental tape recorders, paper tape punch (developmental - high speed) / Sv Co / S 5 / E 59
- Pacific Data Systems, Inc., (Div. of Electronics Associates Inc.), 644 Young St., Santa Ana, Cal. 92705 / 714-540-3610 / *C 67
General purpose, engineering, business, numerical control and educational computers / Eq / S 130 / E 63
- Pacific Data Systems, Inc., (Regional Sales Hqtrs.), 1557 Oakland Ave., Union, N.J. 07083 / 201-687-0245 / *C 67
PDS-1020 desk size engineering computer; PDS-1020A accountants data processing system / Eq / S 8 / E 62
- John K. Paden Co., 5838 Live Oak St., Dallas, Tex. 75214 / 214-TA3-3773 / *C 67
Contract EDP department operating; contract programming; consulting / Sv / S 10 / E 61
- PAKTRON Div., Illinois Tool Works Inc., 1321 Leslie Ave., Alexandria, Va. 22301 / 703-548-4400 / *C 66
Electronic components, capacitors / S 425 / E 54
- Paper Manufacturers Co., 9800 Bustleton Ave., Phila., Pa. 19115 / 215-673-4500 / *C 66
Perforator tape in rolls or fanfolded available in wide variety of colors, diameters and widths. Compositions available are: paper; fibre; paper/mylar/paper; mylar/aluminum foil/mylar; and mylar / S 450 / E 05
- Pastoriza Electronics Inc., 385 Elliot St., Newton Upper Falls, Mass. 02164 / 617-332-2131 / *C 67
- A-D and D-A converters; associated subsystems; and modular power supplies / S 25 / E 44
- L. A. Pearl Co., 801 Second Ave., New York, N.Y. 10017 / 212-OR9-6535 / *C 65
IBM computers and peripherals bought for cash / S 1 / E 45
- Pers Inc., Box 7304, Pittsburgh, Pa. 15213 / 412-621-7557 / *C 67
Statistical consulting and processing; test scoring, processing; test development / Sv Co / S 3 / E 63
- Perspective, Inc., 4400 7th Ave. So., Seattle, Wash. 98108 / 206-MA4-7800 / *C 66
The Illustromat "1100", a computer-directed graphics instrument whose function is to produce visually and mechanically accurate perspective drawings from any viewing distance and angle; it makes mechanically accurate axonometric drawings or projections from orthographic prints / S 19 / E 53 (Inc.)
- Petty Laboratories Inc., (Div. of Petty Geophysical Engineering Co.), P.O. Drawer 2061, San Antonio, Tex. 78206 / 512-CA6-1393 / *C 67
Consulting and computing services. Equipment includes CDC 3200-32K with Convolver, 2-Disc-Paks, 1-21T Transport, 1-9T Transport, 4-7T Transport / Sv / S 100 / E 25
- Philbrick Researches, Inc., 34 Allied Drive at Rte. 128, Dedham, Mass. 02026 / 617-329-1600 / *C 66
Analog computers, operational amplifiers, non-linear transconductors, power supplies / S 220 / E 46
- Philco Corp., Communications & Electronics Div., 3900 Welsh Rd., Willow Grove, Pa. 19090 / 215-OL9-7700 / *C 66
Philco 2000, Philco 1000, Philco 3100 process controller, Philco 1700 message and data switching system, Philco general purpose print/reader, ZIP-code readers, mass storage systems, peripheral equipment, displays, Philco 7100 plant monitor system, computer service bureau / S 5000 / E ?
- Philco Corp., (Subsidiary of Ford Motor Co.), Lansdale Div., Church Rd., Lansdale, Pa. 19446 / 215-855-4681 / *C 66
Integrated circuits; microwave components; diodes (switching, mixer, pin, backward, tunnel); infrared components; microwave devices and components / S 1500 / E 66
- Philco-Ford Corp., (Div. of Ford Motor Co.), 3900 Welsh Rd., Willow Grove, Pa. 19008 / 215-OL9-7700 / *C 67
General purpose computers; comm. switching systems; industrial controls; optical scanners; service bureau facilities / Eq Sv Ti Co / S 4000 / E 1898
- Philips Electronic Instruments, 750 S. Fulton Ave., Mt. Vernon, N.Y. 10550 / 914-M04-4500 / *C 65
X-ray diffractometers, spectrographs, cameras, detectors, industrial radiographic equipment, X-ray, electron microscopes, gauges, process control instrumentation, electron probe micro-analyzer, automatic X-ray spectrometer which may be linked with computers to read directly in any prescribed units of measurement / S 350 / E 42
- Photocircuits Corp., 31 Sea Cliff Ave., Glen Cove, N.Y. 11542 / 516-OR6-8000 / *C 66
Tape readers and spoolers, militarized tape reader / S 450 / E 51
- Photo Data, Inc., 601 G St., N.W., Washington, D.C. 20001 / 202-ST3-6245 / *C 67
- IBM 1130 with punched perforated tape and/or card input and output; primarily programmed for type setting, hot metal, or photo composition. Mergentahaller Linofilm Quick, TTs tape perforators; Foto-list sequential card system. Available for type setting or service bureau operations / Sv Ti / S 65 / E 61
- Photomechanisms, Inc., 15 Stepar Place, Huntington Sta., N.Y. 11746 / 516-HA3-4411 / *C 66
Photographic computer input-output equipment, hard copy generating systems on and off-line utilizing rapidly processed silver halide films and paper and electrostatic papers / S 55 / E 52
- Photon, Inc., 355 Middlesex Ave., Wilmington, Mass. 01887 / 617-933-7000 / *C 66
Computer-driven phototype setting machines, photographic computer printers, tape merger machines / S 300 / E 40
- Pickering & Co., Inc., Sunnyside Blvd., Plainview, N.Y. 11803 / 212-OV1-0200 / *C 66
Magnetic drum heads / S 160 / E 46
- The Pioneer Electric & Research Corp., (Div. of Penn Controls), 743 Circle Ave., Forest Park, Ill. 60130 / 312-771-8242 / *C 67
Photoelectric cells and tachometers, data interface system converters, transmission aids and EDP support equipment / Eq / S ? / E 43
- Philip C. Pipher Associates, Inc., 1000 16th St., N.W., Washington, D.C. 20036 / 202-659-2055 / *C 67
Consulting and data processing services / Sv Ti / S 10 / E 64
- Pivan Engineering Co., 3535 West Peterson Ave., Chicago, Ill. 60645 / 312-539-4838 / *C 67
Analog, digital and hybrids; computing systems; accessories include paper tape, readers and perforators, magnetic tape, read/write, incremental and high speed; printers; converters; test equipment, digital voltmeters, counters, graphic recorders, time interval meters; pulse generators, components, amplifiers, digital logic modules, power supplies, voltage regulators, telemetry scanners / Eq / S 33 / E ?
- Planning Research Corp., 1100 Glendon Ave., Los Angeles, Cal. 90024 / 213-479-7725 / *C 67
Analysis, design, and implementation of computer software systems: information flow, systems analysis, technical audit; compilers, master control systems, information processing, utility programs; scientific programming, cartographic data processing, biomedical data processing, simulation and gaming, command and control, intelligence, logistics, management information systems, information storage and retrieval; real-time systems, automation of brokerage back-office accounting; educational data processing; computer engineering / Sv / S 800 / E 54
- Potter Instrument Co., Inc., 151 Sunnyside Blvd., Plainview, L.I., N.Y. 11803 / 516-681-3200 / *C 67
Manufacturers of electronic peripheral equipment for the data processing industry, and machine (measuring) equipment for the machine and tool industry. Service to Potter machines and systems readily available throughout U.S. and Canada, and most parts of Europe / Eq Co Le / S 750 / E 42
- Precision Instrument Co., 3170 Porter Dr.,

Roster of Organizations

- Palo Alto, Cal. 94304 / 415-321-5615 / *C 67
 Digital incremental magnetic tape recorders / S 300 / E 58
- Preferred Tabulating Service Inc., 114 East 28th St., New York, N.Y. 10016 / 212-MU5-7717 / *C 67
 Key punch service bureau; 026 key punches and key verifiers - IBM / Sv / S 17 / E 64
- Prestoseal Mfg. Corp., 37-12 108th St., Corona, N.Y. 11368 / 212-IL7-5566 / *C 66
 Splicer for punched paper tape, 5-8 channel / S 50 / E 47
- Product Planning Inc., 10 Babson Park Ave., Babson Park, Mass. 02157 / 617-235-2900 / *C 67
 Product planning studies; market surveys; diversification studies; long range planning / Sv / S 8 / E 62
- Profimatics, Inc., 7060 Owensmouth Ave., Canoga Park, Cal. 91303 / 213-883-6530 / *C 67
 Consulting services relative to industrial process control / Sv Ti / S 8 / E 65
- Programmatics Inc., 12011 San Vicente Blvd., Los Angeles, Cal. 90049 / 213-476-1956 / *C 67
 Systems analysis and design, feasibility studies, management control systems, systems programming, business and scientific applications / Sv / S 28 / E 63
- Programming & Systems, Inc., 33 West 42 St., New York, N.Y. 10036 / 212-LW4-0530 / *C 67
 EDP education and service; leasing / Sv Ti Co Le / S 75 / E 59
- Programming & Systems Institute, (Div. of Programming & Systems, Inc.), 33 West 42 St., New York, N.Y. 10036 / 212-LW4-0530 / *C 67
 Computing, consulting and leasing services. Instruction in computing and programming / Sv Co Le / S 50 / E 59
- Programming Methods Inc., 51 Madison Ave., New York, N.Y. 10006 / - / *C 67
 Computer application consulting services / Sv Co Ti / S 75 / E 65
- Programming Research, Inc., 6842 Van Nuys Blvd., Van Nuys, Cal. 91405 / 213-989-2244 / *C 67
 Multiprogramming as applied to on-line video consoles and message switching, specializing in software acceptance tests and integrated checkout planning; consulting in systems analysis and design of executive systems, software acceptance tests, business applications-COBOL emphasis, data reduction for all Mariner shots & OSO / Sv / S 6 / E 66
- Programming Services, Inc., 18455 Burbank Blvd., Tarzana, Cal. 91356 / 213-881-1672 / *C 67
 Computer programming for: process control, information storage and retrieval, standard software (assemblers, compilers, etc.), commercial applications, engineering and scientific applications / Sv / S 45 / E 65
- Protolab Extractors, 295 Polaris Ave., Mountain View, Cal. 94040 / 415-961-8033 / *C 67
 Printed circuit card extractors for computers and data handling systems (these units are specified in with unit as an OEM component and delivered to customer as part of system / Eq / S 20 / E ?
- Q**
- Quality Programming Inc., 114 S. Canal St., Chicago, Ill. 60606 / 312-782-0305 / *C 67
 Systems and programming services / Sv Co / S 20 / E 66
- Quidar Electronics Inc., 60 Fadem Rd., Springfield, N.J. 07081 / 201-379-7400 / *C 67
 Computer interface systems, computer data logging systems, communication amplifiers, AM and FS tone equipment used in telemetering systems, analog and digital telemetering systems, computer alarm systems and scanners / Eq / S 200 / E 60
- R**
- Raleigh School of Data Processing, Inc., 334 South Salisbury St., Raleigh, N.C. 27601 / 919-834-1811; 834-2764 / *C 67
 Courses in IBM machines operation and wiring, accounting, computer programming, systems and procedures, key punch, business English / Eq / S 8 / E 59
- Randolph Computer Corp., 200 Park Ave., New York, N.Y. 10017 / 212-986-4722 / *C 67
 Computer service specialists in the leasing of IBM 360 equipment and the operation of a service bureau in the Portland, Ore. area. Also, offers specialized educational equipment for training purposes in EDP. Company has developed specialized proprietary software programs such as "payroll", "banking packages" and a "hospital accounting" system / Eq Sv Ti Co Le / S 100 / E 65
- Randomatic Data Systems Inc., 344 W. State St., Trenton, N.J. 08618 / 609-695-3447 / *C 67
 Random access information retrieval system for random storage and instant retrieval of card records of many types; system is an in-file sorter, selects meaningful groups instantly by descriptive codes / Eq / S 25 / E 63
- Hub S. Ratliff, Data Processing Consultants, P.O. Box 22487, Houston, Tex. 77027 / 713-NA2-1192 / *C 67
 Systems and applications; contract programming; equipment recommendation and selection; installation management / Sv Co / S 6 / E 66
- Raytheon Co., Communication & Data Processing Operation, 1415 Providence Hwy., Norwood, Mass. 02062 / 617-762-6700 / *C 67
 Computer communication terminals utilizing wide band microwave (channel to channel link) / S 1000 / E 23
- Raytheon Co., Semiconductor Operation, 350 Ellis St., Mountain View, Cal. 94040 / 415-968-9211 / *C 67
 Amplifiers: differential, linear, operational. IC amplifiers, digital, linear, registers, arrays. Silicon diodes, silicon transistors, field effect transistors, diode arrays, logic circuits / S 1000 / E 61
- Raytheon Computer, (Div. of Raytheon Co.), 2700 So. Fairview St., Santa Ana, Cal. 92704 / 714-546-7160 / *C 67
 Digital computers: 250, 440, 520 general purpose computers, associated peripheral equipment, TRICE digital differential analyzer, special purpose computers. Instrumentation components: amplifiers, commutators, multiverters, multiplexers, analog-to-digital converters, digital-to-analog converters, digital logic modules. Memory: 300 and 900 Nanosecond, BIAx stacks, elements / Eq / S 467 / E ?
- RCA Electronic Components and Devices Div., 415 South 5th St., Harrison, N.J. 07029 / 201-485-3900 / *C 67
 Electron tubes, semiconductor devices, integrated circuits, test and measuring equipment, dry batteries, microphones / S ? / E ?
- RCA Electronic Data Processing, Cherry Hill, Camden, N.J. 08108 / 609-W03-8000 / *C 65
 Full range of digital computers, components, supplies and services / S ? / E 55
- Recognition Equipment Inc., 1500 W. Mockingbird Lane, Dallas, Tex. 75235 / 214-637-2210 / *C 67
 Produces Electronic Retin[®] Computing Reader, an optical character recognition system that processes data for input to large-scale electronic data processing systems; also provides systems analysis, forms design, programming, other supporting services / Eq / S 550 / E 61
- Record Control Systems, P.O. Box 2281, No. Side Post Office, Youngstown, O. 44504 / 216-746-2567 / *C 67
 Record keeping and filing systems; equipment and supplies; magnetic schedule systems (visual control boards); paper tape; systems and accessories; computer program panels, tape cleaners, accessories; forms, paperwork flow, analysis and design / Sv / S 1 / E 62
- Record Media Products, 109 W. 9th St., Los Angeles, Cal. 90015 / 213-625-2243 / *C 67
 Data processing consultants in printer ribbon applications; sellers of ribbons and magnetic computer tape / Sv / S ? / E 61
- Record Processing Corp., 111 Fourth Ave., New York, N.Y. 10003 / 212-982-0711 / *C 67
 Univac card computers used in commercial accounting applications: payrolls, billing, inventory, accounts receivable, etc. / Sv / S 30 / E 63
- Records Systems, Inc., 3661 Brainerd Rd., Chattanooga, Tenn. 37411 / 615-698-8089 / *C 67
 Distributes Mac Panel computer tape, control panels, accessories; W. H. Brady pinfeed labels; Monarch Metal steel files, sorting racks, accessories, filing supplies, binders; Remington Rand fire-proof files for cards, tape, disks / S 6 / E 65
- Redcor Corp., 7760 Deering Ave., Canoga Park, Cal. 91304 / 213-348-5892 / *C 65
 Data acquisition system; A-D and D-A converters; digital logic modules / S 220 / E 56
- Reeves Instrument Co., 100 East Gate Blvd., Garden City, N.Y. 11532 / 516-PI6-8100 / *C 66
 Analog computer, capable of expansion to powerful hybrid facility; computation center for scientific analysis and simulation / S 1150 / E 43
- Reeves Soundcraft, (Div. of Reeves Industries, Inc.), 15 Great Pasture Rd., Danbury, Conn. 06810 / 203-743-7601 / *C 67
 Manufactures magnetic recording tape / S 300 / E 50
- Reiland, Page & Associates, Inc., 1521 E. Broad St., Columbus, O. 43205 / 614-258-3903 / *C 67
 Data processing systems design, consulting, contract programming / Sv / S 12 / E 66
- Reliable Systems, Inc., 475 Fifth Ave., New York, N.Y. 10017 / 212-689-4190 / *C 67
 Management, computer consulting:

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- systems design, programming; computer training courses / Sv Co / S 35 / E 66
- Remex Electronics, (Div. of Ex-Cell-0 Corp.), 5250 W. El Segundo Blvd., Hawthorne, Cal. 90250 / 213-772-5321 / *C 67
- Photocell punched tape readers and spoolers, speeds to 1000 char/sec; BLOC-STOR for storage of tape information in two line increments to 80 lines; punched tape transports. All models uni- and bidirectional. Automatic control systems / Le / S 125 / E 60
- Research Calculations, Inc., 200 Boylston St., Newton, Mass. 02167 / 617-969-5700 / *C 67
- Automatic data processing services: computer processing (Honeywell 200), plotting, analog to digital conversion, format conversion / Sv Ti / S 110 / E 50
- Rese Engineering Inc., A & Courtland Sts., Philadelphia, Pa. 19120 / 215-GL5-9000 / *C 66
- Magnetic core memories; special digital systems / S 40 / E 52
- Rixon Electronics, Inc., 2120 Industrial Pkwy., Montgomery Industrial Pk., Silver Spring, Md. 20904 / 301-622-2121 / *C 67
- Data transmission modems for data communication from 150 to 4800 bits per second; computer input unit; and equipment for data security / Eq / S 250 / E 57
- Robertshaw Controls Co., Aeronautical & Instrument Div., Santa Ana Freeway @ Euclid St., Anaheim, Cal. 92603 / 714-535-8151 / *C 66
- Manufacturers of process control instrumentation including direct digital devices, recorders, controllers, transmitters, level measurement, and flow integrators / S 300 / E 50
- Robins Data Devices, Inc., 15-58 127 St., Flushing, N.Y. 11356 / 212-445-7200 / *C 67
- Accessories for EDP equipment / S 100 / E 53
- Rotron Mfg. Co., Inc., Hasbrouck Lane, Woodstock, N.Y. 12498 / 914-679-2401 / *C 66
- Cooling devices and high pressure/vacuum air sources specifically designed for the computer industry... Muffin Fan, Sprite, Skipper, Centrimax, Spiral, Duplex Spiral, Feather Fan, etc. / S 550 / E 47
- Roytron, (Div. of Litton Industries), 165 Dexter Ave., W. Hartford, Conn. 06110 / 203-278-2010 / *C 67
- Full line of paper tape punches, readers (20cps, 50cps, 75cps) with/without electronics; verify, duplicate, regeneration systems / Eq / S 60 / E 64
- Russell Business Forms Inc., 16647 Airport Rd., Lansing, Mich. 48917 / 517-372-1530 / *C 67
- Design, sale of all types of forms for computer, data processing equipment / S 3 / E 64
- S**
- Sage Electronics Corp., 1212 Pittsford-Victor Rd., Pittsford, N.Y. 14534 / 716-LU6-8010 / *C 66
- Resistors / S 170 / E 48
- SAID, Inc., 645 Oakley Ave., Lynchburg, Va. 24501; 1243 W. Broad St., Falls Church, Va. 22046 / 703-845-8036; 703-532-9190 / *C 67
- Systems analysis, management consulting, feasibility studies, programming, computer processing, EAM processing, keypunch, development of automated accounting systems / Sv / S 100 / E 62
- Sanders Associates, Inc., 95 Canal St., Nashua, N.H. 03060 / 603-883-3321 / *C 65
- Computer driven information displays, character generators, digital logic circuitry and special computers / S 3000 / E 51
- Scantlin Electronics, Inc., 60 Broad St., New York, N.Y. 10004 / 212-DI4-0400 / *C 67
- Real-time financial (stock market) data through private communications network / Sv Ti / S ? / E ?
- Scientific Control Corp., 14008 Distribution Way, Dallas, Tex. 75234 / 214-241-2111 / *C 67
- General purpose digital computers (small, medium size); data acquisition equipment, related peripheral equipment / Eq / S 85 / E 64
- Scientific Data Systems, Inc., 1649 Seventeenth St., Santa Monica, Cal. 90404 / 213-871-0960 / *C 67
- Products: general-purpose digital computers; special-purpose and hybrid computers; computer systems for scientific, industrial, business applications; computer peripheral equipment; analog, digital system components, modules. Services: systems engineering; computer maintenance (to users); training courses in computer maintenance, programming / Eq Co / S 2900 / E 61
- Sci-Tek Computer Center Inc., 1707 Gilpin Ave., Wilmington, Del. 19806 / 302-652-3967 / *C 67
- Univac 1107; provide scientific E.D.P. service / Sv / S 25 / E 67
- Seaelectro Corp., 225 Hoyt St., Mamaroneck, N.Y. 10543 / 914-698-5600 / *C 67
- Computer components, automatic controls, memory systems / S 600 / E 57
- Seismograph Service Corp., Box 1590, (6200 E. 41st St.), Tulsa, Okla. 74102 / 918-NA7-3330 / *C 65
- Optical analog computer / S 500 Tulsa); 1600 (world-wide) / E 31
- Selective Data Processing, 870 Market St., San Francisco, Cal. 94102 / 415-421-0450 / *C 67
- Key punch and key verifying center; total of 187 machines / S 150 / E 64
- Serendipity Associates, 9860 Cozycroft Ave., Chatsworth, Cal. 91311 / 213-341-0033 / *C 67
- System simulation models, data management systems, information retrieval systems, design of solution algorithms; capabilities include programming language, system design, flow charting, programming, documentation, personnel training / Sv Co / S 64 / E 62
- The Service Bureau Corp. (Div. of IBM), 1350 Ave. of the Americas, New York, N.Y. 10019 / 212-262-5000 / *C 67
- Computer services: data processing, programming, systems analysis, machine services, for commercial and scientific problems. Use IBM System 360s, 1401, 1401G, 1460, 7094 computers, plus data plotting, unit record and MICR automatic check handling equipment / Sv Co / S 2500 / E 57
- Shieldata of W.N.Y. Inc., 1914 Colvin Ave., Tonawanda, N.Y. 14150 / 716-837-5230 / *C 67
- Computer magnetic tape certification, rehabilitation and recertification services / S 6 / E 66
- Millard D. Shriver Co. Inc., 9231 E. Whitmore St., El Monte, Cal. 91771 / 213-280-8992 / *C 67
- Engineering applications programming, design documentation, automation programming / Sv Co / S 10-12 / E 59
- S-I Electronics, Inc., 103 Park Ave., Nutley, N.J. 07110 / 201-667-0055 / *C 66
- Digital magnetic tape transports, digital magnetic tape transport read and write heads / S 55 / E 60
- Sigma Business College & School of Business Machines, 25 Branford Place, Newark, N.J. 07102 / 201-622-6666 / *C 67
- Training in computing, programming and systems using IBM 1401, 360 and unit record equipment / Co / S 70 / E 47
- Sigma Instruments, Inc., 170 Pearl St., Braintree, Mass. 02184 / - / *C 65
- Cyclonome, single phase, high torque, synchronous stepping motor / S ? / E ?
- Sigma Processing Inc. (Div. of A & G Engineering), 10130 Hwy 55, Minneapolis, Minn. 55427 / 612-544-4611 / *C 67
- Data processing service bureau providing services for clients of A & G engineering / Sv Co / S 10 / E 62
- Simulators, Inc., 3611 Commercial Ave., Northbrook, Ill. 60062 / 312-272-6310 / *C 67
- General purpose analog computers, associated electronic computing elements / Eq / S 35 / E 65
- Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge, Mass. 02139 / 617-864-7910 / *C 67
- Offer commercial computer services. Equipment includes CDC 6400 with 1200 CPM card reader; two 1000 LPM printers; 250 CPM card punch; paper tape read/punch; six high-speed tape transports, 75 million character disk, 65K storage / Sv / S 46 / E 66
- Société d'Electronique & D'Automatisme, 17-19, rue du Moulin des Bruyères, BP Nollin, 92 Courbevoie, France / 333-41.20 / *C 66
- SEA 3900, SEA 4000, CINA, CAB 1500 (digital), NADAC 20, NADAC 100 (analog); peripheral equipment (highspeed printers, tape perforators, optical tape readers, magnetic units); analogical modules, various components / S 900 / E 48
- Sooner Business Systems, 1100 Northeast 36th St., Oklahoma City, Okla. 73111 / 405-232-3026 / *C 67
- Diebold information retrieval systems: power files, super elevator files, rotary filing cabinets of all sizes; Data Safes for microfilm and magnetically inscribed media; DANS numbering system; VRE visible record and tape handling equipment; forms, guides; gates noise reducers for business machines; Dresser Products tape handling equipment / Eq Sv Le / S 2 / E 60
- Soroban Engineering, Inc., P.O. Box 1690, Melbourne, Fla. 32901 / 305-723-7221 / *C 67
- Card readers, punches, interpreters; tape punches, readers, printers; computer, data processing peripherals including keyboards, printers; data communications terminals / Eq Co / S 300 / E 53
- Southern Computer Service, 280 T.V. Rd., P.O. Box 100, Dothan, Ala. 36301 / 205-794-3166 / *C 67
- Service bureau / Sv / S 6 / E 62
- Southwest Computing Service, Inc., 2300

Roster of Organizations

- N. Central Ave., Phoenix, Ariz. 85004 / 602-258-3821 / *C 67
Service bureau serving business and civil engineering utilizing System 360 and Univac 1107-08 equipment / Sv / S 10 / E 57
- Southwestern Computing Service, Inc., 1631 So. Boston Ave., Tulsa, Okla. 74119 / 918-587-8146 / *C 67
Data processing services / Sv / S 20 / E 53
- Spear, Inc., 335 Bear Hill Rd., Waltham, Mass. 02154 / 617-899-4800 / *C 67
Digital computers, digital data acquisition systems / Eq Sv / S 25 / E 64
- Special Studies, Inc., 122 East 42nd St., New York, N.Y. 10017 / 212-697-9090 / *C 67
Consulting services: computer applications in science, business; operations research; management science. Education through a subsidiary: seminars on computer applications in various fields; programming courses / Sv Co / S 6 / E 65
- Sperry Farragut Co., Div. of Sperry Rand Corp., Bristol, Tenn. 37622 / 615-968-1151 / *C 65
Amplifiers; packaged computer circuits, plug-in circuits; printed circuits; computer type coils; analog computers; computer components; fire control equipment; systems engineering / S 1000 / E 51
- Sperry Gyroscope Co., Div. Sperry Rand Corp., Great Neck, N.Y. 11020 / 516-LR4-1270 / *C 66
Small microcircuited real-time general purpose computers, associated analog to digital and digital to analog converters; microcircuited CRT display consoles / S 8000 / E ?
- Standard Computer Corp., 633 E. Young St., Santa Ana, Cal. 92705 / 714-540-2464 / *C 67
Standard IC-6000 with exclusive interpretive technique called MINIFLOW, programs run directly from tapes and by the machine it emulates using IBSYS, FORTRAN, COBOL or machine language with no modifications / Eq / S ? / E 65
- Standard Programs Corp., 342 Madison Ave., New York, N.Y. 10017 / 212-986-9250 / *C 67
Standardized programs for manufacturing control / Sv Co / S 5 / E 66
- The Standard Register Co., Dayton, O. 45401 / 513-223-6181 / *C 67
Continuous and unit set forms; continuous, and unit set cards; forms handling and data collection equipment / S 4200 / E 12
- Standards, Inc., 6434 N. Central Ave., Chicago, Ill. 60646 / 312-774-8787 / *C 67
Master deck data (manufacturing information) on processing, methods, standards / Sv Co / S 12 / E 50
- Statistical Computing Center, Inc., 2501 No. Stiles, Oklahoma City, Okla. 73105 / 405-525-0940 / *C 67
On-line in real-time services: financial including savings and loan, credit union and mortgage account servicing; distribution including billing, inventory control, accounts receivable, related statistical / Sv Ti / S 30 / E 65
- Statistical Service Corp., 714 Grand Ave., Shreveport, La. 71110 / 318-424-4475 / *C 67
IBM unit record sales, rental; complete service center using IBM unit record, 10005 Univac / Eq Sv Ti Le / S 50 / E 56
- Statistical Tabulating Corp., 104 S. Michigan, Chicago, Ill. 60603 / 312-DE2-2484 / *C 66
Nine data-processing and computer service centers containing IBM 1400 series card and tape systems, Systems/360, and Honeywell H200 tape systems - plus peripheral equipment. Administrative management, scientific management, engineering and general data processing, programming, systems analysis, consultation and temporary personnel. / Sv / S ? / E ?
- Theodore Stein, 400 Madison Ave., New York, N.Y. 10017 / 212-421-1434 / *C 67
Data processing consultants / Sv / S 3 / E 59
- Stellarmetrics, Inc., 416 E. Cota St., Santa Barbara, Cal. 93102 / 805-963-3566 / *C 67
Telemetry systems and processing equipment including PAM/PDM and PCM; all designed for interface with and capable of direct entry to digital computers / S 85 / E 61
- R. Edward Stemm, Inc., 17 W. 480 Lake St., Addison, Ill. 60101 / 312-279-2440 / *C 67
Engineering sales representatives for manufacturers of digital computers, computer controlled information displays, EDP peripheral equipment; controls, transducers; counters / Eq / S 9 / E 33
- Stevens-Nelsen Data Processing Center, N. 711 Lincoln, Spokane, Wash. 99201 / 509-327-1558 / *C 67
General business data processing services and consulting; special package program for small hospital management / Sv / S 15 / E 62
- Straza Industries, 790 Greenfield Dr., El Cajon, Cal. 92021 / 714-442-3451 / *C 67
Printer/plotter, symbol generators, line generators, microfilm recording equipment, computer output equipments / S 100 / E 58
- Stromberg-Carlson Corp., Data Products Div. (Div. of General Dynamics Corp.), P.O. Box 2449, 1895 Hancock St., San Diego, Cal. 92112 / 714-298-8331 / *C 67
High-speed microfilm non-impact printers: S-C 4360 (30,000 char/sec.), S-C 4400 (62,500 char/sec.), S-C 4440 (90,000 char/sec.). High-speed microfilm plotter-printers: S-C 4460 (90,000 char/sec plus business plotting), S-C 4060 (90,000 char/sec.); high-speed microfilm handling equipment / Eq / S 500 / E 55
- Sturgis Newport Business Forms, Inc. (Div. of Litton Industries), P.O. Box 31, Sturgis, Mich. 49091 / 616-651-2301 / *C 67
Business forms, data processing forms, magnetic ink imprinting / S 950 / E 12
- Suburban Data Processing Center, Inc. (Div. of Computer Applications, Inc.), 387 Passaic Ave., Fairfield, N.J. 07006 / 201-228-4700 / *C 67
Services on 1401 tape system / Sv / S 40 / E 63
- Superior Data Processing Service, 5429 E. Beverly Blvd., Los Angeles, Cal. 90022 / 213-685-5470 / *C 67
Service bureau: IBM 1401, IBM 360-30, sorters, collators, reproducers, etc; Services: keypunching, consulting (software, system analysis), generating reports on computers, etc. / Eq Sv Co Le Ti / S 70 / E 63
- Sylvania Electronic Systems, 40 Sylvan Rd., Waltham, Mass. 02154 / 617-894-8444 / *C 65
Special purpose data processing system / S 10,000 / E 05
- System Computers Ltd., Fossway, Newcastle-on-Tyne. 6, Northumberland, Great Britain (Div. of International Research & Development Co. Ltd.) / Newcastle-on-Tyne 650411 / *C 67
6 amplifier analog teaching machines, logic teaching machines; 30, 60 amplifier (basic) fully transistorized general purpose analog computers; larger capacity machines custom built; option of logic control / Eq Ti Co Le / S 120 / E 64
- System Development Corp., 2500 Colorado Ave., Santa Monica, Cal. 90406 / 212-393-9411 / *C 67
Computing services; courses in programming, systems / Sv Co / S 3300 / E 58
- Systems Sciences, Inc., 4905 Del Ray Ave., Bethesda, Md. 20014 / 301-657-4448 / *C 67
Operations research; mathematical models, simulations; systems analysis; programming services; management consulting services / Ti Sv / S 18 / E 64
- Systemat, 1107D Spring St., Silver Spring, Md. 20910 / 301-587-3650 / *C 67
Placement of professional programming personnel / Sv / S 10 / E 61
- Systematic Services, Inc., 631 So. Pickett St., Alexandria, Va. 22304 / 703-354-7327 / *C 67
Consulting and computing services. System 360, model 20, sorter, key-punches, verifiers, 1401 & 360/20 programming & system design / Sv Ti / S 22 / E 65
- Systematics of Missouri, Inc., 3232 Olive St., St. Louis, Mo. 63103 / 314-531-3578 / *C 67
Portable card counter, Model CC-350; small, portable, tab card counting device. Hopper capacity 500 cards; counter capacity 9999, speed 300 CMP / S 12 / E 60
- Systems Data Processing Co., 920 23rd St., Sacramento, Cal. 95816 / 916-444-0152 / *C 67
Full range of computer, programming, systems design for business; key punching services. Kimball tag applications / Sv / S ? / E 58
- Systems & Electronics, Inc., 493 Market St., Paterson, N.J. 07501 / 201-271-2237 / *C 67
Data processing service: IBM 1401 and System 360 with related IBM EAM equipment / Sv / S 5-10 / E 62
- Systems Engineering Laboratories, Inc., P.O. Box 9148, Ft. Lauderdale, Fla. 33310 / 305-587-2900 / *C 67
Digital computers, special purpose computers, digital data acquisition / Eq / S 380 / E 61
- Systems Management Services, Inc., 201 Main St., Houston, Tex. 77002 / 713-224-7110 / *C 67
Consulting and computing services. Equipment includes NCR computer / Sv / S 6 / E 61
- Systems Programming, Inc., 175 Main St., White Plains, N.Y. 10601 / 914-428-0494 / *C 67
Programming, systems developmental services; experienced in communications network analyses, message & traffic analyses, all phases of insurance applications programming, and language translators / Sv / S 7 / E 64
- Systems Programming Services Inc., 3550 N.W. 58 St., Miami, Fla. 33143 / 305-635-9455 / *C 67

Roster of Organizations

- Services: payrolls, accounts receivable, etc. / Sv / S 22 / E 53
- Systems Science Corp., 1104 Spring St., Silver Spring, Md., 400 E. Third St., Bloomington, Ind. 47403 / 301-779-5500 (Md.); 812-332-1720 (Ind.) / *C 66
- Specialists in real time, on-line automation of police activities; perform feasibility studies; development of hardware specifications; systems and applications; software design and programming / S 15 / E 61
- Systron-Donner Corp., 888 Galindo St., Concord, Cal. 94520 / 415-682-6161 / *C 67
- Portable, desk top analog computers for education and research with \pm 100 volt, all solid state design, modular computing plug-ins, built-in digital logic and REP-OP / Eq Co Le / S 800 / E 57
- ### T
- TAB Products Co., 550 Montgomery St., P.O. Box 2630, San Francisco, Cal. 94126 / 415-981-6160 / *C 67
- DP auxiliary equipment, computer room equipment; datafinder, an electronic device for speeding card punch machine in-put; forms handling machines, lateral shelf filing equipment, spacefinder filing systems, and unit spacefinder filing systems / S 100 / E 50
- TAB Products of Ill. (Div. of TAB Products Co.), 5151 N. Harlem, Chicago, Ill. 60656 / 312-631-2515 / *C 67
- DP auxiliary equipment, card files, etc., forms handling machines / Eq / S 400 / E 13
- Tally Corp., 1310 Mercer St., Seattle, Wash. 98109 / 206-624-0760 / *C 67
- Paper tape readers (mechanical and photoelectric) and perforators; magnetic tape digital recorders and data terminals; data transmitters and receivers (paper, card, magnetic) / Eq Le / S 500 / E 48
- Tape Center Ltd., 1033 South Blvd., Oak Park, Ill. 60302 / 312-386-0433 / *C 67
- Friden flexowriters, tape/edge card punching / S 14 / E 61
- Tape Tabulating Inc., 19 Union Sq. W., New York, N.Y. 10003 / 212-989-6766 / *C 67
- Computing, consulting, leasing, and financial services; card to paper tape, magnetic tape to paper tape, paper tape to card, paper tape to magnetic tape converters; paper tape readers, punches / Sv Le / S 10 / E 61
- Technical Advisors, Inc., 104 W. Huron St., Ann Arbor, Mich. 48108 / 313-722-5010 / *C 67
- Electronic computing and automatic drafting services to engineers and surveyors, specializing in surveying and subdivision geometry; Tech-Mac, a multiple-access, time-sharing service to engineers and surveyors / Eq Sv Ti Co / S 15 / E 54
- Technical Computing Center, 515 Market St., San Francisco, Cal. 94105 / 415-362-2375 / *C 67
- Engineering and commercial data processing and programming; equipment includes System 360, Model 30, 65K; 2 disks, 2 tapes, card reader/punch, printer / Sv / S 8-9 / E 61
- Technical Information Processing, 1503 N. Washington, Wheaton, Ill. 60187 / 312-668-6131 / *C 67
- Technical programming in areas of engineering design, mathematics and statistics / Sv / S 2 / E ?
- Technical Measurement Corp., 441 Washington Ave., North Haven, Conn. 06473 / 203-239-2501 / *C 67
- Signal averaging computers, correlation computers, pulse height analyzer systems incorporating general purpose digital computers, magnetic tape recorders / Eq / S 400 / E 55
- Technical Measurement Corp., Telemetrics Div., 2830 S. Fairview St., Santa Ana, Cal. 92704 / 714-546-4500 / *C 66
- Automatic telemetry processors, telemetry systems and equipment, input/output devices, buffers, synchronizers, simulators / S 240 / E 59 (Telemetrics Div.)
- Technical Operations, Inc., South Ave., Burlington, Mass. 01803 / 617-272-2000 / *C 67
- Operations research, systems analysis, gaming and simulation, advanced computer programming, optical scanning devices / Sv Co / S 700 / E 51
- Technitrol Inc., 1952 E. Allegheny Ave., Philadelphia, Pa. 19134 / 215-6A6-9105 / *C 66
- Component parts - pulse transformers, electro-magnetic delay lines, shift registers / S 1100 / E 1947
- Tech Serv, Inc., 5451 Holland Dr., Beltsville, Md. 20705 / 301-474-2900 / *C 67
- Data recording equipment, paper tape readers, punches, computer circuits / Eq / S 35 / E 60
- Tekform, Inc., 2780 Coronado St., Anaheim, Cal. 92805 / 714-630-2340 / *C 67
- Hermetic glass to metal sealing; headers, terminals, connectors, micro-circuit packages, flat pack cases, semi-conductor window cans, and precision metal stamping / S 50 / E 56
- TELAutograph Corp., 8700 Bellanca Ave., Los Angeles, Cal. 90045 / 213-OR8-4756 / *C 65
- Graphic communications systems/ equipment for transmission of handwriting (Instantaneous) or facsimile (page-a-minute) / S 250 / E 1888
- Telecheck Hawaii, Inc. (Div. of Telecheck International, Inc.), 1481 S. King St., Honolulu, Hawaii 96814 / 808-962-867 / *C 67
- On-line telephone inquiry service, real-time inquiry service to retail merchants, airlines, hotels, etc., to identify check cashers and credit card users. Also, accounts receivable, inventory control packages, CPM, PERT, statistical analysis service and engineering. Equipment includes H-200 20K computer, 5 #44KC tapes; 650 lpm printer, 1402 reader, COBOL Liberator / Eq Sv Ti Le / S 128 / E 63
- Telecomputations, Inc. (Div. of Systems Science Corp.), 1104 Spring St., Silver Spring, Md. 20910 / 301-587-4242 / *C 67
- Systems analysis, design and implementation; computer time sales, application and maintenance programming; customer job processing; delivery service; keypunch and verification; computer support services / Sv / S 60 / E 61
- Teletype Corp. (Div. of Western Electric), 5555 Touhy Ave., Skokie, Ill. 60076 / 312-676-1000 / *C 67
- Data communications equipment including page printers, paper tape punches and readers, high speed tape-to-tape equipment, automatic data switching systems / S 7000 / E 06
- Texas Instruments, Inc., Industrial Products Group, 3609 Buffalo Speedway, Houston, Tex. 77006 / 713-JA6-1411 / *C 66
- A-D and D-A converters; multiplexers; pulse generators; tape transports for recording digital data; data collection, processing and display systems optimized for digital seismic data handling / S 1000+ / E 30 (Parent company)
- Texas Instruments, Inc., Semiconductor Components Div., P.O. Box 5012, Dallas, Tex. 75222 / 214-AD5-3111 / *C 66
- Complete line of semiconductor devices including special computer diodes, transistor and integrated-circuit amplifiers, and military and industrial digital networks / S 25,000 / E 30
- Theta Instrument Corp., 22 Spielman Rd., Fairfield, N.J. 07006 / 201-227-1700 / *C 67
- Shaft encoder and related systems for interfacing with computers, card punches, and printers / Eq / S 100 / E 56
- Robert V Thoren Co., 11700 S. Western Ave., Chicago, Ill. 60643 / 312-779-4272 / *C 67
- Sales and service of paper tape, magnetic tape, card converting and transmission equipment / S 3 / E 57
- 3M Co., Instrument Dept., 12909 S. Cerise Ave., Hawthorne, Cal. 90250 / 213-772-5141 / *C 65
- 3 M-201 control computer systems, 3 M-110 data acquisition systems, 3 M-220 direct digital controls / S ? / E 63
- 3M Co., Instrument Products, 300 S. Lewis Rd., Camarillo, Cal. 93010 / 805-482-1911 / *C 67
- Scanners, switching matrices, analog to digital converters / S ? / E 59
- 3M Company, Paper Products Div., 2501 Hudson Rd., St. Paul, Minn. 55119 / 612-733-1110 / *C 67
- Carbonless paper for use in continuous forms for computer print-out / S ? / E ?
- 3M Co., Reverse-Mincom Div., 300 S. Lewis Rd., Camarillo, Cal. 93010 / 805-482-1911 / *C 67
- Asynchronous digital magnetic tape recorders. IBM compatible / S 500 / E 56
- Time Brokers, Inc., 485 5th Ave., New York, N.Y. 10017 / 212-867-5661 / *C 67
- Computer time brokerage, rental service for disk packs, keypunches and other peripheral equipment, magnetic tape cleaning and rehabilitation, sell and lease entire line of General Kinetics tape equipment / Sv / S 10 / E 65
- Time Share Corp., Lyme Rd., Box 301, Hanover, N.H. 03755 / 603-643-3640 / *C 67
- Computer programming and education services / Sv Ti Co / S 20 / E 66
- Tola Specialties, 554 W. Adams St., Chicago, Ill. 60606 / 312-782-8614 / *C 67
- DP binders for tabulating forms, unburst & burst forms, nylon posts & metal posts & rings, storage binders for tabulating forms / S 6 / E 46
- Toledo Technical College, 1189 W. Central Ave., Toledo, O. 43610 / 419-248-6264 / *C 67
- Consulting and programming services, systems engineering, courses in computing, programming, systems / Sv Co

Roster of Organizations

- / S 9 / E 55
Tolos Associates, 2440 Bancroft Way, Berkeley, Cal. 94704 / 415-459-1830 / *C 67
Consultation, information and library services. Literature research. Specialists in the field of information retrieval systems and library services / Sv / S 7 / E 64
- Towson Laboratories, Inc., 3500 Parkdale Ave., Baltimore, Md. 21211 / - / *C 67
A/D converters, synchro to digital converters, digital telemetry equipment / Eq / S 21 / E 59
- Trak Electronics Co., Inc., 59 Danbury Rd., Wilton, Conn. 06897 / 203-762-5521 / *C 66
Morse-to-teletypewriter code converters; DIGI-STORE, asynchronous magnetic tape read/write unit / S 95 / E 47
- Transistor Electronics Corp., Box 6191, Minneapolis, Minn. 55424 / 612-941-1100 / *C 67
Indicators, switch-indicators, digital readouts, keyboard systems, switches, information display, panels, CRT display systems. All are designed for discrete and integrated solid state systems / Eq / S 100 / E 58
- Transitel International Corp., 615 Winthers Ave., Paramus, N.J. 07642 / 201-262-8200 / *C 66
Solid state supervisory control and data acquisition systems / S 80 / E 58
- Transkrit Corp., 704 Broadway, New York, N.Y. 10003 / 212-OR3-2200 / *C 66
Continuous forms (spot carbonized), magnetic ink imprinting / S 100 / E 38
- Tri-Data, Inc., 3717 W. 50th St., Minneapolis, Minn. 55410 / 612-920-4111 / *C 67
DP consulting and programming, business service packages designed for computers / Sv / S 15 / E 64
- Trident Laboratories Inc., 2430 Penn. Ave. N.W., Washington, D.C. 20036 / 202-338-1161 / *C 67
System analyses, software design and programming / Sv Co / S 35 / E 62
- TRW Systems Group, 1 Space Park, Redondo Beach, Cal. 90278 / 213-679-8711 / *C 66
General purpose computers, digital data processors, special purpose computers, memory systems, design code and checkout of real time digital computer programs, SE and ID for all data systems applications / S 11,000 / E 54
- Tymshare Inc., 745 Distel Dr., Los Altos, Cal. 94022 / 415-961-0545 / *C 67
Computer time-sharing services on a SDS 940 computer / Eq Sv Ti Co / S 37 / E 65
- U**
- Uarco Inc., W. County Line Rd., Barrington, Ill. 60010 / 312-381-4030 / *C 65
All types of business forms and forms handling equipment / S 2700 / E 1894
- Ultronc Systems Corp., 7300 N. Crescent Blvd., Pennsauken, N.J. 08110 / - / *C 66
Data pumps, encoding keyboards, magnetic tape transmission terminals, character multiplex / S over 500 / E 60
- Unimation Inc., 16 Durant Ave., Bethel, Conn. 06801 / 203-744-1800 / *C 66
UNIMATE - industrial robot: teach-
- able material transfer machine, performs manual labor. Weight handling capacity of 75 lbs. / S 40 / E 62
- Union Switch & Signal Div. of Westinghouse Air Brake Co., Pittsburgh, Pa. 15218 / 412-242-5000 / *C 65
"Readall" readout instruments, miniature and sub-miniature relays, remote control systems for railroads and pipelines; control and communication systems for industry; remote controls for locomotives and vehicles / S 1500 / E 1881
- U.S. Dielectric, Inc., Box 136 P.P. Sta., 16 Fantasia Dr., Worcester, Mass. 01604 / 617-754-5316 / *C 67
Custom molded plastic electronic modules and shells / S 25 / E 61
- U.S. Magnetic Tape Co. (Div. of Wabash Magnetics, Inc.), 221 E. Main St., Huntley, Ill. 60142 / 312-669-5181 / *C 67
Magnetic digital computer tape / S 100 / E 63
- United States Motors Corp., 339 W. 20th Ave., Oshkosh, Wisc. 54901 / 414-231-4560 / *C 67
Engine generator sets, uninterrupted power sets, blowers, versa trailers / S 50 / E 1890
- U.S. Navy Marine Engineering Laboratory (Dept. of the Navy), Computer Div., Annapolis, Md. 21402 / 301-268-7711, Ext. 8514 / *C 67
Mathematical analysis and research; design, development and validation of mathematical models simulating complex naval shipboard machinery systems and auxiliary systems; design and development of management information systems; computer programming and DP services. Services available to government activities / Sv / S 25 / E 64
- U.S. Tabulating Binder Corp., 7207 Melvina Ave., Niles, Ill. 60648 / 312-647-9310 / *C 67
Binders, nylon post for marginal-punched records, indexes for bound marginal-punched records, binding machines for records on marginal-punched sheets / S ? / E 63
- UNIVAC Data Processing Centers (Div. of Sperry Rand Corp.), Main office at P.O. Box 8100, Philadelphia, Pa. 19101 / 215-646-9000 / *C 67
Commercial and scientific DP services utilizing UNIVAC 1108, 1107, 418, 1004 and 1005 in Atlanta, Buffalo, Chicago, Cleveland, Denver, Detroit, Houston, Kansas City, Los Angeles, Mineola, Minneapolis, N.Y. City, Philadelphia, Phoenix, Pittsburgh, Portland, San Francisco, Silver Spring and Wellesley / Sv Ti / S 180,000 (all centers) / E 52
- UNIVAC Div. of Sperry Rand Corp., 10924 Ave. J East, Grand Prairie, Tex. 75050 / 214-AN2-3511 / *C 65
Complete MICR bank processor systems including high-speed document sorters, audit lists, and Central Processor with accumulating and dictionary look-up capabilities. MICR document encoding devices to print the amount, account number, and transit number fields. Optical character recognition systems for automation of accounts receivable and inventory control, including Readatron Card Punch and Charge Sales Recorders / S 150 / E 57
- Universal Comptronics Corp., Clairmont Ave., Thornwood, N.Y. 10594 / 914-R09-7500 / *C 67
A/D Data acquisition systems, A/D instrumentation, A/D converters,
- special purpose digital control systems for automation / Eq / S 35 / E 59
- Universal Systems & Programming Service, 2217A 4th Ave., Seattle, Wash. 98121 / 206-MA3-2101 / *C 67
Systems, programming, DP, temporary personnel and key punching, consulting / Sv / S 15 / E 66
- University Computing Co., 1300 Frito-Lay Tower, Dallas, Tex. 75235 / 214-FL7-0246 / *C 67
Commercial and scientific data processing at our centers or via remote terminals linked to centers; programming; systems; computer time / Sv Ti Co / S 230 / E 64
- Uptime Corp., 15910 W. Fifth Ave., Golden, Colo. 80401 / 303-279-3351 / *C 67
Punched card readers, card punch / S 130 / E 58
- URS Corp., 1700 S. El Camino Real, San Mateo, Cal. 94402 / 415-349-5111 / *C 67
Information systems design: personnel; administrative support; communications; general, financial, insurance and operational accounting; maintenance management; material scheduling; production control; distribution; inventory management. System programming; dialect translation, simulation/emulation, operating systems (input-output control, real-time and executive routines, monitors, and file processors), language compilers, sort/merge programs, report generators, computer program conversion. Scientific and engineering analysis. Operations research / Sv Ti Co / S 250 / E 51
- USECO Div., Litton Industries, 13536 Satcoy St., Van Nuys, Cal. 91409 / 213-786-9381 / *C 67
Molded and precision machined electronic hardware. / S ? / E 43
- Utility Billing, Inc., P.O. Box 22247, Memphis, Tenn. 38122 / 901-323-5164 / *C 67
Utility billing, consulting and programming services / S 7 / E 66
- V**
- Vector Electronic Co., Inc., 1100 Flower St., Glendale, Cal. 91201 / 213-245-8971 / *C 65
Pre-programming, patchboards, patch cords, plug-in cards, breadboard kits / S 85 / E 47
- Veeder-Root, 70 Sargeant St., Hartford, Conn. 06102 / 203-527-7201 / *C 67
Mechanical and electrical instruments to count, record and control through numerics / S 1700 / E 1866
- Veeder-Root, Electronic Controls Div., 29 Andover St., Danvers, Mass. 01923 / 617-774-6110 / *C 67
Electronic controls, counters, converters, recorders, flexible appointment plan systems, multiple key-lock security systems, and industrial numeric systems / S 110 / E 60
- Vermont Research Corp., Precision Park, N. Springfield, Vt. 05150 / 802-886-2256 / *C 67
Magnetic memory drums and associated electronic circuitry / Eq / S 75 / E 60
- Victor Comptometer Corp., Business Machines Group, 3900 N. Rockwell, Chicago, Ill. 60618 / 312-539-8210 / *C 67
Digital printers, adding machines, calculators, calculating services handwritten, instant reproduction

Roster of Organizations

communications systems and visual displays for communications system / Eq / S 4800 / E 18

Virginia Electronics Co., Inc., 5202 River Rd., Washington, D.C. 20016 / 301-654-6680 / *C 67

Audio amplifiers, transformers, communication control systems, programmable patch panels, patch cords, resistance soldering machines, systems engineering, research and development, design and manufacturing technical documentation, drafting and graphic arts, power supplies, circuit programming systems / S 100 / E 51

Virginia Panel Corp., 1400 New Hope Rd., Waynesboro, Va. 22980 / 703-942-8376 / *C 67

Offers plugboards, patchcords, DP accessories, electronic components, magnetic tape cleaner / S 70 / E 59

W

Waber Electronics, Inc., 2000 N. Second St., Philadelphia, Pa. 19122 / 215-NE4-3200 / *C 66

Master power controls, electrical outlet boxes, instrument carts and lab mobile carriers / S 70 / E 58

Paul G. Wagner Co., 1227 S. Shamrock Ave., Monrovia, Cal. 91016 / 213-357-1992 / *C 66

MICRO-PUNCH 461, a portable, printing key punch / S ? / E ?

Walkirt Co., 10321 S. La Cienega Blvd., Los Angeles, Cal. 90045 / 213-776-0323 / *C 67

Digital and logic modules and P.C. boards, I.C. modules and BDS production services / S 50 / E 48

Wang Laboratories Inc., 836 North St., Tewksbury, Mass. 01876 / 617-851-7311 / *C 67

GP computer for scientific and business computations, desk top computer, electronic calculator with satellite keyboards and simultaneous electronics / Eq Ti Co Le / S 360 / E 51

Warren Assoc., 433 Putnam Ave., Cambridge, Mass. 02139 / 617-354-5249 / *C 67

Computer software, training, and consulting; software for robotic devices / Sv Co / S 5 / E 64

Washington Aluminum Co., Inc., Knecht Ave. & P.R.R., Baltimore, Md. 21229 / 301-242-1000 / *C 67

WACO plate all steel free-access floor system (raised floors for computer rooms) / S 400 / E 47

F. S. Webster Co., Interchemical Corp., Copying Products Div., 1 Amherst St., Cambridge, Mass. 02142 / 617-KIT-2300 / *C 65

Inked ribbons for all computers / S 225 / E 1889

Wengel Service Corp., Research Park, Princeton, N.J. 08540 / 609-924-4900 / *C 67

Data processing and keypunching services using System/360, Model 20 and unit record equipment / Sv / S 26 / E 48

WESCO Information Utility, Inc. (Div. of Washington Engineering Service, Inc.), White Flint Science Pk., Kensington, Md. 20795 / 301-933-5770 / *C 67

Honeywell 200 / Sv Ti / S 25 / E 65

West Eleven Inc. (Distributor for Hitachi), 11836 San Vicente Blvd., Los Angeles, Cal. 90049 / 213-477-1039 / *C 67

GP analog computers, two variable function generators / Eq Ti / S 4 / E 58

Westat Research, Inc., 6464 W. 14th St., Denver, Colo. 80215 / 303-238-0332 / *C 67

Statistical and mathematical analysis of data / Sv / S 20 / E 61

Western Addo-X, Inc., 3339 Temple St., Los Angeles, Cal. 90026 / 213-385-4161 / *C 67

Data acquisition, punched paper tape punches and bookkeeping equipment, optical character recognition input, input loggers and printers, time attendance and job recording, program controlled paper tape punches / S 30 / E 54

Western Computer Tape Co., 1408 Yosemite Ave., San Francisco, Cal. 94124 / 415-822-6171 / *C 67

Paper tapes manufacturers / S 5 / E 65

Western Operations, Inc., 381 Bush St., San Francisco, Cal. 94104 / 415-981-1131 / *C 67

Information systems services - consulting, design and implementation / Sv / S 40 / E 65

Westgate Laboratory, Inc., 506 S. High St., Yellow Springs, O. 45387 / 513-R07-7375 (Dayton, O. - VI9-1330) / *C 65

Research, development, prototype, and small lot production in electronics, physics, optics and photography; X-Y plotters and vehicle position displays, controls, industrial instrumentation, eye movement cameras, X-Y recorders / S 58 / E 56

Westinghouse Electric Corp., Advanced Data Systems, 700 Braddock Ave., East Pittsburgh, Pa. 15112 / - / *C 66

Consulting service: systems and operations research; data systems design and development; data retrieval systems and packages / S ? / E ?

Westinghouse Electric Corp., Electronic & Specialty Products Group, Gateway Bldg. #3, Pittsburgh, Pa. 15230 / 412-391-2800 / *C 66

Amplifiers, plug boards, computer packaged circuits, computing services, consulting services, analog to digital converters, digital to analog converters, electronic counters, indicator lights, diode and electronic counters, indicator lights, diode and electronic multipliers, shift registers, research, scanners, telemetering systems, transformers, visual output devices / S 25,000 / E 62 (Group)

Weston-Boonshaft and Fuchs, Hatboro Industrial Pk., Hatboro, Pa. 19040 / 215-OS2-1240 / *C 65

Sine, transient and random computer analyzers, servo computers, control systems, statistical computers / S 100 / E 59

Weston Instruments, Inc., Weston Hatboro Div., County Line Rd., Hatboro, Pa. 19040 / 215-672-1240 / *C 67

Digital and hybrid computers for process control / S 150 / E ?

Weston Instruments, Inc., 614 Frelinghuysen Ave., Newark, N.J. 07114 / 201-243-4700 / *C 65

Instruments and components; indicating, display and controlling instruments; product resolvers, input-output devices, multipliers, calibrators, relays, and resistors / S 2000 / E 1888

Wheeldex, Inc., 1000 N. Division St., Peekskill, N.Y. 10566 / 914-737-6800 / *C 67

Cards, inventory systems, office machines, continuous forms, paper and magnetic tape filing systems / S -500 / E 31

Whittaker Corp., Technical Products Div., 9601 Canoga Ave., Chatsworth, Cal. 91311 / 213-341-0800 / *C 66

Electromechanical counter / S 950 / E 39

Wild & Assoc., Inc., 200 Michael Dr., Syosset, N.Y. 11791 / 516-921-7100 / *C 67

Small digital computers, digital peripheral equipment, memory devices and systems / Eq / S 100 / E 56

John Wiley & Sons, Inc., 605 3rd Ave., New York, N.Y. 10016 / 212-TN7-9800 / *C 67

Publishers of books dealing with computers and computer technology / S 650 / E 1807

Williams and Marcus Co., Bunting Lane, Primos, Pa. 19018 / 215-CR6-6415 / *C 67

80 col. DP cards, panels, paper tape, flat forms, continuous forms, wires / S 210 / E 08

Willis and Pedersen, Data Processing Supply Div., 35 Tubbs Rd., San Francisco, Cal. 94107 / 415-285-5400 / *C 67

Binders, files, labels, tapes, forms, ribbons, card mailers, tape boxes, storage files, cheshire punched CF mailing labels, paper tape, filing systems / S 20 / E 51

G. C. Wilson & Co., 1035 26th St., Huntington, W. Va. 25703 / 304-523-5149 / *C 67

Timing devices / S 15 / E 45

Wilson Jones Co. (Div. of Swingline Inc.), 6150 Touhy Ave., Chicago, Ill. 60648 / 312-774-7700 / *C 67

Nylon post binders and indexes for marginal-punched "tab" sheets; ring binders / S 1600 / E 1900

Wiltek, Inc. (formerly Trak Electronics Co., Inc.), 59 Danbury Rd., Wilton, Conn. 06897 / 203-762-5521 / *C 67

Digi-store magnetic tape read/write units, buffer stores, design systems using the above equipments to specifications / S 85 / E 46

Winchester Electronics Div., Litton Industries, Main St. & Hillside Ave., Oakville, Conn. 06779 / 203-274-8891 / *C 67

Electronic and electrical connectors; high density, miniature, sub-miniature, round, rectangular, rack and panel, printed circuit types / S ? / E 41

Wittek Products Co., 14750 Keswick St., Van Nuys, Cal. 91405 / 213-ST0-8265 / *C 65

Breadboard kits for electronic designers working on research and development in semiconductor circuitry, computers, and data processing systems / S 3 / E 48

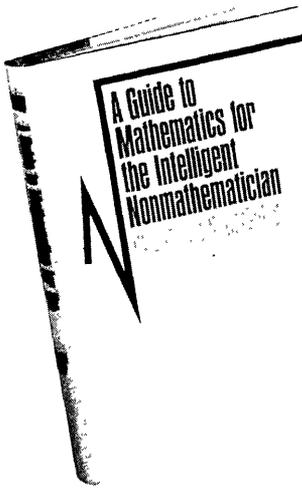
Wolf Research and Development Corp., P.O. Box 36, Baker Ave., West Concord, Mass. 01781 / 617-369-2111; 646-8192 / *C 67

Computer consulting, systems analysis and design, computer programming, computer operations in the fields of aerospace, information retrieval, geodesy, electronics and management systems / Sv / S 350 / E 56

Wolf Research and Development Corp. (Branch office), 5801 Annapolis Rd., Bladensburg, Md. 20710 / 301-779-2800 / *C 67

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(Please turn to page 40)



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The right technique for understanding mathematical ideas
The usual presentation of mathematics
How to read this book
What is mathematics really about?
Barriers to mathematics
Is it sensible for me to be interested in mathematics?
Can mathematics actually be useful to me?
The seeds of mathematics hidden in ordinary everyday language
Understanding mathematics
The anchoring of new knowledge upon old knowledge
Acquiring power to use mathematical tools
The ideas of mathematics
The relative importance of ideas

Thousand Horsepower ideas of mathematics
Flypower ideas
Understanding important mathematical ideas
The numbers that are used often
What is Estimating? Why is it important? How to Estimate
The arithmetic for Estimating
A light-year in miles
Traveling to the nearest star
How much can one do in a lifetime?
If the earth were all sand . . .
If the universe were filled with the tiniest particles . . .
The number of people the earth can support
Confirming by Estimating indirectly
How correct figures are calculated in a well-run organization

Mistakes that occur in reports
A mistake that actually occurred in business
A dozen powerful ideas made easy to understand
Mathematical Variables
Formulas — rules in language, formulas in mathematics
Functions — "It Depends" in language, functions in mathematics
Derivatives — Integrals — Equations — Angles
Logic: properties and relations
Statistics: probability and frequency distributions
Mathematics and the environment
The kinds of mathematics problems
Computers and mathematics
The "New Math" and mathematical education
Predicting the future

FORTY (40) "HOW TO" METHODS EXPLAINED

- How to calculate a chance
 - How to calculate a derivative by just looking
 - How to tell factual truth from logical truth
 - How to go from a rule to a formula
 - How to make approximate predictions
 - How to go from ideas to letters
 - How to use one guess to make a better guess
- ETC.

Author Edmund C. Berkeley

has written 11 books on computers and related subjects; is a Fellow of the Society of Actuaries; editor and publisher of COMPUTERS AND AUTOMATION; editorial director of the Library of Computer and Information Sciences; senior scientist at Information International, Inc. of Cambridge, Mass.; designer of the Brainiac electric brain construction kit and other scientific kits. Graduated Harvard College A.B. summa cum laude, majored in mathematics. He has been in the computer field since 1939, and has been an invited lecturer on computers in the U.S., Canada, England, Japan, Soviet Union and Australia.

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A Guide To Mathematics For The Intelligent Nonmathematician

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2. The Hidden Seeds
3. Understanding Mathematics
4. The Ideas of Mathematics

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5. The Numbers that are Used Often
6. Estimating and its Simple Arithmetic
7. The Long Reach of Estimating
8. Estimating and Being Right

Part Three: A DOZEN POWERFUL IDEAS MADE EASY TO UNDERSTAND

9. Mathematics: Variables
10. Formulas
11. Functions and Graphs
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14. Equations
15. Angles
16. Logic: Properties and Relations
17. Statistics: Probability and Frequency Distributions

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OTHER BOOKS BY EDMUND C. BERKELEY:

"Giant Brains or Machines that Think," John Wiley and Sons, New York, 1949, 227 pp

"Computers: Their Operation and Applications," Reinhold Publishing Corp., New York, 1956, 366 pp

"Symbolic Logic and Intelligent Machines," Reinhold Publishing Corp., New York, 1959, 203 pp

"Brainiacs — 201 Small Electric Brain Machines and How to Make Them," Berkeley Enterprises, Inc., Newtonville, Mass. 02160, 1959, 256 pp

"Glossary of Terms in Computers and Data Processing," Berkeley Enterprises, Inc., Newtonville, Mass. 02160, 1960, 96 pp

"Probability and Statistics — An Introduction Through Experiments," Science Materials Center, a Division of the Library of Science, New York, N.Y., 1961, 140 pp

"The Computer Revolution," Doubleday & Co., New York, N.Y., 1962, 249 pp

"Teaching Machines, Programmed Learning, and Automatic Teaching Computers," Berkeley Enterprises, Inc., Newtonville, Mass. 02160, 1963, 204 pp

"The Programming Language LISP: Its Operation and Applications," MIT Press, second printing, March, 1966, 392 pp

"Computer-Assisted Explanation," Information International, Inc., 1967, 280 pp

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Roster of Organizations

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of data reduction and storage and retrieval, operations research, biomedical DP, theoretical physics, computer-controlled communications, applied mathematics, statistical analysis, missile trajectory analysis, satellite tracking and control / Sv Ti Co / S 350 / E 56
Wright Line Division, Barry Wright Corp., 160 Gold Star Blvd., Worcester, Mass. 01606 / 617-791-0933 / *C 66

Products for the handling, storage and filing of punched cards, magnetic tape, paper tape and disk packs / S 300 / E 34
Wyle Laboratories, 128 Maryland St., El Segundo, Cal. 90245 / 213-678-4251 / *C 67

Computers, digital, desk-top and rack-mounted; punch card readers; keyboard-display units, other peripherals. Circuits, two lines of module cards, one utilizing germanium discrete components, the other integrated circuits / Eq Sv Co / S 500 / E 49

Wyoming Electrodata Corp., 309 E. Main, Riverton, Wyo. 82501 / - / *C 67
Data consoles for source data acquisition, transmission over Tel lines, and high speed computer input of same / Eq Co Le / S -10 / E 65

X

Xerox Corp., P.O. Box 1540, Rochester, N.Y. 14603 / 716-546-4500 / *C 65
Document copying and reproduction equipment / S 10,000 / E 06

Y

Ed Younger & Assoc., Inc., 8 S. Michigan Ave., Chicago, Ill. 60603 / 312-236-7455 / *C 67

Nationwide recruitment of manpower in EDP, systems, operations research, mathematics, applied statistics, accounting and finance / Sv / S 8 / E 61
Youngstown Technological Inst., 2151 Market St., Youngstown, O. 44507 / 216-788-6597 / *C 67
Instruction in IBM keypunch, verifier, sorters, collators, interpreters, reproducing punch, accounting machines, 1401 computer, 604 calc. punch, 360 systems / Co / S 12 / E 63

Z

Zuse KG, Grosse Industriestrasse 19-21, 643 Bad Hersfeld, Germany / 06621/841 / *C 67

Zuse Z 25, Zuse Z 23 electronic computer systems, Zuse Z 64 Graphomat punched tape plotter, Zuse Z 80 electronic counter, Zuse Z 84 film to paper tape converter, Zuse Z 16 data preparation equipment, Zuse Z 18 punched tape controlled tag punch, tag reading automatic cash desk with adding tape punch / Eq Sv Co / S 1000 / E 36

George T. Zurewicz Inc., 276 Park Ave. S., New York, N.Y. 10010 / 212-228-4030 / *C 67
Friden, Marchant, IBM, Monroe / S 6 / E 66

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BUYERS' GUIDE TO PRODUCTS AND SERVICES

IN COMPUTING AND DATA PROCESSING

(Cumulative Information As Of May 15, 1967)

This guide contains the names of organizations who offer products and services in the computer field. For addresses and additional information about these organizations, please refer to their entries in the "Roster of Organizations" beginning on page 8.

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Following is a list of headings under which products and services have been classified. There is some overlapping among these headings; thus it may be necessary or desirable to look for a specific item under more than one heading.

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Ferrite	C33	Panels	P1	Reels	T6
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Counters	C35	Relay Rack	P3	Filing Systems	T8
Electronic	C36	Paper Tape	P4	Punches	T9
Mechanical	C37	Patch Cords	P5	Readers	T10
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		Accessories	P15	Visual Output Devices	V1

A1. ADDING MACHINES

Addo-X
 ADDO-X Sales Corp.
 All Data Processing Machines, Inc.
 Comput-A-Credit, Inc.
 Data Processing Exchange, Inc.
 Friden, Inc.
 Howard's Automatic Devices
 Litton Electronic Business Systems
 Michigan Business Machines
 The National Cash Register Co.
 Scientific Control Corp.
 Superior Data Processing Service
 Victor Comptometer Corp., Business Machines Group
 Wang Laboratories Inc.
 Western Addo-X, Inc.

A2. AMPLIFIERS

Adage, Inc.
 Aerojet-General Corp., Von Karman Center
 All Data Processing Machines, Inc.
 Applied Dynamics, Inc.
 Argonaut Associates, Inc.
 Avtron Manufacturing, Inc.
 Beckman Instruments, Inc.
 Cohu Electronics, Inc.
 COMCOR, Inc.
 Consolidated Electrodynamics Corp.
 Data Machines, Inc.
 Digital Devices, Inc.
 Dymec
 Fairchild Semiconductor General Radio Co.
 Geo Space Corp.
 GPS Instrument Co., Inc.
 Hewlett-Packard
 Inductor Engineering, Inc.
 Melcor Electronics Corp.
 Moog Inc. Industrial Div.
 Motorola Inc., Government Electronics Div.
 Pastoriza Electronics Inc.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Quidar Electronics Inc.
 Raytheon Co., Semiconductor Operation
 Scientific Data Systems, Inc.
 Simulators, Inc.
 System Computers Ltd.
 Systron-Donner Corp.
 Virginia Electronics Co., Inc.
 West Eleven Inc.

B1. BOARDS, PLOTTING

Advanced Circuitry Div., Litton Industries
 All Data Processing Machines, Inc.
 Benson-Lehner Corp.
 DISCON Corp.
 Felsenthal Instruments Co.
 Mactex
 Sealectro Corp.
 Stromberg-Carlson Corp.
 Wild & Assoc., Inc.

B2. BOARDS, PLUG

(See P7: Plugboards)

C1. CAMERAS

Beckman & Whitley, Inc.
 Control Data Corp.
 Data Reproduction Systems
 Flight Research Div.
 Hewlett-Packard
 Mast Development Co.
 Technical Operations, Inc.

C2. CAMERAS, DATA RECORDING

Beckman & Whitley, Inc.
 Control Data Corp.
 Fairchild Space & Defense Systems
 Flight Research Div.
 Houston Fearless Corp.
 The National Cash Register Co.
 Stromberg-Carlson Corp.
 Superior Data Processing Service

C3. CARDS

(See P14: Punch Cards)

C4. CARDS, MAGNETIC

DI/AN Controls, Inc.
 Hallmarkets International
 Litton Electronic Business Systems
 Management Systems International AB
 Moore Business Forms, Inc.
 The National Cash Register Co.
 Record Control Systems
 Sooner Business Systems

C5. CIRCUITS

Aerojet-General Corp., Von Karman Center
 Advanced Circuitry Div., Litton Industries
 The Artronic Instrument Co.
 Comput-A-Credit, Inc.
 Decision Control, Inc./Data Machines, Inc.
 Electronic Modules Corp.
 Indel Inc.
 Lockheed Electronics Co., Avionics and Industrial Products Div.
 Logic Corp.
 Moog Inc. Industrial Div.
 Superior Data Processing Service
 Tec Serv Inc.
 Wild & Assoc., Inc.
 Wyle Laboratories

C6. CIRCUITS, COMPUTER PACKAGED

Advanced Circuitry Div., Litton Industries
 Aerojet-General Corp., Von Karman Center
 The Artronic Instrument Co.
 Avtron Manufacturing, Inc.
 Combined Data Group Inc.
 Comput-A-Credit, Inc.
 Control Logic, Inc.
 Data Machines, Inc.
 DI/AN Controls, Inc.
 Digital Devices, Inc.
 Digital Equipment Corp.
 Electronic Modules Corp.
 Fairchild Semiconductor

GPS Instrument Co., Inc.
 Honeywell Inc., Computer Control Div.
 Keltec Industries, Inc., Alexandria Div.
 Logic Corp.
 Pivan Engineering Co.
 Raytheon Computer
 Scientific Control Corp.
 Scientific Data Systems, Inc.
 Tech Serv, Inc.
 Universal Comptronics Corp.
 Walkirt Co.
 Wild & Assoc., Inc.
 Wyle Laboratories

C7. COMMUNICATIONS SYSTEMS (Computer Types)

Aries Corp.
 Beckman Instruments, Inc.
 Celestronics Inc.
 Combined Data Group Inc.
 Comput-A-Credit, Inc.
 The Computer Exchange, Inc.
 Computer Technology Ltd.
 Computer Test Corp.
 Computrol Systems, Inc.
 Control Data Corp.
 Control Processing Services
 Data Network Corp.
 Data Systems Analysts, Inc.
 Digi-Data Corp.
 Digital Equipment Corp.
 Digitronics Corp.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 General Electric Co., Printer-Reader Bus. Sect.
 Honeywell Electronic Data Processing Div.
 Honeywell Inc., Computer Control Div.
 Informatics Inc.
 Information Research Associates, Inc.
 Infotec, Inc.
 Infotran, Inc.
 Invac Corp.
 Lenkurt Electric Co., Inc.
 Litton Electronic Business Systems
 Logic Corp.
 Mactex
 Mohawk Data Sciences Corp.
 Motorola Inc., Government Electronics Div.
 The National Cash Register Co.
 Philco-Ford Corp.
 Quidar Electronics Inc.
 Raytheon Co., Communication & Data Processing Operation
 Rixon Electronics, Inc.
 Scientific Data Systems, Inc.
 Superior Data Processing Service
 Tally Corp.
 Teletype Corp.
 Robert V. Thoren Co.
 University Computing Co.
 URS Corp.
 Victor Comptometer Corp., Business Machines Group

C8. COMPUTERS

(See also specific types)

Adage, Inc.
 All Data Processing Machines, Inc.
 The Automation Co.
 Avtron Manufacturing, Inc.
 Beckman Instruments, Inc.

Frank R. Berman
 COMCOR, Inc.
 Comput-A-Credit, Inc.
 The Computer Exchange, Inc.
 Computer Supplies Co.
 Control Data Corp.
 Cyber-Tronics, Inc.
 DA-PEX
 Data Acquisition Corp.
 Datacraft Inc.
 Data Machines, Inc.
 Data Operations Inc.
 Data Processors Supply Co.
 DataStation/Los Angeles
 Datronic Rental Corp.
 Decision Control, Inc./Data Machines, Inc.
 Digital Electronics Inc.
 Digital Equipment Corp.
 Dymec
 Educational Products, Fabrik-Tek Inc.
 Entech Research Products Corp.
 English Electric Computers Ltd.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 GPS Instrument Co., Inc.
 Hewlett-Packard
 Honeywell Electronic Data Processing Div.
 Honeywell Inc., Computer Control Div.
 IBM Corporation
 Information Processing Systems, Inc.
 Interdata
 Litton Electronic Business Systems
 Mactex
 MAI Equipment Corp.
 Mauchly Honig Time Sharing Associates, Inc.
 Moore Associates Inc.
 Namac, Inc.
 The National Cash Register Co.
 Pacific Data Systems Inc.
 Philco-Ford Corp.
 Pivan Engineering Co.
 Scientific Control Corp.
 Scientific Data Systems, Inc.
 Standard Computer Corp.
 Systems & Electronics, Inc.
 System Computers Ltd.

C9. COMPUTERS, ANALOG

All Data Processing Machines, Inc.
 Applied Dynamics, Inc.
 Argonaut Associates, Inc.
 Bailey Meter Co.
 Beckman Instruments, Inc.
 COMCOR, Inc.
 Consolidated Electrodynamics Corp.
 Control Data Corp.
 Data Processing Exchange, Inc.
 Fairchild Space & Defense Systems
 General Electric, Process Computer Bus. Sect.
 General Precision, Inc., Librascope Group
 Geo Space Corp.
 Geo Space Corp., Computer Div.
 GPS Instrument Co., Inc.
 Litton Electronic Business Systems
 Non-Linear Systems, Inc.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Simulators, Inc.
 Systron-Donner Corp.
 West Eleven Inc.

C10. COMPUTERS, DIGITAL

Adage, Inc.
All Data Processing Machines, Inc.
Automated Data Associates
The Automation Co.
Autonetics
Avtron Manufacturing, Inc.
Bailey Meter Co.
Beckman Instruments, Inc.
Frank R. Berman
The Bunker-Ramo Corp.
Clary Datacomp Systems
Combined Data Group Inc.
Comput-A-Credit, Inc.
Computer Consultants, Inc.
The Computer Exchange, Inc.
Computer Sharing Inc.
Computer Supplies Co.
Computer Technology Ltd.
Control Data Corp.
Cyber-Tronics, Inc.
DA-PEX
Data Acquisition Corp.
Datacraft Inc.
Data Machines, Inc.
Data Operations Inc.
Data Processing Exchange, Inc.
DataStation/Los Angeles
Datastation of New York, Inc.
Decision Control, Inc./Data Machines, Inc.
DI/AN Controls, Inc.
Digital Electronics Inc.
Digital Equipment Corp.
Dymec
EDP Leasing Corp.
Educational Products, Fabri-Tek Inc.
Electro-Mechanical Research, Inc.
Electronic Business Machines Co.
Emtech Research Products Corp.
Fabri-Tek, Inc.
Fairchild Space & Defense Systems
General Electric Co., Information Systems Marketing Operation (ISMO)
General Electric, Process Computer Bus. Sect.
General Precision, Inc., Librascope Group
Hewlett-Packard
Honeywell Electronic Data Processing Div.
Honeywell Inc., Computer Control Div.
Information Processing Systems, Inc.
Interdata
Kaman Nuclear
Keuffel & Esser Co.
Litton Electronic Business Systems
Logic Corp.
Mactex
MAI Equipment Corp.
Mathatronics
Mauchly Honig Time Sharing Associates, Inc.
Memphis Methods & Tabulating Service
Michigan Business Machines
Namac, Inc.
The National Cash Register Co.
National Computer Systems, Inc.
Pacific Data Systems Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Randolph Computer Corp.
Raytheon Computer
SAID, Inc.
Scientific Control Corp.

Scientific Data Systems, Inc.
Serendipity Associates
Spear, Inc.
Standard Computer Corp.
R. Edward Stemm, Inc.
Superior Data Processing Service
Systems & Electronics, Inc.
Systems Engineering Laboratories, Inc.
Technical Measurement Corp.
Time Brokers, Inc.
UNIVAC Div., Sperry Rand Corp.
Wang Laboratories
Weston Instruments, Inc.
Wild & Associates, Inc.
Wyle Laboratories
Zuse KG

C11. COMPUTERS, SPECIAL PURPOSE

AAI Corp.
All Data Processing Machines, Inc.
Andromeda, Inc.
Applied Dynamics, Inc.
Argonaut Associates, Inc.
The Automation Co.
Avtron Manufacturing, Inc.
Baldwin Kongsberg Co.
Beckman Instruments, Inc.
The Bunker-Ramo Corp.
Canadian Research Institute
Celestronics Inc.
Combined Data Group Inc.
COMCOR, Inc.
Comput-A-Credit, Inc.
Control Data Corp.
Control Logic, Inc.
Cyber-Tronics, Inc.
Data Machines, Inc.
Datametrics Corp.
Data Systems Corp.
DI/AN Controls, Inc.
Digital Electronics Inc.
Digital Equipment Corp.
DISCON Corp.
Dymec
Educational Products, Fabri-Tek Inc.
Electro-Mechanical Research, Inc.
Electronic Modules Corp.
Kurt Enslein
Felsenthal Instruments Co.
General Precision, Inc., Librascope Group
Geo Space Corp.
GPL Div., General Precision, Inc.
Honeywell Inc., Computer Control Div.
Industrial Products Group
Infotec, Inc.
Infotran Inc.
Interdata
Jonker Corp.
George Kelk Limited
Keltec Industries, Inc., Alexandria Div.
Litton Electronic Business Systems
Logic Corp.
Mathatronics
Moore Associates Inc.
Motorola Inc., Government Electronics Div.
Nash and Harrison Ltd.
The National Cash Register Co.
Pacific Data Systems, Inc.
Philco-Ford Corp.
Photo Data, Inc.
Raytheon Computer
Scientific Control Corp.
Scientific Data Systems, Inc.

Superior Data Processing Service
System Computers Ltd.
Systems Engineering Laboratories, Inc.
Technical Measurement Corp.
UNIVAC Div., Sperry Rand Corp.
Universal Comptronics Corp.
Wyle Laboratories
Zuse KG

C12. COMPUTERS, TEST EQUIPMENT

All Data Processing Machines, Inc.
Applied Dynamics, Inc.
Beckman Instruments, Inc.
Comput-A-Credit, Inc.
Computer Test Corp.
Control Data Corp.
DARTEX Div. of Tally Corp.
Data Machines, Inc.
Datametrics Corp.
Data Systems Corp.
Digital Electronics Inc.
Digital Equipment Corp.
Digitronics Corp.
Dymec
Emtech Research Products Corp.
Kurt Enslein
General Kinetics Inc.
Geo Space Corp., Computer Div.
Hewlett-Packard
The Hickok Electrical Instrument Co.
Honeywell Inc., Computer Control Div.
Industrial Products Group
Interdata
Kyros Corp.
Logic Corp.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Randolph Computer Corp.
Raytheon Computer
Scientific Control Corp.
Scientific Data Systems, Inc.
Superior Data Processing Service
System Computers Ltd.
Systems Engineering Laboratories, Inc.
George T. Zurewich Inc.

C13. COMPUTER COMPONENTS (See also specific types)

Aerojet-General Corp., Von Karman Ctr.
Applied Dynamics, Inc.
The Artronic Instrument Co.
Automated Management Systems, Inc.
Beckman Instruments, Inc.
Bolt Beranek & Newman Inc.
Camwil Inc.
COMCOR, Inc.
Comput-A-Credit, Inc.
The Computer Exchange, Inc.
Consolidated Avionics
Control Data Corp.
Control Logic, Inc.
Data-Link Corp.
Data Machines, Inc.
Decision Control, Inc./Data Machines, Inc.
Digital Devices, Inc.
Digital Equipment Corp.
Electro-Mechanical Research, Inc.
Fairchild Semiconductor
Fairchild Space & Defense Systems

General Electric Co., Printer-Reader Bus. Sect.
General Precision, Inc., Librascope Group
Hewlett Packard Co., Mountain View Div.
Honeywell Inc., Computer Control Div.
Interdata
International Diode Corp.
Litton Industries, Potentiometer Div.
Lockheed Electronics Co., Avionics and Industrial Products Div.
Logic Corp.
Mactex
Mauchly Honig Time Sharing Associates, Inc.
The National Cash Register Co.
Ohr-tronics, Inc.
Philco-Ford Corp.
Protolab Extractors
Raytheon Computer
Scantlin Electronics, Inc.
Scientific Control Corp.
Scientific Data Systems, Inc.
Sealectro Corp.
R. Edward Stemm, Inc.
System Computers Ltd.
Syston-Donner Corp.
Tally Corp.
Theta Instrument Corp.
Transistor Electronics Corp.
Uptime Corp.
USECO Div., Litton Industries
Winchester Electronics Div., Litton Industries

C14. and C15. COMPUTING SERVICES and CONSULTING SERVICES

(See SPECIAL ROSTER of Computing, Data Processing, or Consulting Services on Page 68)

C16. CONTROLS

Joseph K. Blum Co.
Bunker-Ramo Corp., Numerical Control Systems Division
Combined Data Group Inc.
Computer Supplies Co.
Emtech Research Products Corp.
Hanover & Selwyn Co.
Interdata
George Kelk Limited
Litton Electronic Business Systems
Moog Inc. Industrial Div.
Moore Associates Inc.
Philco-Ford Corp.
R. Edward Stemm, Inc.
Veeder-Root
Veeder-Root, Electronic Controls Div.

C17. CONTROLS, AUTOMATIC

Aerojet-General Corp., Industrial Systems Div.
All Data Processing Machines, Inc.
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
Bunker-Ramo Corp., Numerical Control Systems Division
Combined Data Group Inc.
Control Data Corp.
Data Processing Exchange, Inc.
Electronic Modules Corp.
Emtech Research Products Corp.
General Electric, Process Computer Bus. Sect.
Interdata

Products and Services

George Kelk Limited
Litton Electronic Business Systems
Moog Inc. Industrial Div.
Moore Associates Inc.
Motorola Inc., Government Electronics Div.
The National Cash Register Co. Philco-Ford Corp.
Pivan Engineering Co.
Remex Electronics
Sealectro Corp.
R. Edward Stemm, Inc.
Theta Instrument Corp.
Universal Comptronics Corp.
Veeder-Root
Veeder-Root, Electronic Controls Div.

C18. CONTROLS, SORTING and COUNTING

Aerojet-General Corp., Industrial Systems Div.
All Data Processing Machines, Inc.
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
Chrono-log Corp.
Computer Supplies Co.
Data Processing Exchange, Inc.
Interdata
George Kelk Limited
Litton Electronic Business Systems
Nash and Harrison Ltd.
The National Cash Register Co. Philco-Ford Corp.
Sooner Business Systems
R. Edward Stemm, Inc.
Superior Data Processing Service
Theta Instrument Corp.
Veeder-Root
Veeder-Root, Electronic Controls Div.

C19. CONVERTERS, INFORMATION

All Data Processing Machines, Inc.
Beckman Instruments, Inc.
Comput-A-Credit, Inc.
Control Data Corp.
Digital Equipment Corp.
Emtech Research Products Corp.
Engineered Electronics Co.
Flight Research Div.
Friden, Inc.
GPL Div., General Precision, Inc.
Honeywell Inc., Computer Control Div.
Litton Electronic Business Systems
Namar, Inc.
The National Cash Register Co. Philco-Ford Corp.
Superior Data Processing Service
Towson Laboratories, Inc.
WESCO Information Utility, Inc.
Wyoming Electrodata Corp.

C20. CONVERTERS, ANALOG TO DIGITAL

Adage, Inc.
Beckman Instruments, Inc.
Cohu Electronics, Inc.
COMCOR, Inc.
Comput-A-Credit, Inc.

Control Data Corp.
Control Logic, Inc.
Data Machines, Inc.
Datametrics Corp.
Data Systems Corp.
Digital Electronics Inc.
Digital Equipment Corp.
Diversified Integration of Data Services
Dymec
Electro-Mechanical Research, Inc.
Electronic Development Corp.
Electronic Engineering Co. of Calif.
Electronic Modules Corp.
Emtech Research Products Corp.
Engineered Electronics Co.
Fairchild Space & Defense Systems
Flight Research Div.
Geo Space Corp.
Geo Space Corp., Computer Div.
GPL Div., General Precision, Inc.
Hewlett-Packard
Honeywell Inc., Computer Control Div.
Industrial Products Group
Information International Inc.
Instrument Products, Minnesota Mining & Mfg. Co.
International Digitizing Corp.
Johnson Computing & Tabulating Corp.
George Kelk Limited
Keltec Industries, Inc., Alexandria Div.
Litton Encoder Div. Logic Corp.
Non-Linear Systems, Inc.
Pastoriza Electronics Inc. Philco-Ford Corp.
Pivan Engineering Co.
Raytheon Co., Communication & Data Processing Operation
Raytheon Computer
Scientific Control Corp.
Scientific Data Systems, Inc.
R. Edward Stemm, Inc.
Systems Engineering Laboratories, Inc.
Systron-Donner Corp.
Technical Measurement Corp.
Towson Laboratories, Inc.
Universal Comptronics Corp.
Wang Laboratories Inc.
Wild & Assoc., Inc.
Wyle Laboratories
Zuse KG

C21. CONVERTERS, CARD TO MAGNETIC TAPE

Beckman Instruments, Inc.
The Computer Exchange, Inc.
Control Data Corp.
Control Logic, Inc.
DARTEX Div. of Tally Corp.
Data Operations Inc.
Data Processing Exchange, Inc.
DataStation/Los Angeles
Detroit IPC
Digi-Data Corp.
Diversified Integration of Data Services
EDCO Data Processing Corp.
General Electric Co., Information Systems Marketing Operation (ISMO)
Interdata
Logic Corp.
Marshall, Roger D.

The Matrix Corp., Computer Services Div.
Memphis Methods & Tabulating Service
Mohawk Data Sciences Corp.
The National Cash Register Co. Philco-Ford Corp.
The Pioneer Electric & Research Corp.
Pivan Engineering Co.
SAID, Inc.
Superior Data Processing Service
Tally Corp.
Robert V. Thoren Co.
Universal Comptronics Corp.
WESCO Information Utility, Inc.

C22. CONVERTERS, CARD TO PAPER TAPE

The Acrotod Co.
The Automation Co.
Control Data Corp.
Control Logic, Inc.
Creed & Co. Ltd.
DARTEX Div. of Tally Corp.
Data-link Corp.
Data Processing Exchange, Inc.
Diversified Integration of Data Services
EDCO Data Processing Corp.
Emtech Research Products Corp.
Friden, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Howard's Automatic Devices
Interdata
Keyed Systems & Service, Inc.
Litton Electronic Business Systems
Logic Corp.
Marshall, Roger D.
Michigan Business Machines
The National Cash Register Co.
Ohr-tronics, Inc.
Philco-Ford Corp.
The Pioneer Electric & Research Corp.
Pivan Engineering Co.
Roytron
SAID, Inc.
R. Edward Stemm, Inc.
Superior Data Processing Service
Tally Corp.
Tape Center Ltd.
Tape Tabulating Inc.
Robert V. Thoren Co.
Universal Comptronics Corp.

C23. CONVERTERS, CODE

Beckman Instruments, Inc.
Comput-A-Credit, Inc.
Control Logic, Inc.
DARTEX Div. of Tally Corp.
Data-link Corp.
Data Systems Corp.
Emtech Research Products Corp.
Interdata
Keltec Industries, Inc., Alexandria Div.
Logic Corp.
Marshall, Roger D.
Ohr-tronics, Inc.
Philco-Ford Corp.
SAID, Inc.
Superior Data Processing Service
Teletype Corp.
Theta Instrument Corp.

Universal Comptronics Corp.
Wild & Assoc., Inc.
Zuse KG

C24. CONVERTERS, DIGITAL TO ANALOG

Adage, Inc.
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
Comput-A-Credit, Inc.
Control Data Corp.
Control Logic, Inc.
Data-link Corp.
Datametrics Corp.
Decision Control, Inc./Data Machines, Inc.
Digital Electronics Inc.
Digital Equipment Corp.
Diversified Integration of Data Services
Dymec
Electro-Mechanical Research, Inc.
Electronic Development Corp.
Electronic Engineering Co. of Calif.
Emtech Research Products Corp.
Engineered Electronics Co.
Fairchild Space & Defense Systems
General Radio Co.
Geo Space Corp.
Geo Space Corp., Computer Div.
Hewlett-Packard
Honeywell Inc., Computer Control Div.
Industrial Products Group
Information Displays, Inc.
Information International, Inc.
Interdata
Keltec Industries, Inc., Alexandria Div.
Logic Corp.
Non-Linear Systems, Inc.
Pastoriza Electronics Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Quidar Electronics Inc.
Raytheon Computer
Scientific Control Corp.
Scientific Data Systems, Inc.
Simulators, Inc.
Systems Engineering Laboratories, Inc.
Universal Comptronics Corp.
Veeder-Root, Electronic Controls Div.
Wild & Assoc., Inc.
Wyle Laboratories
Zuse KG

C25. CONVERTERS, DIGITAL TO GRAPHIC

Bolt Beranek and Newman Inc.
Control Data Corp.
Data-link Corp.
Digital Equipment Corp.
DISCON Corp.
Emtech Research Products Corp.
Engineered Electronics Co.
Geo Space Corp., Computer Div.
Hewlett-Packard
Information Displays, Inc.
Information International Inc.
Infotec, Inc.
Interdata
Litton Electronic Business Systems
Mactex
Philco-Ford Corp.

Products and Services

Pivan Engineering Co.
Raytheon Computer
Scientific Data Systems, Inc.
Straza Industries
Stromberg-Carlson Corp.
Transistor Electronics Corp.
Wild & Assoc., Inc.
Zuse KG

C26. CONVERTERS, GRAPHIC TO DIGITAL

Auto-trol Corp.
Beckman Instruments, Inc.
Bolt Beranek and Newman Inc.
CALMA Co.
Data-link Corp.
DISCON Corp.
Emtech Research Products Corp.
Information Displays, Inc.
Information International Inc.
Interdata
International Digitizing Corp.
Keltec Industries, Inc., Alexandria Div.
National Computer Systems, Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Wang Laboratories
Wild & Assoc., Inc.

C27. CONVERTERS, MAGNETIC TAPE TO CARD

Beckman Instruments, Inc.
The Computer Exchange, Inc.
Control Data Corp.
Control Logic, Inc.
Data-link Corp.
Data Operations Inc.
Data Processing Exchange, Inc.
DataStation/Los Angeles
Detroit IPC
Diversified Integration of Data Services
EDCO Data Processing Corp.
General Electric Co., Information Systems Marketing Operation (ISMO)
Interdata
Johnson Computing & Tabulating Corp.
Logic Corp.
Mactex
The Matrix Corp., Computer Services Div.
Memphis Methods & Tabulating Service
The National Cash Register Co.
Philco-Ford Corp.
Pivan Engineering Co.
SAID, Inc.
Superior Data Processing Service
Tally Corp.
Universal Comptronics Corp.
Wiltek, Inc.

C28. CONVERTERS, MAGNETIC TAPE TO PAPER TAPE

Control Data Corp.
Control Logic, Inc.
DARTEX Div. of Tally Corp.
Data-link Corp.
Data Operations Inc.
Digitronics Corp.
Diversified Integration of Data Services
EDCO Data Processing Corp.
Engineered Electronics Co.
General Electric Co., Information Systems Marketing Operation (ISMO)

Interdata
Logic Corp.
The National Cash Register Co.
Philco-Ford Corp.
Pivan Engineering Co.
SAID, Inc.
Superior Data Processing Service
Tally Corp.
Tape Tabulating Inc.
Universal Comptronics Corp.
Wild & Assoc., Inc.
Wiltek, Inc.

C29. CONVERTERS, MAGNETIC TAPE TO MAGNETIC TAPE

Beckman Instruments, Inc.
The Computer Exchange, Inc.
Control Logic, Inc.
DARTEX Div. of Tally Corp.
Data-link Corp.
Data Processing Exchange, Inc.
DataStation/Los Angeles
Data Systems Corp.
Detroit IPC
Digitronics Corp.
Diversified Integration of Data Services
Engineered Electronics Co.
General Electric Co., Information Systems Marketing Operation (ISMO)
Interdata
Johnson Computing & Tabulating Corp.
Keltec Industries, Inc., Alexandria Div.
Logic Corp.
Mactex
Marksmen, Inc.
The Matrix Corp., Computer Services Div.
Memphis Methods & Tabulating Service
Mohawk Data Sciences Corp.
The National Cash Register Co.
Pastoriza Electronics Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
SAID, Inc.
Superior Data Processing Service
Tally Corp.
Universal Comptronics Corp.
Wild & Assoc., Inc.
Wiltek, Inc.
Wyoming Electrodata Corp.

C30. CONVERTERS, PAPER TAPE TO CARD

The Acratod Co.
The Automation Co.
Control Data Corp.
Control Logic, Inc.
Data-link Corp.
Data Processing Exchange, Inc.
Data Processing Service
Diversified Integration of Data Services
DPS, Inc.
EDCO Data Processing Corp.
El Paso Data Services, Inc.
Emtech Research Products Corp.
Friden, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Howard's Automatic Devices
Interdata
Johnson Computing & Tabulating Corp.

Keltec Industries, Inc., Alexandria Div.
Litton Electronic Business Systems
Logic Corp.
Mactex
Marshall, Roger D.
Mechanized Business Inc. (MBI)
Memphis Methods & Tabulating Service
The National Cash Register Co.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Roytron
SAID, Inc.
R. Edward Stemm, Inc.
Superior Data Processing Service
Systems Data Processing Co.
Tally Corp.
Tape Tabulating Inc.
Robert V. Thoren Co.
Universal Comptronics Corp.

C31. CONVERTERS, PAPER TAPE TO MAGNETIC TAPE

Ampex Corp., Computer Products Div.
Control Data Corp.
Control Logic, Inc.
DARTEX Div. of Tally Corp.
Data Operations Inc.
Data Systems Corp.
Digi-Data Corp.
Digitronics Corp.
EDCO Data Processing Corp.
Engineered Electronics Co.
General Electric Co., Information Systems Marketing Operation (ISMO)
Interdata
Johnson Computing & Tabulating Corp.
Logic Corp.
Mactex
Marksmen, Inc.
Marshall, Roger D.
Michigan Business Machines
Mohawk Data Sciences Corp.
The National Cash Register Co.
Pacific Data Processing Co.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
SAID, Inc.
Tally Corp.
Tape Tabulating Inc.
Robert V. Thoren Co.
Universal Comptronics Corp.
Wild & Assoc., Inc.

C32. CORES

Electronic Memories, Inc.
Fabri-Tek Inc.
Ferroxcube Corp.
Lockheed Electronics Co., Avionics and Industrial Products Div.
The National Cash Register Co.
RCA Components and Devices Div.

C33. CORES, FERRITE

Ampex Corp., Computer Products Div.
Burroughs Corp., Electronic Components Div.
Data Machines, Inc.
Electronic Memories, Inc.

Fabri-Tek Inc.
Fairchild Semiconductor
Ferroxcube Corp.
Indiana General Corp., Electronics Div.
Interdata
International Electro-Magnetics, Inc.
Lockheed Electronics Co., Avionics and Industrial Products Div.
The National Cash Register Co.
Pivan Engineering Co.
Raytheon Computer
RCA Components and Devices Div.
Wild & Assoc., Inc.

C34. CORES, MAGNETIC

Ampex Corp., Computer Products Div.
Data Processing Exchange, Inc.
Fabri-Tek Inc.
Ferroxcube Corp.
Indiana General Corp., Electronics Div.
International Electro-Magnetics, Inc.
The National Cash Register Co.
Pivan Engineering Co.
Wild & Assoc., Inc.

C35. COUNTERS

Beckman Instruments, Inc.
Computer Supplies Co.
F. & F. Enterprises, Inc.
The Hickok Electrical Instrument Co.
Litton Electronic Business Systems
Mast Development Co.
The National Cash Register Co.
R. Edward Stemm, Inc.
Veeder-Root
Veeder-Root, Electronic Controls Div.

C36. COUNTERS, ELECTRONIC

Aerometrics
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
Chrono-log Corp.
Components Corp.
Computer Logic Corp.
Control Logic, Inc.
Data Processing Exchange, Inc.
DI/AN Controls, Inc.
Dymec
E D P Corp.
Electronic Engineering Co. of Calif.
Fairchild Semiconductor
General Radio Co.
Hewlett-Packard
The Hickok Electrical Instrument Co.
Interdata
Litton Electronic Business Systems
Logic Corp.
Michigan Business Machines
Moore Business Forms, Inc.
The National Cash Register Co.
Non-Linear Systems, Inc.
Philco-Ford Corp.
Pivan Engineering Co.
R. Edward Stemm, Inc.
Systron-Donner Corp.
Veeder-Root, Electronic Controls Div.
Walkirt Co.

Products and Services

Wang Laboratories Inc.
Wild & Assoc., Inc.
Wyle Laboratories
Zuse KG

C37. COUNTERS, MECHANICAL

Chrono-log Corp.
Computer Supplies Co.
Data Processing Exchange, Inc.
Electron Ohio Inc.
F. & F. Enterprises, Inc.
Friden, Inc.
The A. W. Haydon Co.
Litton Electronic Business Systems
Mast Development Co.
M. L. Councell Associates, Inc.
The National Cash Register Co.
NUMEX Corp.
Systematics of Missouri, Inc.
Veeder-Root

C38. COURSES BY MAIL (COMPUTER FIELD)

Alverson-Draughon College
American Institute of Technology
Business Machines Institute
Combined Data Group Inc.
Comput-A-Credit, Inc.
Computer Systems Division
Computer Usage Development Corp.
Electronic Computer Programming Institute of Chicago
Electronic Computer Programming Institute of Columbus, Inc.
Electronic Computer Programming Institute of Detroit
Electronic Computer Programming Institute of Milwaukee, Wis.
Electronic Computer Programming Institute of North-eastern Ohio, Inc.
Electronic Computer Programming Institute of West-Rockl., N.Y.
Kansas City College of Automation
Mathematical Engineering Associates, Inc.
M.T.I. Business Schools
Oklahoma School of Banking and Business
Philco-Ford Corp.
Toledo Technical College

C39 - 42, COURSES, TRAINING AND INSTRUCTION

(See ROSTER of COURSES, TRAINING, or INSTRUCTION in COMPUTING, PROGRAMMING, or SYSTEMS)

D1. DATA PROCESSING ACCESS- ORY EQUIPMENT

Addo-X
Addo-X Sales Corp.
Addressograph Multigraph Corp.
Aerometrics
All Data Processing Machines, Inc.
Ampex Corp., Computer Products Div.
Applied Industrial Dynamics, Inc.
The Automation Co

Bay State E.D.P. Accessories
Beckman Instruments, Inc.
Beemak Plastics
Benson-Lehner Corp.
Besco Equipment & Systems Co., Inc.

Bryant Computer Products
The Bunker-Ramo Corp., Business & Industry Div.
Camwil Inc.
Celestronics Inc.
Center Inc.
Colorado Instruments, Inc.
Comput-A-Credit, Inc.
Computer Exchange, Inc.
Computer Supplies Co.
Computrol Systems, Inc.
Connecticut Technical Corp.
COM-SHARE Inc.
Control Data Corp.
M. L. Councell Associates, Inc.

Creed & Co. Ltd.
Cyber-Tronics, Inc.
Cybetronics, Inc.
Cycle Equipment Co.
DA-PEX
Data-link Corp.
Data Machines, Inc.
Data Management Associates, Inc.
Data Processing Exchange, Inc.
Data Processors Supply Co.
Data Products Corp.
Data Products Sales Corp.
Data Supplies, Inc.
Datronic Rental Corp.
DI/AN Controls, Inc.
Diebold Inc.
Digital Devices, Inc.
DISCON Corp.
Mo Dorman Co.
Dresser Products, Inc.
Dymec
EDACO, Inc.
Electro-Mechanical Research, Inc.
Electron Ohio Inc.
Electronic Development Corp.
Electronic Engineering Co. of Calif.

Emtech Research Products Corp.
Engineered Electronics Co.
Fairchild Space & Defense Systems
Friden, Inc.
General Electric Co., Information Systems Marketing Operations (ISMO)
General Electric Co., Printer-Reader Bus. Sect.
Geo Space Corp., Computer Div.
Hallmarkets International
Hewlett-Packard
Hewlett-Packard Co., Mountain View Div.
The Hickok Electrical Instrument Co.
Howard's Automatic Devices
Indel Inc.
Invac Corp.
Wilson Jones Co.
Jonker Corp.
Kansas City College of Automation
Keltec Industries, Inc., Alexandria Div.
Liebert Corp.
Litton Electronic Business Systems
Logic Corp.
Machine Accounting Supply Co. of Tenn.
Mactex
Gene Maior & Assoc. Inc.
L. A. Marler & Co.
Mauchly Honig Time Sharing

Associates, Inc.
Michigan Business Machines
Monarch Metal Products, Inc.
National Blank Book Co.
The National Cash Register Co.
National Computer Systems, Inc.
Edward Ochman Systems
Ohio Envelope Co.
Ohr-tronics, Inc.
Philco-Ford Corp.
The Pioneer Electric & Research Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Preferred Tabulating Service Inc.
Protolab Extractors
Record Control Systems
Records Systems, Inc.
Robins Data Devices, Inc.
Scientific Control Corp.
Scientific Data Systems, Inc.
Sooner Business Systems
Standard Register Co.
R. Edward Stemm, Inc.
Stromberg-Carlson Corp.
Sturgis Newport Business Forms
Superior Data Processing Service
Systems Engineering Laboratories, Inc.
TAB Products Corp.
TAB Products of Ill.
Tally Corp.
Tekform, Inc.
Theta Instrument Corp.
Tola Specialties
Towson Laboratories, Inc.
Transistor Electronics Corp.
United States Tabulating Binder Corp.
U.S. Dielectric, Inc.
UNIVAC Div., Sperry Rand Corp.
Virginia Panel Corp.
Western Addo-X, Inc.
George T. Zurewich Inc.

D2. DATA PROCESSING MACHINERY (see also Specific Types)

Addo-X Sales Corp.
Bell Telephone Mfg. Co., Automation Systems Div.
Cheshire Inc.
Comput-A-Credit, Inc.
The Computer Exchange, Inc.
Computer Supplies Co.
Computrol Systems, Inc.
Connecticut Technical Corp.
Continental Computer Associates, Inc.
Cyber-tronics, Inc.
DARTEX Div. of Tally Corp.
Data Automation Co., Inc.
Data Center Inc.
Data Machines, Inc.
Data Operations Inc.
Data Processing Exchange, Inc.
Data Products Sales Corp.
Datastation of New York, Inc.
Datronic Rental Corp.
Mo Dorman Co.
EDP Leasing Corp.
Electro-Mechanical Research, Inc.
Electronic Business Machines Co.
Emtech Research Products Corp.
Erds & Morgan Inc.
Friden, Inc.
General Electric Co., Printer-Reader Bus. Sect.
Hewlett Packard Co., Mountain View Div.
Honeywell Electronic Data

Processing Div.
Information International Inc.
Interdata
Input, Inc.
Kansas City College of Automation
MAI Equipment Corp.
Gene Maior & Assoc. Inc.
Mohawk Data Sciences Corp.
Moore Associates Inc.
The National Cash Register Co.
Pacific Data Systems, Inc.
Potter Instrument Co., Inc.
Raytheon Computer
SAID, Inc.
Scientific Data Systems, Inc.
Stromberg-Carlson Corp.
Superior Data Processing Service
TAB Products Corp.
Wild & Assoc., Inc.
George T. Zurewich Inc.

D3. DATA RECORDING EQUIPMENT

Adage, Inc.
Addo-X
Addo-X Sales Corp.
Addressograph Multigraph Corp.
All Data Processing Machines, Inc.
Ampex Corp., Computer Products Div.
Argonaut Associates, Inc.
The Automation Co.
Beckman Instruments, Inc.
Benson-Lehner Corp.
Bryant Computer Products
Colorado Instruments, Inc.
Computer Systems Division
Connecticut Technical Corp.
Consolidated Electrodynamics Corp.
Control Data Corp.
Cybetronics, Inc.
Dashew Business Machines, Inc.
Data Center Inc.
Datacraft Inc.
Data Machines, Inc.
Datamedia Corp.
Data Processing Exchange, Inc.
Data Systems Corp.
DI/AN Controls, Inc.
Digi-Data Corp.
Digitronics Corp.
DISCON Corp.
Dymec
Electron Ohio Inc.
Electronic Development Corp.
Electronic Engineering Co. of Calif.
Emtech Research Products Corp.
Engineered Electronics Co.
Fairchild Space & Defense Systems
Friden, Inc.
General Electric Co., Printer-Reader Bus. Sect.
Geo Space Corp., Computer Div.
Hallmarkets International
Hewlett-Packard
Hewlett-Packard Co., Mountain View Div.
Information International Inc.
Interdata
Invac Corp.
KRS Instruments
Litton Industries Electron Tube Div.
Logic Corp.
Marksmen, Inc.
L. A. Marler & Co.
Marshall, Roger D.
Mohawk Data Sciences Corp.
Moore Associates Inc.
The National Cash Register Co.

Products and Services

Non-Linear Systems, Inc.
Ohr-tronics, Inc.
Pacific Data Processing Co.
Petty Laboratories Inc.
Pivan Engineering Co.
Potter Instrument Co., Inc.
The Standard Register Co.
R. Edward Stemm, Inc.
Straza Industries
Stromberg-Carlson Corp.
Stromberg-Carlson Corp., Data Products Div.
Tally Corp.
Tech Serv, Inc.
Technical Measurement Corp.
Teletype Corp.
Theta Instrument Corp.
3M Company, Revere-Mincom Div.
Universal Comptronics Corp.
Veeder-Root
Veeder-Root, Electronic Controls Div.
Wang Laboratories Inc.
Wild & Assoc., Inc.
Wyoming Electrodata Corp.

D4. DATA REDUCTION EQUIPMENT

Adage, Inc.
All Data Processing Machines, Inc.
Ampex Corp., Computer Products Div.
Beckman Instruments, Inc.
Benson-Lehner Corp.
CALMA Co.
Control Data Corp.
Data Machines, Inc.
Data Processing Exchange, Inc.
Digital Devices, Inc.
Digital Equipment Corp.
DISCON Corp.
Dymec
Electronic-Mechanical Research, Inc.
Electronic Development Corp.
Electronic Engineering Co. of Calif.
Emtech Research Products Corp.
Engineered Electronics Co.
Kurt Enslein
Fairchild Space & Defense Systems
Information International Inc.
Interdata
Logic Corp.
The National Cash Register Co.
Ohr-tronics, Inc.
Pivan Engineering Co.
Simulators, Inc.
Systron-Donner Corp.
Wang Laboratories
Wild & Assoc., Inc.

D5. DELAY LINES (Computer Types)

Aladdin Electronics
The Artronic Instrument Co.
Beckman Instruments, Inc.
Computer Devices Corp.
Control Data Corp.
DI/AN Controls, Inc.
Digital Devices, Inc.
El-Rad Manufacturing Co.
Hamilton, Grayden & Flemmer, Inc.
The National Cash Register Co.
Scientific Data Systems, Inc.
Systems Engineering Laboratories, Inc.

D6. DESK CALCULATORS

Addo-X Sales Corp.

All Data Processing Machines, Inc.
The Automation Co.
Comput-A-Credit, Inc.
Control Data Corp.
Data Acquisition Corp.
Data Processing Exchange, Inc.
Emtech Research Products Corp.
Felsenthal Instruments Co.
Friden, Inc.
Litton Electronic Business Systems
Mathatronics
Superior Data Processing Service
Victor Comptometer Corp., Business Machines Group
Wang Laboratories, Inc.
Western Addo-X, Inc.
Wyle Laboratories

D7. DIFFERENTIAL ANALYZERS

Aerometrics
Control Data Corp.
Digital Equipment Corp.
Geo Space Corp., Computer Div.
GPS Instrument Co., Inc.
Interdata

D8. DISCS, MAGNETIC

Bryant Computer Products
The Computer Exchange, Inc.
Computer Technology Ltd.
Control Data Corp.
Data Machines, Inc.
Datametrics Corp.
Data Products Corp.
Data Products Sales Corp.
Data Supplies, Inc.
Digital Development Corp.
Digital Equipment Corp.
DPS, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
General Precision, Inc., Librascope Group
Hamilton, Grayden & Flemmer, Inc.
Honeywell Electronic Data Processing Div.
Honeywell Inc., Computer Control Div.
International Electro-Magnetics, Inc.
MAC Panel Co.
Memorex Corp.
The National Cash Register Co.
Scientific Data Systems, Inc.
Time Brokers, Inc.
Wild & Assoc., Inc.
Zuse KG

D9. DISPLAYS

Avtron Manufacturing, Inc.
Beckman & Whitley
Beckman Instruments, Inc.
Bolt Beranek and Newman Inc.
The Bunker-Ramo Corp.
Comput-A-Credit, Inc.
Computer Technology Ltd.
Control Data Corp.
Data Machines, Inc.
Dialight Corp.
Digital Equipment Corp.
DISCON Corp.
E D P Corp.
Emtech Research Products Corp.
General Electric Co., Information Systems Marketing Operation (ISMO)

Honeywell Electronic Data Processing Div.
Information Displays, Inc.
Information International Inc.
Litton Industries Electron Tube Div.
Logic Corp.
Motorola Inc., Government Electronics Div.
The National Cash Register Co.
NUMEX Corp.
Philco-Ford Corp.
Pivan Engineering Co.
Raytheon Computer
Scientific Data Systems, Inc.
R. Edward Stemm, Inc.
Stromberg-Carlson Corp., Data Products Div.
Systems Engineering Laboratories, Inc.
Theta Instrument Corp.
Transistor Electronics Corp.
Veeder-Root, Electronic Controls Div.
Wild & Assoc., Inc.

D10. DRUMS, MAGNETIC

Bryant Computer Products
Computer Technology Ltd.
Control Data Corp.
Data Machines, Inc.
Datametrics Corp.
Data Processing Exchange, Inc.
Digital Development Corp.
Digital Equipment Corp.
Electron Ohio Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Hamilton, Grayden & Flemmer, Inc.
Honeywell Electronic Data Processing Div.
Honeywell Inc., Computer Control Div.
Information Research Associates, Inc.
International Electro-Magnetics, Inc.
Litton Electronic Business Systems
Systems Engineering Laboratories, Inc.
Vermont Research Corp.
Wild & Assoc., Inc.
Zuse KG

E1. ECONOMIC RESEARCH

Aerojet-General Corp., Industrial Systems Div.
Aerojet-General Corp., Sacramento Plant
Aerojet-General Corp., Von Karman Ctr.
Alpha Omega Computer Systems Automated Information, Inc.
Ernest E. Blanche & Associates, Inc.
Bowles & Tillinghast, Inc.
Brandon Applied Systems, Inc.
C-E-I-R, Inc.
Computer Sciences Corp.
Data Perspectives, Inc.
Data Processing Consultants, Inc.
Delta Data Systems, Inc.
Diversified Integration of Data Services
Documentation Inc.
EBASCO Services Inc.
Electronic Computer Programming Institute of West-Rockl., N.Y.

Kurt Enslein
Halbrecht Assoc., Inc.
Hanover & Selwyn Co.
Hollander Assoc.
Infret Corp.
Innovation Consultants, Inc.
International Data Corp.
Kaman Nuclear
Wm. M. Kordtsiemon & Assoc.
Kyros Corp.
Management Research International, Inc.
Mathematical Engineering Associates, Inc.
Orchard-Hays & Co., Inc.
Pers Inc.
Planning Research Corp.
Randolph Computer Corp.
Hub S. Ratliff, Data Processing Consultants
SAID, Inc.
The Service Bureau Corp.
System Development Corp.
System Sciences, Inc.
Technical Operations, Inc.
Telecheck Hawaii, Inc.
UNIVAC DP Centers
University Computing Co.
URS Corp.
Martin W. Wyrod Assoc.

E2. EMPLOYMENT AGENCIES

Brentwood Personnel Associates
Halbrecht Assoc., Inc.
IB Personnel Service Agency Inc.
F. L. Mannix & Co., Inc.
National Manpower Register Systemat
Universal Systems & Programming Service
Ed Younger & Assoc., Inc.

F1. FACSIMILE EQUIPMENT

Beckman & Whitley
Beckman Instruments, Inc.
Data Perspectives, Inc.
Documentation Inc.
Infotran, Inc.
Michigan Business Machines

F2. FINANCIAL SERVICES

(see also Leasing Services)

Alpha Omega Computer Systems
Austin Data Processing Service Inc.
Automated Services, Inc.
Automatic Accounting Systems, Inc.
The Bunker-Ramo Corp., Business & Industry Div.
Comput-A-Credit, Inc.
Computer Center
The Computer Center of Southern New England
The Computer Exchange, Inc.
Computer Service Consultants, Inc.
Computer Supplies Co.
Continental Computer Associates, Inc.
Cyber-Tronics, Inc.
Deltaic Rental Corp.
Mo Dorman Co.
EDP Leasing Corp.
Fedder Data Centers, Inc.
Information Processing Systems, Inc.
Innovation Consultants, Inc.
Wm. M. Kordtsiemon & Assoc.

Products and Services

Mauchly Techniques, Inc.
Milner Bros. Prods.
Randolph Computer Corp.
Tape Tabulating Inc.
Telecheck Hawaii, Inc.
University Computing Co.

F3. FLOORS (Computer Room)

Acoustics Inc.
All Data Processing Machines,
Inc.
Applied Industrial Dynamics,
Inc.
Besco Equipment & Systems Co.,
Inc.
Joseph K. Blum Co.
Construction Products, Inc.
M. L. Councell Associates, Inc.
Created Space, Inc.
Data Processing Supplies
Data Processors Supply Co.
Data Supplies, Inc.
Floating Floors Inc.
Howard's Automatic Devices
TAB Products of Ill.
Washington Aluminum Co., Inc.

F4. FORMS, CONTINUOUS

Allen Hollander Co., Inc.
Autographic Business Forms, Inc.
Baltimore Business Forms, Inc.
Bay State E.D.P. Accessories
Besco Equipment & Systems Co.
Inc.
W. H. Brady Co.
Business Supplies Corp. of
America
Columbia Ribbon & Carbon Mfg.
Co., Inc.
Combined Data Group Inc.
Computer Label Co.
Computer Supplies Co.
Computer Systems Division
Data Documents/Inc.
Data Forms Co., Inc.
Data Management Associates, Inc.
Data Supplies, Inc.
Efficiency Bindery Inc.
Ennis Business Forms, Inc.
Federal Business Products
FORMCO
Forms Inc.
Graphic Controls Corp.
Philip Hano Co., Inc.
Jack M. Harrison & Assoc.
I. D. R. Co.
Machine Accounting Supply Co.
of Tenn.
Moore Business Forms, Inc.
Multiforms, Inc.
Murray & Heister, Inc.
The National Cash Register Co.
Ohio Envelope Co.
Old Town Corp.
Paper Products Div., 3M Co.
Record Control Systems
Russell Business Forms Inc.
The Standard Register Co.
Superior Data Processing Service
Wheelindex, Inc.
Williams & Marcus Co.

F5. FORMS HANDLING EQUIPMENT

The Acratod Co.
All Data Processing Machines,
Inc.
Bay State E. D. P. Accessories
Data Processing Exchange, Inc.
Data Supplies, Inc.
Diebold Inc.
Mo Dorman Co.

EDACO, Inc.
Federal Business Products
Hallmarkets International
Moore Business Forms, Inc.
The National Cash Register Co.
Record Control Systems
Sooner Business Systems
The Standard Register Co.
Superior Data Processing Serv-
ice
TAB Products Corp.
TAB Products of Ill.
U.S. Tabulating Binder Corp.

G1. GENERATORS, FUNCTION

Beckman Instruments, Inc.
COMCOR, Inc.
Dymec
Elgenco, Inc.
Exact Electronics
General Computers Inc.
General Radio Co.
Hewlett-Packard
The Hickok Electrical Instru-
ment Co.
Honeywell Inc., Computer Con-
trol Div.
Information Displays, Inc.
Logic Corp.
System Computers Ltd.
Systron-Donner Corp.
U.S. Motors Corp.
West Eleven Inc.
Weston Instruments, Inc.

G2. GENERATORS, ELECTRONIC

Applied Dyanmics, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
Computer Test Corp.
Dymec
Electronic Modules Corp.
Elgenco, Inc.
Exact Electronics
General Computers Inc.
General Radio Co.
Hewlett-Packard
The Hickok Electrical Instru-
ment Co.
Honeywell Inc., Computer Con-
trol Div.
Industrial Products Group
Information Displays, Inc.
Logic Corp.
Scientific Data Systems, Inc.
Simulators, Inc.
System Computers Ltd.
Systron-Donner Corp.
Veeder-Root, Electronic Con-
trols Div.
West Eleven Inc.
Weston Instruments, Inc.

G3. GENERATORS, MECHANICAL

Veeder-Root

H1. HEADS, MAGNETIC

Bryant Computer Products
Computer Supplies Co.
Consolidated Electrodynamics
Corp.
Control Data Corp.
Ferroxcube Corp.
Geo Space Corp.
Indel Inc.
Indiana General Corp., Elect-
ronics Div.
International Electro-Magne-
tics, Inc.

Litton Electronic Business
Systems
Magnusonic Devices, Inc.
The National Cash Register Co.
Norton Associates, Inc.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Robins Data Devices, Inc.
Vermont Research Corp.
Wild & Assoc., Inc.

H2. HEADS, READING

Benson-Lehner Corp.
Bryant Computer Products
Computer Supplies Co.
Ferroxcube Corp.
Geo Space Corp.
Indiana General Corp., Elect-
ronics Div.
International Electro-Magne-
tics, Inc.
Litton Electronic Business
Systems
Magnusonic Devices, Inc.
The National Cash Register Co.
Norton Associates, Inc.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Precision Instrument Co.
Tally Corp.
Vermont Research Corp.
Wild & Assoc., Inc.

H3. HEADS, RECORDING

Bryant Computer Products
Computer Supplies Co.
Consolidated Electrodynamics
Corp.
Ferroxcube Corp.
Geo Space Corp.
Indiana General Corp., Elect-
ronics Div.
Information Research Assoc-
iates, Inc.
International Electro-Magnet-
ics, Inc.
Litton Electronic Business
Systems
Magnusonic Devices, Inc.
The National Cash Register Co.
Norton Associates, Inc.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Precision Instrument Co.
Robins Data Devices, Inc.
Vermont Research Corp.
Wild & Assoc., Inc.

I1. INFORMATION ENGINEERING

Aerojet-General Corp., Sacra-
mento Plant
Aerojet-General Corp., Von
Karman Ctr.
AGS Computers, Inc.
Anagram Corp.
Applied Data Research, Inc.
Aries Corp.
Automated Business Records,
Inc.
Automated Information, Inc.
Biz-Matic Data Control Cen-
ter's Inc.
Bryant Computer Products
The CiMS Group, Inc.
Comput-A-Credit, Inc.
Computer Command & Control
Co.
The Computer Exchange, Inc.
Computer Sciences Corp.
Computer Services Co.
Control Data Corp.

Control Technology, Inc.
Data Dynamics, Inc.
Data Operations Inc.
Documentation Inc.
Document Control Associates
EBASCO Services Inc.
Ecco Consulting Inc.
Emtech Research Products Corp.
Engineered Electronics Co.
Kurt Enslin
General Precision, Inc., Li-
brascoppe Group
Herner & Co.
Hollander Assoc.
Informatics Inc.
Information Development Co.
Information Dynamics Corp.
Information Management, Inc.
Information Research Assoc-
iates, Inc.
Information Systems Co. (Div.
Lear Siegler Co.)
Information Sciences (Divi-
sion, Brown Engineering Co.,
Inc.)
Infotran, Inc.
Infret Corp.
Integrated Business Methods,
Inc.
Keystone Computer Assoc., Inc.
Wm. M. Kordsiemon & Assoc.
Logic Corp.
Mathematical Engineering
Associates, Inc.
The Matrix Corp., Computer
Services Div.
Mauchly Systems, Inc.
Mauchly Techniques, Inc.
Merle Thomas Corp.
The National Cash Register Co.
National Data Processing Corp.
Orchard-Hays & Co., Inc.
Pers Inc.
Philco-Ford Corp.
Planning Research Corp.
Programming Methods, Inc.
Programming Services, Inc.
Hub S. Ratliff, Data Process-
ing Consultants
Reliable Systems Inc.
SAID, Inc.
Scantlin Electronics, Inc.
The Service Bureau Corp.
Sooner Business Systems
Standards, Inc.
System Sciences, Inc.
Telecheck Hawaii, Inc.
Trident Laboratories, Inc.
URS Corp.
Western Operations, Inc.
Wolf Research and Development
Corp.
Martin W. Wyrod Assoc.

I2. INFORMATION RETRIEVAL DEVICES

All Data Processing Machines,
Inc.
The Bunker-Ramo Corp.
The Bunker-Ramo Corp., Busi-
ness & Industry Div.
Comput-A-Credit, Inc.
Computer Sharing Inc.
Computer Usage Development
Corp.
Control Data Corp.
Data Mangement Associates,
Inc.
Diebold Inc.
Digital Equipment Corp.
Diversified Integration of
Data Services
Fairchild Space & Defense
Systems

Products and Services

GPL Div., General Precision, Inc.
Herner & Co.
Honeywell Electronic Data Processing Div.
Information Displays, Inc.
Information International Inc.
Infret Corp.
Invac Corp.
Jonker Corp.
Wm. M. Kordsiemon & Assoc.
Logic Corp.
Marshall, Roger D.
Mast Development Co.
Moog Inc. Industrial Div.
The National Cash Register Co.
Ohr-tronics, Inc.
Orchard-Hays & Co., Inc.
Potter Instrument Co., Inc.
Randomatic Data Systems Inc.
Record Control Systems
R. Edward Stemm, Inc.
Straza Industries
Stromberg-Carlson Corp.
Stromberg-Carlson Corp., Data Products Div.
TAB Products of Ill.
UNIVAC Div., Sperry Rand Corp.
URS Corp.
Wild & Assoc., Inc.
Zuse KG

13. INTEGRATORS

Beckman Instruments, Inc.
COMCOR, Inc.
Geo Space Corp.
GPS Instrument Co., Inc.
Keltec Industries, Inc., Alexandria Div.
System Computers Ltd.
Systron-Donner Corp.

14. INTEGRATORS, ELECTRONIC

Argonaut Associates, Inc.
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
Data Processing Exchange, Inc.
Dymec
General Precision, Inc., Librascope Group
Geo Space Corp.
GPS Instrument Co., Inc.
Pivan Engineering Co.
Scientific Data Systems, Inc.
Simulators, Inc.

15. INTEGRATORS, MECHANICAL

Argonaut Associates, Inc.
Data Processing Exchange, Inc.
Moog Inc. Industrial Div.

16. INVENTORY SYSTEMS

AAA Data Processing Center, Inc.
Aerojet-General Corp., Industrial Systems Div.
AGS Computers, Inc.
Alpha Omega Computer Systems
Aries Corp.
Austin Data Processing Service Inc.
Auto Data Corp.
Automated Data Associates
Carter & Associates
Celestronics Inc.
Cimsco Data Processing Co.
Combined Data Group Inc.
Computer Applications Inc.

Computer Sciences Corp.
Computer Services Co.
Computer Service Consultants, Inc.
Computer Sharing Inc.
Computer Usage Development Corp.
Dallas Tabulating Service, Inc.
Data Control Services
Data Operations Inc.
Diebold Inc.
Distributors Data Processing
Diversified Integration of Data Services
Document Control Associates
Electron Ohio Inc.
Fisher-Stevens Inc.
Jack M. Harrison & Assoc.
Information Dynamics Corp.
Information Management, Inc.
Information Sciences (Division, Brown Engineering Co., Inc.)
Infotran, Inc.
Inland Computer Service
Institute of Computer Technology, Inc.
Interdata
Keyed Systems & Service, Inc.
Wm. M. Kordsiemon & Assoc.
E. H. Kramer & Co.
Logic Corp.
Mauchly Techniques, Inc.
Medcomp Research Corp.
Merle Thomas Corp.
Michigan Business Machines
The National Cash Register Co.
National Data Processing Corp.
Neat Data Processing Services
Edward Ochman Systems
Ohr-tronics, Inc.
Orchard-Hays & Co., Inc.
Pers Inc.
Planning Research Corp.
Record Control Systems
Reliable Systems Inc.
Sooner Business Systems
Standards, Inc.
Superior Data Processing Service
System Sciences, Inc.
Systems Data Processing Co.
Telecheck Hawaii, Inc.
UNIVAC DP Centers
URS Corp.
Wheeldex, Inc.
Wolf Research and Development Corp.
Zuse KG.

K1. KEYBOARDS

Bolt Beranek and Newman Inc.
The Bunker-Ramo Corp., Business & Industry Div.
Celestronics Inc.
Clary Datacomp Systems
Colorado Instruments, Inc.
Comput-A-Credit, Inc.
The Computer Exchange, Inc.
Computer Sharing Inc.
Computer Technology Ltd.
Connecticut Technical Corp.
Data Machines, Inc.
DI/AN Controls, Inc.
Friden, Inc.
Hamilton, Grayden & Flemmer, Inc.
Honeywell Inc., Computer Control Div.
Invac Corp.
Logic Corp.
Gene Maior & Assoc. Inc.
L.A. Marler & Co.

Mauchly Honig Time Sharing Associates, Inc.
Michigan Business Machines
The National Cash Register Co.
Ohr-tronics, Inc.
Scantlin Electronics, Inc.
Scientific Data Systems, Inc.
Sealectro Corp.
Selective Data Processing
Soroban Engineering, Inc.
R. Edward Stemm, Inc.
System Computers Ltd.
Transistor Electronics Corp.
Wild & Assoc., Inc.
Wyle Laboratories

L1. LEASING SERVICES

(See SPECIAL ROSTER of Leasing or Financial Services on Page 64)

L2. LIGHTS, INDICATOR

Data Systems Corp.
Dialight Corp.
Drake Mfg. Co.
Hamilton, Grayden & Flemmer, Inc.
Honeywell Inc., Computer Control Div.
The National Cash Register Co.
Transistor Electronics Corp.
USECO Div., Litton Industries

M1. MAGNETIC INK IMPRINTING

Addressograph Multigraph Corp.
Baltimore Business Forms, Inc.
Business Supplies Corp. of America
Data Management Associates, Inc.
Data Products Sales Corp.
Data Supplies, Inc.
Ennis Business Forms, Inc.
FORMCO
Forms Inc.
Moore Business Forms, Inc.
Multiforms, Inc.
The National Cash Register Co.
Sturgis Newport Business Forms
Willis and Pedersen, DP Supply Div.

M2. MEMORY SYSTEMS

Aerojet-General Corp., Industrial Systems Div.
Ampex Corp., Computer Products Div.
Burroughs Corp., Electronic Components Div.
Bryant Computer Products
Computer Devices Corp.
The Computer Exchange, Inc.
Computer Technology Ltd.
Control Data Corp.
DARTEX Div. of Tally Corp.
Data Machines, Inc.
Datametrics Corp.
Data Products Corp.
Data Products Sales Corp.
Decision Control, Inc./Data Machines, Inc.
DI/AN Controls, Inc.
Digital Development Corp.
Digital Devices, Inc.
Digital Equipment Corp.
Electronic Memories, Inc.
Electron Ohio Inc.
Engineered Electronics Co.

Fabri-Tek Inc.
Fairchild Semiconductor
Ferrocube Corp.
General Precision, Inc., Librascope Group
Honeywell Inc., Computer Control Div.
Lockheed Electronics Co., Avionics and Industrial Products Div.
Moore Associates Inc.
The National Cash Register Co.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Raytheon Computer
RCA Components and Devices Div.
Scientific Data Systems, Inc.
Sealectro Corp.
R. Edward Stemm, Inc.
Vermont Research Corp.
Wang Laboratories
Wild & Assoc., Inc.

M3. MULTIPLIERS

Applied Dynamics, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
Geo Space Corp.
GPS Instrument Co., Inc.
The National Cash Register Co.
R. Edward Stemm, Inc.
Systron-Donner Corp.

M4. MULTIPLIERS, ELECTRONIC

Applied Dynamics, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
GPS Instrument Co., Inc.
The National Cash Register Co.
System Computers Ltd.
Systron-Donner Corp.

M5. MULTIPLIERS, SERVO

Argonaut Associates, Inc.
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
Engineered Electronics Co.
Geo Space Corp.
GPS Instrument Co., Inc.
The National Cash Register Co.
Scientific Data Systems, Inc.
Simulators, Inc.
System Computers Ltd.
Systron-Donner Corp.
Wild & Assoc., Inc.

O1. OFFICE MACHINES

ADDO-X Sales Corp.
Addressograph Multigraph Corp.
All Data Processing Machines, Inc.
The Automation Co.
Creed & Co. Ltd.
Data Processing Exchange, Inc.
Mo Dorman Co.
Electronic Business Machines Co.
Emtech Research Products Corp.
Friden, Inc.
Information Research Associates, Inc.
Infotran, Inc.
Wm. M. Kordsiemon & Assoc.
Litton Electronic Business Systems

Products and Services

Logic Corp.
L. A. Marler & Co.
Michigan Business Machines
The National Cash Register Co.
Victor Comptometer Corp., Business Machines Group
Wang Laboratories
Western Addo-X, Inc.
Wheeldex, Inc.
Willis and Pedersen, DP Supply Div.

02. OPERATIONS RESEARCH

AAA Data Processing Center, Inc.
Aerojet-General Corp., Industrial Systems Div.
Aerojet-General Corp., Sacramento Plant
Aerojet-General Corp., Von Karman Ctr.
Aries Corp.
Barron Data Systems, Inc.
Frank R. Berman
Biz-Matic Data Control Center's Inc.
Ernest E. Blanche & Associates, Inc.
Bowles & Tillinghast, Inc.
The CiMS Group, Inc.
Combined Data Group Inc.
Computer Applications Inc.
Computer Sciences Corp.
Computer Service Consultants, Inc.
Computer Usage Development Corp.
Computrol Systems, Inc.
Concap Computing Systems
Control Technology, Inc.
C.P. & S., Inc.
R. N. Dailey, Inc.
Data Dynamics, Inc.
Data Perspectives, Inc.
Data Processing Consultants, Inc.
Data Processing, Inc.
Delta Data Systems, Inc.
Diversified Integration of Data Services
Document Control Associates
EBASCO Services Inc.
Ecco Consulting Inc.
Fedder Data Centers, Inc.
Fisher-Stevens Inc.
Dr. Ivan Flores
Halbrecht Assoc., Inc.
Philip Hankins & Co., Inc.
Information Control Systems Inc.
Information Dynamics Corp.
Information Management, Inc.
Information Research Associates, Inc.
Information Sciences (Division Brown Engineering Co., Inc.)
Infret Corp.
Keystone Computer Assoc., Inc.
Wm. M. Kordsiemon & Assoc.
Mactex
Management Dynamics Ltd.
Management Research International, Inc.
Mathematical Engineering Associates, Inc.
Mathematischer Beratungs-und Programmierungsdienst
Mauchly Systems, Inc.
McDonnell Automation Center
Merle Thomas Corp.
Orchard-Hays & Co., Inc.
Philco-Ford Corp.
Planning Research Corp.
Hub S. Ratliff, Data Processing Consultants

Reliable Systems Inc.
Sci-Tek Computer Center Inc.
The Service Bureau Corp.
Special Studies, Inc.
System Sciences, Inc.
Technical Information Processing
Technical Operations, Inc.
Telecheck Hawaii, Inc.
UNIVAC DP Centers
University Computing Co.
URS Corp.
Westat Research, Inc.
Western Operations, Inc.
Martin W. Wyrod Assoc.
Zuse KG

P1. PANELS

All Data Processing Machines, Inc.
Applied Industrial Dynamics, Inc.
Bay State E. D. P. Accessories
Besco Equipment & Systems Co. Inc.
Computer Supplies Co.
M. L. Councell Associates, Inc.
Data Management Associates, Inc.
Data Processing Supplies
Data Supplies, Inc.
EDACO, Inc.
Felsenthal Instruments Co.
Hallmarkets International
Kansas City College of Automation
Gene Maior & Assoc. Inc.
Michigan Business Machines
Edward Ochman Systems
Record Control Systems
Records Systems, Inc.
TAB Products of Ill.

P2. PANELS, JACK

Computer Supplies Co.
M. L. Councell Associates, Inc.
Data Supplies, Inc.
Datronic Rental Corp.
EDACO, Inc.
Hallmarkets International
Kansas City College of Automation
Sealectro Corp.
Virginia Electronics Co., Inc.
Virginia Panel Corp.
Wild & Assoc., Inc.
Williams & Marcus Co.

P3. PANELS, RELAY RACK

Data Processing Exchange, Inc.
Data Products Sales Corp.
Virginia Electronics Co., Inc.
Williams & Marcus Co.

P4. PAPER TAPE

Addo-X
The Alling & Cory Co.
Applied Industrial Dynamics, Inc.
Business Supplies Corp. of America
Computer Supplies Co.
Computer Supplies, Inc.
Cycle Equipment Co.
DARTEX Div. of Tally Corp.
Data Forms Co., Inc.
Data-link Corp.
Data Products Sales Corp.

Data Supplies, Inc.
EDACO, Inc.
EDP Supply Co.
FORMCO
Friden, Inc.
General Electric Co., Printer-Reader Bus. Sect.
Howard's Automatic Devices
Invac Corp.
Keyed Systems & Service, Inc.
Litton Electronic Business Systems
L. A. Marler & Co.
National Blank Book Co.
The National Cash Register Co.
Edward Ochman Systems
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Record Control Systems
Robins Data Devices, Inc.'
Roytron
Sooner Business Systems
Soroban Engineering, Inc.
Tally Corp.
Tape Center Ltd.
Virginia Panel Corp.
Western Addo-X, Inc.
Western Computer Tape Co.
Williams & Marcus Co.
Willis and Pedersen, DP Supply Div.

P5. PATCH CORDS

Computer Supplies Co.
M. L. Councell Associates, Inc.
Data Management Associates, Inc.
Data Supplies, Inc.
EDACO, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Howard's Automatic Devices
MAC Panel Co.
Edward Ochman Systems
Sealectro Corp.
Superior Data Processing Service
Systron-Donner Corp.
Virginia Electronics Co., Inc.
Virginia Panel Corp.
Williams & Marcus Co.

P6. PLOTTERS

(see also Boards, Plotting)
All Data Processing Machines, Inc.
Auto-trol Corp.
Baldwin Kongsberg Co.
California Computer Products Inc.
Control Data Corp.
DISCON Corp.
Felsenthal Instruments Co.
Geo Space Corp.
Geo Space Corp., Computer Div.
Hallmarkets International
Houston OMNIGRAPHIC Corp.
Mactex
Pivan Engineering Co.
Stromberg-Carlson Corp.
Wild & Assoc., Inc.
Zuse KG

P7. PLUGBOARDS

The Acratod Co.
All Data Processing Machines, Inc.

Inc.
Applied Dynamics, Inc.
Bay State E. D. P. Accessories
Business Supplies Corp. of America
The Computer Exchange, Inc.
Computer Supplies Co.
Computer Supplies, Inc.
Control Data Corp.
M. L. Councell Associates, Inc.
Data Supplies, Inc.
Datronic Rental Corp.
Mo Dorman Co.
EDACO, Inc.
Fabri-Tek Inc., Educational Products
General Electric Co., Information Systems Marketing Operation (ISMO)
Hallmarkets International
Howard's Automatic Devices
Machine Accounting Supply Co. of Tenn.
MAC Panel Co.
The National Cash Register Co.
Edward Ochman Systems
Records Systems, Inc.
Sealectro Corp.
Simulators, Inc.
Superior Data Processing Service
UNIVAC DP Centers
Virginia Electronics Co., Inc.
Virginia Panel Corp.
West Eleven Inc.
Wild & Assoc., Inc.
Williams & Marcus Co.

P8. PRINTERS

All Data Processing Machines, Inc.
Anelex Corp.
Beckman Instruments, Inc.
Celetronics Inc.
Codamite Division, Pacific Ordnance & Electronics Co.
The Computer Exchange, Inc.
Control Data Corp.
DA-PEX
Data Center Inc.
Data Machines, Inc.
Data Products Sales Corp.
Data Reproduction Systems
Datronic Rental Corp.
DI/AN Controls, Inc.
Dymec
Educational Products, Fabri-Tek Inc.
Hewlett-Packard
Invac Corp.
Litton Electronic Business Systems
Mactex
MAI Equipment Corp.
Motorola Inc., Government Electronics Div.
The National Cash Register Co.
Potter Instrument Co., Inc.
Soroban Engineering, Inc.
R. Edward Stemm, Inc.
Straza Industries
Stromberg-Carlson Corp.
Veeder-Root
Veeder-Root, Electronic Controls Div.
Victor Comptometer Corp., Business Machines Group
Wild & Assoc., Inc.

P9. PRINTERS, HIGH SPEED

All Data Processing Machines, Inc.

Products and Services

Anelex Corp.
 Beckman Instruments, Inc.
 Benson-Lehner Corp.
 Celestronics Inc.
 The Computer Exchange, Inc.
 Control Data Corp.
 Control Processing Services
 DARTEX Div. of Tally Corp.
 Data Center Inc.
 Data Machines, Inc.
 Data Products Corp.
 Data Products Sales Corp.
 DI/AN Controls, Inc.
 Dymec
 Franklin Electronics, Inc.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 General Electric Co., Printer-Reader Bus. Sect.
 Honeywell Electronic Data Processing Div.
 Honeywell Inc., Computer Control Div.
 Infotran, Inc.
 Invac Corp.
 Michigan Business Machines
 Mohawk Data Sciences Corp.
 Motorola Inc., Government Electronics Div.
 The National Cash Register Co.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Scientific Data Systems, Inc.
 Stromberg-Carlson Corp.
 Stromberg-Carlson Corp., Data Products Div.
 Systems Engineering Laboratories, Inc.
 Victor Comptometer Corp., Business Machines Group
 Wild & Assoc., Inc.

PI0. PRINTERS, KEYBOARDS

All Data Processing Machines, Inc.
 Celestronics Inc.
 The Computer Exchange, Inc.
 COM-SHARE Inc.
 Connecticut Technical Corp.
 Creed & Co. Ltd.
 Data Machines, Inc.
 Honeywell Electronic Data Processing Div.
 Honeywell Inc., Computer Control Div.
 Invac Corp.
 Litton Electronic Business Systems
 Marksmen, Inc.
 Mauchly Honig Time Sharing Associates, Inc.
 The National Cash Register Co.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Scientific Data Systems, Inc.
 R. Edward Stemm, Inc.
 Systems Engineering Laboratories, Inc.
 Teletype Corp.
 Wild & Assoc., Inc.

PI1. PRINTERS, LINE-A-TIME

Champion Service Corp.
 Comput-A-Credit, Inc.
 Connecticut Technical Corp.
 Data Machines, Inc.
 Data Products Corp.
 Data Products Sales Corp.
 Data Systems, Inc.
 Datronic Rental Corp.
 Educational Products, Fabrik-Tek Inc.

General Electric Co., Printer-Reader Bus. Sect.
 Infotran, Inc.
 Mohawk Data Sciences Corp.
 The National Cash Register Co.
 R. Edward Stemm, Inc.
 Systems Engineering Laboratories, Inc.
 Victor Comptometer Corp., Business Machines Group
 Wild & Assoc., Inc.

PI2. PROGRAMMING SERVICES

Adams Associates
 Aerojet-General Corp., Sacramento Plant
 Aerojet-General Corp., Von Karman Ctr.
 AGS Computers, Inc.
 J. R. Ahart, Inc.
 Airline Data Service Inc.
 Allied Data Processing, Inc.
 Alpha Omega Computer Systems
 American Data Processing Corp.
 Anagram Corp.
 Analytic Computing Services, Inc.
 Applied Data Research, Inc.
 Applied Data Systems, Inc.
 Applied Industrial Dynamics, Inc.
 The Arcé Corp.
 Aries Corp.
 Arista Data Processing Center
 Auditek, Inc.
 Austin Data Processing Service Inc.
 Automated Business Records, Inc.
 Automated Concepts Inc.
 Automated Data Associates
 Automated Information, Inc.
 Automated Instant Data, Inc.
 Automated Services, Inc.
 Automatic Accounting Systems, Inc.
 Auto-Tronix Universal
 Barron Data Systems, Inc.
 Frank R. Berman
 Biz-Matic Data Control Center's Inc.
 Ernest E. Blanche & Associates, Inc.
 Bowles & Tillinghast, Inc.
 Brandon Applied Systems, Inc.
 B-R Data Systems, Inc.
 The Bunker-Ramo Corp.
 Business Computer Service, Inc.
 Business Machines Institute
 Business Publishers Circulation Service
 Caltec, Inc.
 Cambridge Computer Associates, Inc.
 Carter & Associates
 C-E-I-R, Inc.
 Celestron Associates, Inc.
 The CiMS Group, Inc.
 Combined Data Group Inc.
 Computab, Inc.
 Comput-A-Credit, Inc.
 Computations, Inc.
 Computer Applications Center, Inc.
 Computer Applications Inc.
 Computer Center
 Computer Consultants, Inc.
 The Computer Exchange, Inc.
 Computer Fulfillment Corp.
 Computer Methods Corp.
 Computer Programmers & Analysts, Inc.
 Computer Programming Concepts, Inc.
 Computer Progress, Inc.

Computer Sciences Corp.
 Computer Services Co.
 Computer Service Consultants, Inc.
 Computer Sharing Inc.
 Computer Systems Co.
 Computer Systems Division
 Computer Usage Co., Inc.
 Computer Usage Development Corp.
 Computing & Software, Inc.
 Compress, Inc.
 COM-SHARE Inc.
 Comtech
 Concap Computing Systems
 Continental Computer Associates, Inc.
 Continental Systems Inc.
 Control Data Corp.
 Control Data Corp., Houston Data Center
 Control Processing Services
 Control Technology, Inc.
 C.P. & S., Inc.
 Cyber-Tronics, Inc.
 R. N. Dailey, Inc.
 Dallas Tabulating Service, Inc.
 Data Center Inc.
 Data Control Services
 Datacraft Inc.
 Data Dynamics, Inc.
 Data, Inc.
 Data Institute, Inc.
 Datamation Services Inc.
 Data Operations Inc.
 Data Processing, Inc.
 Data Processing Service
 Data Services Corp.
 DataStation/Los Angeles
 Data Systems Analysts, Inc.
 Data Technics Corp.
 Data Tronics Corp.
 Datatronics, Inc.
 Dela Data Corp.
 Delcos, Inc.
 Delta Data Systems, Inc.
 Design Automation, Inc.
 Detroit IPC
 Digitek Corp.
 Distributors Data Processing
 Diversified Integration of Data Services
 Documentation Inc.
 Document Control Associates
 DPS, Inc.
 EBASCO Services Inc.
 Ecco Consulting Inc.
 EDCO Data Processing Corp.
 Educators Consultant Services, Inc.
 Electronic Business Machines Co.
 Electronic Calculus, Inc.
 Electronic Computer Programming Institute of West-Rockl., N.Y.
 Electronic Data Processing, Inc.
 Electronic Processors Inc.
 Electronic Tabulating Corp.
 El Paso Data Services, Inc.
 Kurt Enslein
 E.P.G. Computer Services, Inc.
 Fedder Data Centers, Inc.
 Fisher-Stevens Inc.
 Dr. Ivan Flores
 Fulfillment Consultants Corp.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 General Procedures Corp.
 General Precision, Inc., Librascope Group
 Geo Space Corp., Computer Div.

GPS Instrument Co., Inc.
 Philip Hankins & Co., Inc.
 Hanover & Selwyn Co.
 Jack M. Harrison & Assoc.
 Hollander Assoc.
 Honeywell Inc., Computer Control Div.
 I. D. R. Co., Inc.
 Information Control Systems Inc.
 Information Development Co.
 Information Dynamics Corp.
 Information Management Associates Inc.
 Information Management, Inc.
 Information Processing Inc.
 Information Research Associates, Inc.
 Information Sciences & Division, Brown Engineering Co., Inc.)
 Information Systems Co. (Div. Lear Siegler Co.)
 Infotec, Inc.
 Infret Corp.
 Institute of Computer Technology, Inc.
 Integrated Business Methods, Inc.
 International Data Processing Corp.
 International Digitizing Corp.
 Interstate Data Services, Inc.
 ITT Data Services
 Johnson Computing & Tabulating Corp.
 John F. Keane Assoc., Inc.
 Keltec Industries, Inc., Alexandria Div.
 Keyed Systems & Service, Inc.
 Keystone Computer Assoc., Inc.
 Wm. M. Kordsiemon & Assoc.
 Arthur S. Kranzley & Co. Inc.
 Litton Electronic Business Systems
 Logic Corp.
 Mactex
 Management Advisory Services
 Management Computer Controls, Inc.
 Management Dynamics Ltd.
 Management Information Services Inc.
 Management Research International, Inc.
 Marks-Baer, Inc.
 Mathematical Applications Group, Inc.
 Mathematical Engineering Associates, Inc.
 Mathematischer Beratungsdienst
 Programmierungsdienst
 Matrix Corp., Computer Services Div.
 Mauchly Honig Time Sharing Associates, Inc.
 Mauchly Systems, Inc.
 Mauchly Techniques, Inc.
 MBI Systems, Inc.
 McDonnell Automation Center
 Mead Management Services
 Medcomp Research Corp.
 Merle Thomas Corp.
 Miami Institute of Technology
 Michigan Business Machines
 Mid-America Computer & Data Processing Center
 Midland National Bank
 M. I. D. S., Inc.
 Milner Bros. Prods.
 Namar, Inc.
 The National Cash Register Co.
 National Data Processing Corp.
 Neat Data Processing Services
 Orchard-Hays & Co., Inc.
 John K. Paden Co.
 Pers Inc.

Products and Services

Philco-Ford Corp.
 Philip C. Pipher Associates, Inc.
 Planning Research Corp.
 Profimatics, Inc.
 Programmatics Inc.
 Programming Methods, Inc.
 Programming Research, Inc.
 Programming Services, Inc.
 Programming & Systems, Inc.
 Quality Programming Inc.
 Randolph Computer Corp.
 Hub S Ratliff, Data Processing Consultants
 Reiland, Page & Associates, Inc.
 Research Calculations, Inc.
 SAID, Inc.
 The Service Bureau Corp.
 Millard D. Shriver Co. Inc.
 Sigma Processing Inc.
 Southwest Computing Service, Inc.
 Special Studies, Inc.
 Standard Programs Corp.
 Statistical Tabulating Corp.
 Superior Data Processing Services
 System Development Corp.
 System Sciences, Inc.
 Systematic Services, Inc.
 Systems Programming, Inc.
 Systems Programming Services Inc.
 Tape Center Ltd.
 Technical Computing Center
 Technical Information Processing
 Technical Operations, Inc.
 Telecheck Hawaii, Inc.
 Telecomputations, Inc.
 Robert V. Thoren Co.
 Time Share Corp.
 Toledo Technical College
 Tri-Data, Inc.
 Trident Laboratories, Inc.
 UNIVAC DP Centers
 Universal Systems & Programming Service
 University Computing Co.
 URS Corp.
 U.S. Navy Marine Engineering Lab., Computer Div.
 Utility Billing, Inc.
 Warren Assoc.
 WESCO Information Utility, Inc.
 Westat Research, Inc.
 Western Operations, Inc.
 Wolf Research and Development Corp.
 Wyle Laboratories
 Martin W. Wyrod Assoc.

P13. PUBLICATIONS

Adams Associates
 Aerojet-General Corp., Sacramento Plant
 Aerojet-General Corp., Von Karman Ctr.
 Aries Corp.
 Association for Computing Machinery
 Brandon Applied Systems, Inc.
 Business Machines Institute
 Business Publishers Circulation Service
 Computer Usage Development Corp.
 Control Data Corp.
 Datronic Rental Corp.
 Delta Data Systems, Inc.
 Digital Equipment Corp.
 Documentation Inc.
 Educators Consultant Services, Inc.

Dr. Ivan Flores
 Herner & Co.
 Information Research Associates, Inc.
 International Data Corp.
 Litton Electronic Business Systems
 Logic Corp.
 Management Systems International AB
 Mathematischer Beratungs-und Programmierungsdienst
 The National Cash Register Co.
 Orchard-Hays & Co., Inc.
 Philco-Ford Corp.
 SAID, Inc.
 Tolos Associates
 University Computing Co.
 John Wiley & Sons, Inc.

P14. PUNCH CARDS

Airline Data Service Inc.
 The Arce Corp.
 Business Supplies Corp. of America
 Celestronics Inc.
 Cimsco Data Processing Co.
 Computer Supplies, Inc.
 Datamedia Corp.
 Engineered Electronics Co.
 Ennis Business Forms, Inc.
 Friden, Inc.
 Litton Electronic Business Systems
 Moore Business Forms, Inc.
 The Morley Co.
 The National Cash Register Co.
 Sooner Business Systems
 Wheeldex, Inc.
 Williams & Marcus Co.

P15. PUNCH CARD ACCESSORIES

The Acrotod Co.
 All Data Processing Machines, Inc.
 Applied Industrial Dynamics, Inc.
 Beemak Plastics
 Besco Equipment & Systems Co. Inc.
 Business Supplies Corp. of America
 Computer Supplies Co.
 Computer Supplies, Inc.
 Data Center Inc.
 Data Documents/Inc.
 Data Management Associates, Inc.
 Data Processing Exchange, Inc.
 Data Supplies, Inc.
 Datronic Rental Corp.
 DEK Services
 Mo Dorman Co.
 EDACO, Inc.
 Electronic Business Machines Co.
 Friden, Inc.
 Hallmark International
 The Hickok Electrical Instrument Co.
 Howard's Automatic Devices
 Jonker Corp.
 Kansas City College of Automation
 Kwik File Inc.
 Litton Electronic Business Systems
 Machine Accounting Supply Co. of Tenn.
 Gene Maior & Assoc. Inc.
 L. A. Marler & Co.
 Monarch Metal Products, Inc.
 The National Cash Register Co.

Edward Ochman Systems
 Potter Instrument Co., Inc.
 Records Systems, Inc.
 Sooner Business Systems
 TAB Products Corp.
 TAB Products of Ill.
 U. S. Tabulating Binder Corp.
 Williams & Marcus Co.
 Willis and Pedersen, DP Supply Div.
 George T. Zurewich Inc.

P16. PUNCH CARD MACHINES

Addo-X
 All Data Processing Machines, Inc.
 The Automation Co.
 The Computer Exchange, Inc.
 Computer Supplies Co.
 Connecticut Technical Corp.
 Continental Computer Associates, Inc.
 Control Data Corp.
 Control Processing Services
 Creed & Co. Ltd.
 Cyber-Tronics, Inc.
 Dallas Tabulating Service, Inc.
 DA-PEX
 Dashew Business Machines, Inc.
 Data Automation Co., Inc.
 Data Center Inc.
 Data Processing Exchange, Inc.
 Data Supplies, Inc.
 Datronic Rental Corp.
 DEK Services
 Mo Dorman Co.
 EDP Leasing Corp.
 Electronic Business Machines Co.
 El Paso Data Services, Inc.
 Friden, Inc.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 Hallmark International
 The Hickok Electrical Instrument Co.
 Honeywell Electronic Data Processing Div.
 Kansas City College of Automation
 Keyed Systems & Service, Inc.
 LMC Data, Inc.
 Mactex
 MAI Equipment Corp.
 Gene Maior & Assoc. Inc.
 L. A. Marler & Co.
 Miami Institute of Technology
 The National Cash Register Co.
 National Keypunch Services, Inc.
 Potter Instrument Co., Inc.
 Preferred Tabulating Service Inc.
 Scientific Data Systems, Inc.
 Soroban Engineering, Inc.
 Superior Data Processing Service
 Time Brokers, Inc.
 Uptime Corp.
 Williams & Marcus Co.
 George T. Zurewich Inc.

R1. READERS

All Data Processing Machines, Inc.
 Celestronics Inc.
 Control Data Corp.
 Data Reproduction Systems
 Dymec
 Hewlett-Packard
 The Hickok Electrical Instru-

ment Co.
 Invac Corp.
 The National Cash Register Co.
 National Computer Systems, Inc.
 Philco-Ford Corp.
 Roytron
 Tally Corp.
 Wyoming Electrodata Corp.

R2. READERS, CHARACTER

Celestronics Inc.
 Control Data Corp.
 Farrington Electronics, Inc.
 GPL Div., General Precision, Inc.
 Litton Electronic Business Systems
 The National Cash Register Co.
 Philco-Ford Corp.
 Roytron

R3. READERS, FILM

Control Data Corp.
 DISCON Corp.
 Houston Fearless Corp.
 Information International Inc.
 The National Cash Register Co.
 Stromberg-Carlson Corp., Data Products Div.
 Zuse KG

R4. READERS, MAGNETIC CARD

Data Processing Exchange, Inc.
 Litton Electronic Business Systems
 The National Cash Register Co.
 Philco-Ford Corp.

R5. READERS, MAGNETIC INK

Data Processing Exchange, Inc.
 DPS, Inc.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 The National Cash Register Co.

R6. READERS, MAGNETIC TAPE

ADD0-X Sales Corp.
 Chrono-log Corp.
 The Computer Exchange, Inc.
 Computer Technology Ltd.
 Control Data Corp.
 M. L. Councell Associates, Inc.
 Cyber-tronics, Inc.
 Data Center Inc.
 Data Operations Inc.
 Data Products Sales Corp.
 DARTEX Div. of Tally Corp.
 Data Processing Exchange, Inc.
 Data Products Sales Corp.
 Digi-Data Corp.
 Dymec
 General Electric Co., Information Systems Marketing Operation (ISMO)
 Geo Space Corp.
 Hewlett-Packard
 Hewlett-Packard Co., Mountain View Div.
 Honeywell Electronic Data Processing Div.
 Litton Electronic Business Systems
 Mactex
 Marksmen, Inc.
 L. A. Marler & Co.
 Mohawk Data Sciences Corp.

Products and Services

The National Cash Register Co.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Precision Instrument Co.
Reeves Soundcraft
Scientific Data Systems, Inc.
R. Edward Stemm, Inc.
Systems Engineering Laboratories, Inc.
Tally Corp.
UNIVAC Div., Sperry Rand Corp.
Wild & Assoc., Inc.
Wiltek, Inc.
Wyoming Electrodata Corp.
George T. Zurewich Inc.

R7. READERS, OPTICAL CHARACTER

Addressograph Multigraph Corp.
Celestronics Inc.
Data Operations Inc.
Electronic Business Machines Co.
Farrington Electronics, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Information International Inc.
Information Research Associates, Inc.
The National Cash Register Co.
Wild & Assoc., Inc.
Philco-Ford Corp.
Recognition Equipment Inc.

R8. READERS, PAPER TAPE

Addo-X
ADD0-X Sales Corp.
The Alling & Cory Co.
The Automation Co.
Clary Datacomp Systems
Computer Technology Ltd.
Connecticut Technical Corp.
Control Data Corp.
M. L. Councell Associates, Inc.
Creed & Co. Ltd.
DARTEX Div. of Tally Corp.
Data Machines, Inc.
Data Operations Inc.
Data Products Sales Corp.
Digital Equipment Corp.
Digitronics Corp.
Mo Dorman Co.
DPS, Inc.
Dymec
Electronic Engineering Co. of Calif.
Engineered Electronics Co.
Fabri-Tek Inc., Educational Products
Fairchild Space & Defense Systems
Farrington Electronics, Inc.
Friden, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
General Electric Co., Printer-Reader Bus. Sect.
Honeywell Electronic Data Processing Div.
Honeywell Inc., Computer Control Div.
Howard's Automatic Devices
Hughes Aircraft Co.
Invac Corp.
Johnson Computing & Tabulating Corp.
Litton Electronic Business Systems
Mactex
L. A. Marler & Co.
Mathatronics

Mohawk Data Sciences Corp.
The National Cash Register Co.
Edward Ochman Systems
Ohr-tronics, Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.
Remex Electronics
Roytron
Scientific Data Systems, Inc.
Soroban Engineering, Inc.
R. Edward Stemm, Inc.
Systems Engineering Laboratories, Inc.
Tally Corp.
Tape Center Ltd.
Tape Tabulating Inc.
Tech Serv, Inc.
Teletype Corp.
Wang Laboratories Inc.
Western Addo-X, Inc.
Wild & Assoc., Inc.
George T. Zurewich Inc.

R9. READERS, PHOTOELECTRIC

Celestronics Inc.
Control Data Corp.
Data Machines, Inc.
Digital Equipment Corp.
DISCON Corp.
Dymec
Electronic Engineering Co. of Calif.
Engineered Electronics Co.
Fairchild Space & Defense Systems
General Electric Co., Printer-Reader Bus. Sect.
Honeywell Electronic Data Processing Div.
Honeywell Inc., Computer Control Div.
Invac Corp.
L. A. Marler & Co.
The National Cash Register Co.
National Computer Systems, Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Remex Electronics
Soroban Engineering, Inc.
Tally Corp.
UNIVAC Div., Sperry Rand Corp.
Veeder-Root, Electronic Controls Div.
Wild & Assoc., Inc.

R10. READERS, PUNCH CARD

The Automation Co.
The Computer Exchange, Inc.
Control Data Corp.
Creed & Co. Ltd.
Cyber-Tronics, Inc.
DA-PEX
DARTEX Div. of Tally Corp.
Data Center Inc.
Data Machines, Inc.
Data Operations Inc.
Data Processing Exchange, Inc.
DPS, Inc.
Digi-Data Corp.
Electron Ohio Inc.
Electronic Business Machines Co.
Friden, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
The Hickok Electrical Instrument Co.
Honeywell Electronic Data Processing Div.

Honeywell Inc., Computer Control Div.
Litton Electronic Business Systems
Mactex
MAI Equipment Corp.
L. A. Marler & Co.
Mohawk Data Sciences Corp.
The National Cash Register Co.
Ohr-tronics, Inc.
Philco-Ford Corp.
Preferred Tabulating Service, Inc.
Roytron
Scientific Data Systems, Inc.
Soroban Engineering, Inc.
TAB Products of Ill.
Tape Center Ltd.
Uptime Corp.
WESCO Information Utility, Inc.

R11. RECORDING PAPERS

The Alling & Cory Co.
Beckman Instruments, Inc.
Computer Systems Division
Consolidated Electrodynamics Corp.
General Electric Co., Printer-Reader Bus. Sect.
Hewlett-Packard
Indel Inc.
Industrial Products Group
Kennedy Co.
Multiforms, Inc.
The National Cash Register Co.

R12. REGISTERS, SHIFT

Celestronics Inc.
Computer Logic Corp.
Control Logic, Inc.
Data Machines, Inc.
DI/AN Controls, Inc.
Electronic Modules Corp.
Logic Corp.
Pivan Engineering Co.
Veeder-Root
Walkirt Co.
Wild & Assoc., Inc.
Wiltek, Inc.
Wyle Laboratories

R13. RELAYS (COMPUTER TYPES)

Beckman Instruments, Inc.
C. P. Clare & Co.
Data Machines, Inc.
Dialight Corp.
Honeywell Inc., Computer Control Div.
Leach Corp.
The National Cash Register Co.

R14. RESEARCH

Aerojet-General Corp., Industrial Systems Div.
Aerojet-General Corp., Sacramento Plant
Aerojet-General Corp., Von Karman Ctr.
Alpha Omega Computer Systems
Anagram Corp.
Applied Data Research, Inc.
Automated Business Records, Inc.
Automated Information, Inc.
Barron Data Systems, Inc.
Frank R. Berman
Bowles & Tillinghast, Inc.

Cambridge Computer Associates, Inc.
Combined Data Group Inc.
Comput-A-Credit, Inc.
Computer Applications Inc.
Computer Command & Control Co.
Computer Sciences Corp.
Computer Service Consultants, Inc.
Computer Usage Development Corp.
Computrol Systems, Inc.
Concap Computing Systems
Control Data Corp.
Control Technology, Inc.
Data Dynamics, Inc.
Data Perspectives, Inc.
Data Technics Corp.
Diversified Integration of Data Services
EBASCO Services Inc.
Educators Consultant Services, Inc.

Kurt Enslein
ErDOS & Morgan Inc.
Dr. Ivan Flores
GPS Instrument Co., Inc.
Herner & Co.
Hollander Assoc.
Information Management, Inc.
Information Research Associates, Inc.
Infret Corp.
Institute of Computer Technology, Inc.
Wm. M. Kordsiemon & Assoc.
Litton Electronic Business Systems
Management Research International, Inc.
Mathematischer Beratungsdienst und Programmierungsdienst
Mauchly Systems, Inc.
Merle Thomas Corp.
The National Cash Register Co.
Philco-Ford Corp.
Planning Research Corp.
Hub S. Ratliff, Data Processing Consultants
Sci-Tek Computer Center Inc.
The Service Bureau Corp.
Special Studies, Inc.
System Sciences, Inc.
Technical Operations, Inc.
Tolos Associates
URS Corp.
Westat Research, Inc.
Western Operations, Inc.
Wolf Research and Development Corp.
Wyle Laboratories

R15. RESOLVERS

Aerometrics
Applied Dynamics, Inc.
COMCOR, Inc.
Geo Space Corp.
GPS Instrument Co., Inc.
Jonker Corp.
The National Cash Register Co.

R16. RESOLVERS, COORDINATE TRANSFORM

Beckman Instruments, Inc.
COMCOR, Inc.
Geo Space Corp.
GPS Instrument Co., Inc.
Honeywell Inc., Computer Control Div.
Interdata
Motorola Inc., Government Electronics Div.

Products and Services

R17. RESOLVERS, PRODUCT

GPS Instrument Co., Inc.

R18. RESOLVERS, SINE-COSINE

Applied Dynamics, Inc.
Beckman Instruments, Inc.
COMCOR, Inc.
Geo Space Corp.
GPS Instrument Co., Inc.
Honeywell Inc., Computer Control Div.
Natel Engineering Co., Inc.
Simulators, Inc.
System Computers Ltd.

R19. ROBOTS

Data Processing Exchange, Inc.
Information Research Associates, Inc.
Logic Corp.
Moog Inc. Industrial Div.
Philco-Ford Corp.
Warren Assoc.

R20. RIBBONS, DATA PROCESSING

The Acratod Co.
Addressograph Multigraph Corp.
Advanced Components Co.
American Office King, Inc.
Applied Industrial Dynamics, Inc.
Business Supplies Corp. of America
Computer Supplies Co.
M. L. Council Associates, Inc.
Data Documents/Inc.
Data Forms Co., Inc.
Datamedia Corp.
Data Processing Supplies, Inc.
Data Products Sales Corp.
Data Supplies, Inc.
Datronic Rental Corp.
EDACO, Inc.
EDP Supply Co.
Ennis Business Forms, Inc.
Friden, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Hallmarkets International
Jack M. Harrison & Assoc.
Howard's Automatic Devices
Information Supplies Corp.
Litton Electronic Business Systems
Machine Accounting Supply Co. of Tenn.
Gene Maior & Assoc. Inc.
L. A. Marler & Co.
Michigan Business Machines
The National Cash Register Co.
Edward Ochman Systems
Old Town Corp.
Record Media Products
Williams & Marcus Co.
Willis and Pedersen, DP Supply Div.
George T. Zurewich Inc.

S1. SCANNERS

Addressograph Multigraph Corp.
All Data Processing Machines, Inc.
Beckman & Whitley, Inc.
Beckman Instruments, Inc.
Celetronics Inc.
Control Data Corp.

Dymec
Educators Consultant Services, Inc.
Fairchild Space & Defense Systems
Farrington Electronics Inc.
Hewlett-Packard
Information International Inc.
Information Research Associates, Inc.
Instrument Products, Minnesota Mining & Mfg. Co.
George Kelk Limited
Keltec Industries, Inc., Alexandria Div.
Litton Industries Electron Tube Div.
Logic Corp.
Nash and Harrison Ltd.
The National Cash Register Co.
National Computer Systems, Inc.
Non-Linear Systems, Inc.
Philco-Ford Corp.
Pivan Engineering Co.
Quidar Electronics Inc.
Straza Industries
Technical Operations, Inc.
Towson Laboratories, Inc.
Wyle Laboratories

S2. SERVOMECHANISMS

Aerojet-General Corp., Sacramento Plant
Beckman Instruments, Inc.
Bunker-Ramo Corp., Numerical Control Systems Division
COMCOR, Inc.
Continental Computer Associates, Inc.
Control Data Corp.
GPS Instrument Co., Inc.
Hamilton, Grayden & Flemmer, Inc.
Kaman Nuclear
Moog Inc. Industrial Div.
System Computers Ltd.
Theta Instrument Corp.
Zuse KG

S3. SIMULATORS

AAI Corp.
Aerojet-General Corp., Von Karman Ctr.
Applied Dynamics, Inc.
The Bunker-Ramo Corp.
Computer Sciences Corp.
Computer Usage Development Corp.
Compress, Inc.
Data Perspectives, Inc.
Digital Electronics Inc.
Diversified Integration of Data Services
Kurt Enslein
Geo Space Corp.
GPS Instrument Co., Inc.
Interdata
Keltec Industries, Inc., Alexandria Div.
Moog Inc. Industrial Div.
Scientific Data Systems, Inc.
Simulators, Inc.
Special Studies, Inc.
Tally Corp.
UNIVAC DP Centers
URS Corp.
Warren Assoc.

S4. STORAGE SYSTEMS

All Data Processing Machines,

Inc.
Bryant Computer Products
Computer Technology Ltd.
Data Processing Exchange, Inc.
Data Processing Supplies, Inc.
Data Products Sales Corp.
Data Supplies, Inc.
DI/AN Controls, Inc.
Diebold Inc.
Digital Devices, Inc.
Digital Equipment Corp.
Documentation Inc.
Efficiency Bindery Inc.
Thomas Ekeland Co.
Fairchild Semiconductor
Friden, Inc.
Honeywell Electronic Data Processing Div.
Lockheed Electronics Co., Avionics and Industrial Products Div.
Monarch Metal Products, Inc.
The National Cash Register Co.
Philco-Ford Corp.
Potter Instrument Co., Inc.
Record Control Systems
Scientific Data Systems, Inc.
Sooner Business Systems
Straza Industries
Tally Corp.
Vermont Research Corp.
Wild & Assoc., Inc.

S5. STORAGE SYSTEMS, MAGNETIC

Ampex Corp., Computer Products Div.
Bryant Computer Products
The Computer Exchange, Inc.
DARTEX Div. of Tally Corp.
Data Machines, Inc.
Data Processing Exchange, Inc.
Data Processing Supplies, Inc.
Data Products Sales Corp.
Data Supplies, Inc.
Decision Control, Inc./Data Machines, Inc.
DI/AN Controls, Inc.
Digital Development Corp.
Digital Devices, Inc.
EDACO, Inc.
Electron Ohio Inc.
Engineered Electronics Co.
Fabri-tek, Inc.
General Precision, Inc., Librascope Group
Honeywell Electronic Data Processing Div.
Litton Electronic Business Systems
The National Cash Register Co.
Philco-Ford Corp.
Potter Instrument Co., Inc.
Scientific Data Systems, Inc.
R. Edward Stemm, Inc.
Vermont Research Corp.
WESCO Information Utility, Inc.
Wild & Assoc., Inc.

S6. SWITCHES

Data Supplies, Inc.
Dialight Corp.
F. & F. Enterprises, Inc.
The Hickok Electrical Instrument Co.
Micro Switch
The National Cash Register Co.
3M Instrument Products
USECO Div., Litton Industries
Veeder-Root

S7. SWITCHES, STEPPING

C. P. Clare & Co.
The A. W. Haydon Co.
The National Cash Register Co.

S8. SYNCHROS

Natel Engineering Co., Inc.

S9. SYSTEMS ENGINEERING

AAI Corp.
Aerojet-General Corp., Industrial Systems Div.
Aerojet-General Corp., Sacramento Plant
Aerojet-General Corp., Von Karman Ctr.
AGS Computers, Inc.
J. R. Ahart, Inc.
All Data Processing Machines, Inc.
Alpha Omega Computer Systems
American Data Processing Corp.
Applied Industrial Dynamics, Inc.
The Arcé Corp.
Aries Corp.
Arista Data Processing Center
Automated Business Records, Inc.
Automated Information, Inc.
Avtron Manufacturing, Inc.
Barron Data Systems, Inc.
Beckman Instruments, Inc.
Biz-Matic Data Control Center's Inc.
Bowles & Tillinghast, Inc.
Brandon Applied Systems, Inc.
Bryant Computer Products
Bunker-Ramo Corp., Numerical Control Systems Division
The CIMS Group, Inc.
Compress, Inc.
Computer Applications Inc.
Computer Methods Corp.
Computer Sciences Corp.
Computer Services Co.
Computer Systems Co.
Computer Usage Development Corp.
Computrol Systems, Inc.
Connecticut Technical Corp.
Continental Computer Associates, Inc.
C. P. & S., Inc.
R. N. Dailey, Inc.
Data Institute, Inc.
Data Machines, Inc.
Data Management Associates, Inc.
Data Systems Analysts, Inc.
Data Systems Corp.
Data Technics Corp.
Design Automation, Inc.
Digital Equipment Corp.
DISCON Corp.
Diversified Integration of Data Services
Documentation Inc.
Document Control Associates
Duluth Avionics
EBASCO Services Inc.
Ecco Consulting Inc.
Electro-Mechanical Research, Inc.
Electronic Business Machines Co.
Emtech Research Products Corp.
Erdos & Morgan Inc.
Fedder Data Centers, Inc.
Dr. Ivan Flores
Geo Space Corp.

Products and Services

GPS Instrument Co., Inc.
 Hardy Scales Co. (Div. of Utah Systems Div.)
 Herner & Co.
 Hollander Assoc.
 Honeywell Inc., Computer Control Div.
 Information Development Co.
 Information Dynamics Corp.
 Information Sciences (Division Brown Engineering Co., Inc.)
 Information Systems Co. (Div. Lear Siegler Co.)
 Infotran, Inc.
 Infret Corp.
 Interdata
 ITT Data Services
 Johnson Computing & Tabulating Corp.
 John F. Keane Assoc., Inc.
 Keltec Industries, Inc., Alexandria Div.
 Keyed Systems & Service, Inc.
 Wm. M. Kordsiemon & Assoc.
 E. H. Kramer & Co.
 Arthur S. Kranzley & Co. Inc.
 Litton Electronic Business Systems
 Logic Corp.
 Mathematical Engineering Associates, Inc.
 Mathematischer Beratungs-und Programmierungsdienst
 The Matrix Corp., Computer Services Div.
 McDonnell Automation Center
 Merle Thomas Corp.
 Midland National Bank
 Milner Bros. Prods.
 Moog Inc. Industrial Div.
 Moore Business Forms, Inc.
 The National Cash Register Co.
 National Data Processing Corp.
 John K. Paden Co.
 Philco-Ford Corp.
 Planning Research Corp.
 Programming Methods, Inc.
 Programming Research, Inc.
 Programming Services, Inc.
 Hub S. Ratliff, Data Processing Consultants
 Raytheon Computer
 Reliable Systems Inc.
 Scientific Data Systems, Inc.
 Sooner Business Systems
 Special Studies, Inc.
 Standards, Inc.
 Statistical Tabulating Corp.
 Superior Data Processing Service
 System Sciences, Inc.
 Systems Programming Services Inc.
 Technical Operations, Inc.
 Telecheck Hawaii, Inc.
 Telecomputations, Inc.
 Robert V. Thoren Co.
 Toledo Technical College
 Trident Laboratories Inc.
 Universal Comptronics Corp.
 URS Corp.
 Western Operations, Inc.
 Wolf Research and Development Corp.
 Wyle Laboratories
 Martin W. Wyrod Assoc.

T1. TAPE HANDLERS

All Data Processing Machines, Inc.
 Ampex Corp., Computer Products Div.
 Applied Industrial Dynamics, Inc.

Creed & Co. Ltd.
 Cyber-Tronics, Inc.
 Cycle Equipment Co.
 DARTEX Div. of Tally Corp.
 Data-link Corp.
 Data Machines, Inc.
 Data Processing Exchange, Inc.
 Data Supplies, Inc.
 Digi-Data Corp.
 Digitronics Corp.
 Dymec
 EDACO, Inc.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 General Electric Co., Printer-Reader Bus. Sect.
 Hewlett-Packard Co., Mountain View Div.
 Industrial Products Group
 Invac Corp.
 Litton Electronic Business Systems
 MAI Equipment Corp.
 Monarch Metal Products, Inc.
 The National Cash Register Co.
 Pacific Data Processing Co.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Record Control Systems
 Scientific Data Systems, Inc.
 Sooner Business Systems
 Soroban Engineering, Inc.
 Systems Engineering Laboratories, Inc.
 Tally Corp.
 Teletype Corp.
 UNIVAC Div., Sperry Rand Corp.
 Wild & Assoc., Inc.
 Wyoming Electrodata Corp.
 George T. Zurewich Inc.

T2. TAPE, MAGNETIC

Advanced Components Co.
 All Data Processing Machines, Inc.
 Ampex Corp., Computer Products Div.
 Applied Industrial Dynamics, Inc.
 Audio Devices, Inc.
 Besco Equipment & Systems Co. Inc.
 Business Supplies Corp. of America
 Celanese Plastics Co.
 Certron Corp.
 The Computer Exchange, Inc.
 Computer Supplies Co.
 Computer Supplies, Inc.
 Computron Inc.
 Consolidated Electrodynamics Corp.
 Control Data Corp.
 M. L. Councill Associates, Inc.
 Cybetronics, Inc.
 DARTEX Div. of Tally Corp.
 Data Documents/Inc.
 Data Machines, Inc.
 Datamedia Corp.
 Data Processing Supplies, Inc.
 Data Products Sales Corp.
 Data Supplies, Inc.
 Davis Equipment, Inc.
 Digital Equipment Corp.
 Mo Dorman Co.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 Graham Magnetics, Inc.
 Honeywell Inc., Computer Control Div.
 Indel Inc.
 Industrial Products Group

Machine Accounting Supply Co. of Tenn.
 MAC Panel Co.
 Magnetic Media Corp.
 Memorex Corp.
 The Morley Co.
 The National Cash Register Co.
 Edward Ochman Systems
 Philco-Ford Corp.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Record Media Products
 Records Systems, Inc.
 Reeves Soundcraft
 Systems Engineering Laboratories, Inc.
 Time Brokers, Inc.
 U. S. Magnetic Tape Co.
 WESCO Information Utility, Inc.
 Wyoming Electrodata Corp.

T3. TAPE, MAGNETIC, FILING SYSTEMS

The Acratod Co.
 Advanced Components Co.
 Bay State E. D. P. Accessories
 Computer Supplies Co.
 Data Processing Exchange, Inc.
 Data Processing Supplies, Inc.
 Data Supplies, Inc.
 Diebold Inc.
 Mo Dorman Co.
 EDACO, Inc.
 Thomas Ekeland Co.
 Machines Accounting Supply Co. of Tenn.
 Monarch Metal Products, Inc.
 The National Cash Register Co.
 Edward Ochman Systems
 Record Control Systems
 Records Systems, Inc.
 Reliable Systems Inc.
 Scientific Data Systems, Inc.
 Sooner Business Systems
 TAB Products Corp.
 TAB Products of Ill.
 Wheelindex, Inc.

T4. TAPE, MAGNETIC, READERS

(See R6: Readers, Magnetic Tape)

T4a. TAPE RECERTIFICATION

Data Associates
 Shieldata of W.N.Y. Inc.

T5. TAPE, MAGNETIC, RECORDERS

Ampex Corp., Computer Products Div.
 CALMA Co.
 Celanese Plastics Co.
 Computer Supplies Co.
 DARTEX Div. of Tally Corp.
 Data Center Inc.
 Dymec
 General Radio Co.
 Hewlett-Packard Co., Mountain View Div.
 Honeywell Electronic Data Processing Div.
 Industrial Products Group
 KRS Instruments
 Leach Corp.
 Litton Electronic Business Systems
 Marksmen, Inc.
 Mohawk Data Sciences Corp.

The National Cash Register Co.
 Pacific Data Processing Co.
 Philco-Ford Corp.
 Pivan Engineering Co.
 Potter Instrument Co., Inc.
 Precision Instrument Co.
 Scientific Data Systems, Inc.
 R. Edward Stemm, Inc.
 Stromberg-Carlson Corp.
 Systems Engineering Laboratories, Inc.
 Tally Corp.
 3M Company, Revere-Mincom Div.
 Wild & Assoc., Inc.
 Wiltek, Inc.
 George T. Zurewich Inc.

T6. TAPE, MAGNETIC, REELS

The Acratod Co.
 Audio Devices, Inc.
 Besco Equipment & Systems Co. Inc.
 Business Supplies Corp. of America
 The Computer Exchange, Inc.
 Computer Supplies Co.
 Computron Inc.
 M. L. Councill Associates, Inc.
 DARTEX Div. of Tally Corp.
 Data Center Inc.
 Data Processing Exchange, Inc.
 Data Processing Supplies, Inc.
 Data Supplies, Inc.
 Diebold Inc.
 EDACO, Inc.
 General Electric Co., Information Systems Marketing Operation (ISMO)
 Indel Inc.
 Information Supplies Corp.
 MAC Panel Co.
 Machine Accounting Supply Co. of Tenn.
 Memorex Corp.
 Monarch Metal Products, Inc.
 The National Cash Register Co.
 Edward Ochman Systems
 Records Systems, Inc.
 Robins Data Devices, Inc.
 Scientific Data Systems, Inc.
 R. Edward Stemm, Inc.
 TAB Products of Ill.
 U. S. Magnetic Tape Co.

T7. TAPE, PAPER

Addo-X
 All Data Processing Machines, Inc.
 Allen Hollander Co., Inc.
 The Alling & Cory Co.
 Applied Industrial Dynamics, Inc.
 Audio Devices, Inc.
 The Automation Co.
 Business Supplies Corp. of America
 Computer Supplies Co.
 Computer Supplies, Inc.
 M. L. Councill Associates, Inc.
 Cycle Equipment Co.
 DARTEX Div. of Tally Corp.
 Data Forms Co., Inc.
 Data Processing Supplies, Inc.
 Data Products Sales Corp.
 Data Supplies, Inc.
 Mo Dorman Co.
 EDACO, Inc.
 EDP Supply Co.
 Friden, Inc.
 Howard's Automatic Devices

Products and Services

Invac Corp.
Litton Electronic Business Systems
National Blank Book Co.
The National Cash Register Co.
Edward Ochman Systems
Pivan Engineering Co.
Potter Instrument Co., Inc.
Record Control Systems
Roytron
Systems Engineering Laboratories, Inc.
Tally Corp.
Western Computer Tape Co.
Williams & Marcus Co.
Willis and Pedersen, DP Supply Div.

T8. TAPE, PAPER, FILING SYSTEMS

The Acratod Co.
The Automation Co.
Bay State E. D. P. Accessories
Computer Supplies Co.
Data Management Associates, Inc.
Data Processing Supplies, Inc.
Data Supplies, Inc.
Mo Dorman Co.
EDP Supply Co.
Efficiency Bindery Inc.
Friden, Inc.
Howard's Automatic Devices
Invac Corp.
The National Cash Register Co.
Edward Ochman Systems
Ohio Envelope Co.
Record Control Systems
Scientific Data Systems, Inc.
Sooner Business Systems
TAB Products Corp.
TAB Products of Ill.
Wheeldex, Inc.
Willis and Pedersen, DP Supply Div.

T9. TAPE, PAPER, PUNCHES

Addo-X
ADDO-X Sales Corp.
The Automation Co.
Colorado Instruments, Inc.
Computer Supplies Co.
Computer Technology Ltd.
Connecticut Technical Corp.
M. L. Councill Associates, Inc.
Creed & Co. Ltd.
DARTEX Div. of Tally Corp.
Data Supplies, Inc.
Mo Dorman Co.
Dymec
Fabri-Tek Inc., Educational Products
Friden, Inc.
General Electric Co., Information Systems Marketing Operation (ISMO)
Honeywell Electronic Data Processing Div.
Honeywell Inc., Computer Control Div.
Howard's Automatic Devices
Invac Corp.
Keyed Systems & Service, Inc.
Litton Electronic Business Systems
L. A. Marler & Co.
Mathatronics
The National Cash Register Co.
Edward Ochman Systems
Ohr-tronics, Inc.
Pacific Data Processing Co.
Philco-Ford Corp.
Pivan Engineering Co.
Potter Instrument Co., Inc.

Record Control Systems
Roytron
Scientific Data Systems, Inc.
Soroban Engineering, Inc.
R. Edward Stemming, Inc.
Systems Engineering Laboratories, Inc.
Tally Corp.
Tape Tabulating Inc.
Tech Serv, Inc.
Teletype Corp.
Western Addo-X, Inc.
Wild & Assoc., Inc.
Williams & Marcus Co.
Willis and Pedersen, DP Supply Div.
George T. Zurewich Inc.

T10. TAPE, PAPER, READERS (See R8: Readers, Paper Tape)

T11. TELEMETERING SYSTEMS

Addressograph Multigraph Corp.
Bailey Meter Co.
Computer Applications Inc.
Control Data Corp.
Electro-Mechanical Research, Inc.
Hughes Aircraft Co.
Infotran, Inc.
Interdata
George Kelk Limited
Logic Corp.
Moore Associates Inc.
Motorola Inc., Government Electronics Div.
Pivan Engineering Co.
Quidar Electronics Inc.
Raytheon Computer
Scientific Control Corp.
Scientific Data Systems, Inc.
Stellarmetrics, Inc.
System Computers Ltd.
Towson Laboratories, Inc.

T12. THIN-FILMS, MAGNETIC

Aerojet-General Corp., Von Karman Ctr.
Celanese Plastics Co.
E. I. duPont de Nemours & Co., Inc.
Fabri-Tek Inc.
General Precision, Inc., Librascope Group
Hughes Aircraft Co.
The National Cash Register Co.
Wild & Assoc., Inc.

T13. TIME-SHARED COMPUTING SERVICES

(See SPECIAL ROSTER of Commercial, Time-shared Computing Services on Page 66)

T14. TIMING DEVICES

ADDO-X Sales Corp.
All Data Processing Machines, Inc.
Avtron Manufacturing, Inc.
Beckman Instruments, Inc.
Chrono-log Corp.
M. L. Councill Associates, Inc.
Dialight Corp.
DI/AN Controls, Inc.
Digital Devices, Inc.
E D P Corp.
Electronic Engineering Co. of

Calif.
Engineered Electronics Co.
The A. W. Haydon Co.
Honeywell Electronic Data Processing Div.
Hughes Aircraft Co.
Interdata
Logic Corp.
Pivan Engineering Co.
Walkirt Co.
G. C. Wilson & Co.

T15. TRANSFORMERS

Aladdin Electronics
Austin Data Processing Service Inc.
Geo Space Corp.
Hughes Aircraft Co.
Inductor Engineering, Inc.
Virginia Electronics Co., Inc.
Zuse KG

T16. TRANSFORMERS, PULSE

Aladdin Electronics
The Artron Instrument Co.
Electro-Mechanical Research, Inc.
El-Rad Manufacturing Co.
Inductor Engineering, Inc.

T17. TRANSLATING EQUIPMENT

All Data Processing Machines, Inc.
Avtron Manufacturing, Inc.
Connecticut Technical Corp.
Data Products Sales Corp.
Data Systems Corp.
Logic Corp.

T18. TYPEWRITERS, ELECTRIC, CONTROLLED

All Data Processing Machines, Inc.
The Automation Co.
Comput-A-Credit, Inc.
Computer Technology Ltd.
COM-SHARE Inc.
Connecticut Technical Corp.
DARTEX Div. of Tally Corp.
Data Processing Exchange, Inc.
DI/AN Controls, Inc.
Honeywell Inc., Computer Control Div.
Howard's Automatic Devices
Invac Corp.
Kansas City College of Automation
Marksmen, Inc.
L. A. Marler & Co.
Michigan Business Machines
The National Cash Register Co.
Philco-Ford Corp.
Scientific Data Systems, Inc.
Soroban Engineering, Inc.
Wild & Assoc., Inc.
George T. Zurewich Inc.

U1. USED DATA PROCESSING EQUIPMENT AND SUPPLIES

Abbott & Lind Inc.
The Automation Co.
The Computer Exchange, Inc.
Computer Supplies Co.
Cyber-Tronics, Inc.
DA-PEX
Data Processing Exchange, Inc.

DataStation/Los Angeles
Datastation of New York, Inc.
Datronic Rental Corp.
Mo Dorman Co.
EDACO, Inc.
Global Tabulating Equipment Corp.
L. Goldstein & Son, Inc.
Information Processing Systems, Inc.
Michigan Business Machines

VI. VISUAL OUTPUT DEVICES

Aerojet-General Corp., Von Karman Ctr.
All Data Processing Machines, Inc.
Ampex Corp., Computer Products Div.
Argonaut Associates, Inc.
Avtron Manufacturing, Inc.
Beckman & Whitley
The Bunker-Ramo Corp.
Cohu Electronics, Inc.
Comput-A-Credit, Inc.
Computer Technology Ltd.
Control Data Corp.
Dialight Corp.
DISCON Corp.
Dymec
E D P Corp.
General Electric Co., Information Systems Marketing Operation (ISMO)
General Electric Co., Printer-Reader Bus. Sect.
Geo Space Corp., Computer Div.
GPL Div., General Precision, Inc.
Honeywell Electronic Data Processing Div.
Hughes Aircraft Co.
Information Displays, Inc.
Information International Inc.
Information Research Associates, Inc.
Infotran, Inc.
Logic Corp.
Motorola Inc., Government Electronics Div.
The National Cash Register Co.
Philco-Ford Corp.
RCA Electronic Components and Devices
Scantlin Electronics, Inc.
Scientific Data Systems, Inc.
Straza Industries
Stromberg-Carlson Corp., Data Products Div.
Systems Engineering Laboratories, Inc.
Technical Operations, Inc.
Theta Instrument Corp.
Transistor Electronics Corp.
Veeder-Root
Veeder-Root, Electronic Controls Div.
West Eleven Inc.

Introducing

the DATA 620-I new systems computer

The DATA/620-I integrated circuit computer is the newest member of the DATA/620 family of system computers. DATA/620-I fills the gap between general purpose and special purpose computers. It belongs in a system, and solves problems previously considered too difficult or expensive for computer solution.

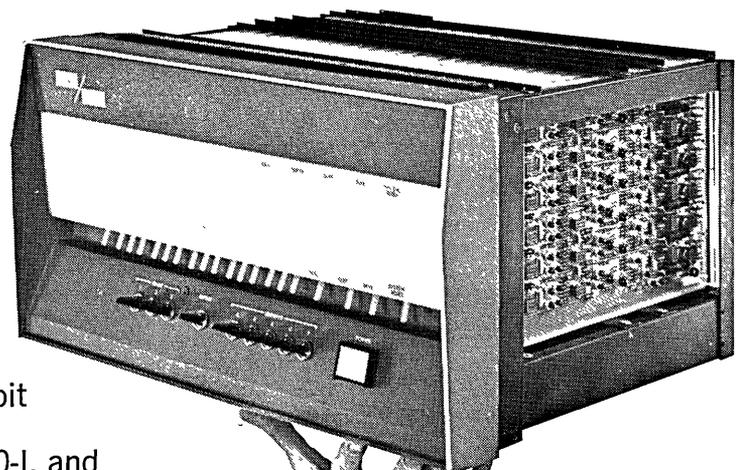
Designed for faster problem solution the DATA/620-I has a bigger instruction set, integrated circuit reliability, is smaller, has one-half the components, and costs less than any computer in its class.

DATA/620-I comes complete with software, field-proven and refined on the DATA/620.

Extremely compact, the DATA/620-I requires only 10" of 19" rack space. It's available with memory modules from 1024 to 32,768 words of 16 or 18 bits, and with a selection of control, arithmetic and I/O facilities, including D.M.I.'s unique Micro-Exec.

Price: \$13,900 with 4096 words of 16 bit memory, including ASR 33 teletype.

We are very proud of our new DATA/620-I, and would like to tell you more in a fact filled brochure. Please write for one.



DATA MACHINES

1590 Monrovia Avenue, Newport Beach, California

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Division of DECISION Control, Inc.

Designate No. 4 on Reader Service Card

ROSTER OF COMPUTING, DATA PROCESSING, AND CONSULTING SERVICES

For specific information about the organizations listed in this roster, please see their entries in the "Roster of Organizations" beginning on page 8.

ALABAMA

Electronic Processors Inc.
2101 Magnolia Ave.
Birmingham, Ala. 35205
Southern Computer Service
280 T.V. Rd., P.O. Box 100
Dothan, Ala. 36301
Brown Engineering Co., Inc.
Information Sciences Div.
300 Sparkman Dr., N.W.
Huntsville, Ala. 35805

ARIZONA

General Electric Co., Information Systems Marketing Operation (ISMO)
13430 N. Black Canyon Hwy.
Phoenix, Ariz. 85029
General Electric Process Computer Business Section
2255 W. Desert Cove Rd.
Phoenix, Ariz. 85029
Southwest Computing Service, Inc.
2300 N. Central Ave.
Phoenix, Ariz. 85004

ARKANSAS

Data Tronics Corp.
310 Towson Ave.
Ft. Smith, Ark. 72901

CALIFORNIA

Aerojet-General Corp. - Von Karman Ctr.
1100 W. Hollyvale St.
Azusa, Cal. 91702
Concap Computing Systems
Claremont Hotel, Suite 226
Berkeley, Cal. 94611
Tolos Associates
2440 Bancroft Way
Berkeley, Calif. 94704
Advance Data Systems
9261 W. Third St.
Beverly Hills, Cal. 90213
Pacific Data Processing Co.
9601 Wilshire Blvd.
Beverly Hills, Cal. 90210
The Bunker-Ramo Corp.
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Canoga Park, Cal. 91304
Profimatics, Inc.
7060 Owensmouth Ave.
Canoga Park, Cal. 91303
Litton Encoder Div.
20745 Nordhoff St.
Chatsworth, Cal. 91311
Serendipity Associates
9760 Cozycroft Ave.
Chatsworth, Cal. 91311
Millard D. Shriver Co., Inc.
9231 E. Whitmore St.
El Monte, Cal. 91771
Computer Sciences Corp.
650 N. Sepulveda Blvd.
El Segundo, Cal. 90245
The Matrix Corp., Computer Services Div.
635 Hawaii St.
El Segundo, Cal. 90245
Wyle Laboratories
128 Maryland St.
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National Cash Register
921 N St.
Fresno, Cal. 93721
Hollander Associates
P.O. Box 2276
Fullerton, Cal. 92633
General Precision, Inc., Librascope Group
808 Western Ave.
Glendale, Cal. 91201
Celestronics Inc.
4311 East Seventh St.
Long Beach, Cal. 90804
Cimsco Data Processing Co.
5600 Paramount Blvd.
Long Beach, Cal. 90805
Control Technology, Inc.
3450 E. Spring St.
Long Beach, Cal. 90806
Tymshare Inc.
745 Distel Dr.
Los Altos, Cal. 94022
Alpha Omega Computer Systems
6505 Wilshire Blvd.
Los Angeles, Cal. 90048
Business Machines Institute
816 W. Olympic Blvd.
Los Angeles, Cal. 90015
Computer Usage Development Corp.
8939 Sepulveda Blvd.
Los Angeles, Cal. 91606
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8616 La Tijera
Los Angeles, Cal. 90045
Data Perspectives, Inc.
1724 Silver Lake Blvd.
Los Angeles, Cal. 90026
Data Processing Exchange, Inc.
1100 Glendon Ave., Suite 1647
Los Angeles, Cal. 90024
DataStation/Los Angeles
1401 W. Olympic Blvd.

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330 N. Laurel Ave.
Los Angeles, Cal. 90048
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1111 Wilshire
Los Angeles, Cal. 90017
E. H. Kramer & Co.
6505 Wilshire Blvd.
Los Angeles, Cal. 90048
Milner Bros. Prods.
8000 Blackburn Ave.
Los Angeles, Cal. 90048
Planning Research Corp.
1100 Glendon Ave.
Los Angeles, Cal. 90024
Programmatics Inc.
12011 San Vicente Blvd.
Los Angeles, Cal. 90049
Record Media Products
109 W. 9th St.
Los Angeles, Cal. 90015
Superior Data Processing Service
5429 E. Beverly Blvd.
Los Angeles, Cal. 90022
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8155 Van Nuys Blvd.
Panorama City, Cal. 91402
Dela Data Corp.
1718 San Pablo Ave.
Pinole, Cal. 94564
Inland Computer Service
3664 Market St.
Riverside, Cal. 92501
Aerojet-General Corp., Sacramento Plant
Hwy. 50 & Nimbus Rd.
P.O. Box 15847
Sacramento, Cal. 95813
Systems Data Processing Co.
920 23rd St.
Sacramento, Cal. 95816
Applied Data Systems, Inc.
203 California
San Francisco, Cal. 94111
Data-Copy Co.
760 Bryant St.
San Francisco, Cal. 94107
Mo Dorman Co.
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1441 E. Chestnut Ave.
Santa Ana, Cal. 92702
Information Development Co.
1621 East 17th St.
Santa Ana, Cal. 92701
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3760 State St.
Santa Barbara, Cal. 93105
Dashew Business Machines, Inc.
2219 Main St.
Santa Monica, Cal. 90406
System Development Corp.
2500 Colorado Ave.
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Informatics Inc.
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Programming Services, Inc.
18455 Burbank Blvd.
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Management Monitors Inc.
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6842 Van Nuys Blvd.
Van Nuys, Cal. 91405

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360 Western Federal Savings Bldg.
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6464 W. 14th St.
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300 East Hampden, Suite 220
Englewood, Colo. 80110

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248 Farmington Ave.
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Fort Lauderdale Technical Col-
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201 West Sunrise Blvd.
Ft. Lauderdale, Fla. 33311
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20 So. Laura St.
Jacksonville, Fla. 32202
Data Processing, Inc.
1225 American Heritage Life
Bldg.
Jacksonville, Fla. 32202
Data Dynamics, Inc.
P.O. Box 6841
MacDill AFB, Fla. 33608
Miami Institute of Technology
561 N.E. 79 St., Suite 238

Miami, Fla. 33138
Systems Programming Services
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Miami, Fla. 33143
Information Processing Inc.
520 Raleigh St.
Orlando, Fla. 32805

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Atlanta, Ga. 30305
C.P. & S., Inc.
1141 Spring St., N.W.
Atlanta, Ga. 30309
Data Management Associates,
Inc.
P.O. Box 7966
Atlanta, Ga. 30309

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Honolulu, Hawaii 96813
Telecheck Hawaii, Inc.
1481 South King St.
Honolulu, Hawaii 96814

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4001 West Devon Ave.
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Chicago, Ill. 60618
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Chicago, Ill. 60603

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Midwest Business Statistics
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Waukegan, Ill. 60085
Namar, Inc.
108 West Liberty Dr.
Wheaton, Ill. 60187
Technical Information Pro-
cessing
1503 N. Washington
Wheaton, Ill. 60187

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7009 N. River Rd.
Ft. Wayne, Ind. 46805
CASH, Inc.
300 E. Fall Creek Blvd.
N. Dr., Suite 401
Indianapolis, Ind. 46205

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508 10th St.
Des Moines, Ia. 50309

KANSAS

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3333 East Central
Wichita, Kan. 67208

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DA-PEX (Data Processing
Equipment Exchange Co.)
334 Francis Bldg.
Louisville, Ky. 40202

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Statistical Service Corp.
714 Grand Ave.
Shreveport, La. 71110

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21204
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Baltimore, Md. 21201
Documentation Inc.
4833 Rugby Ave.
Bethesda, Md. 20014
System Sciences, Inc.
4905 Del Ray Ave.
Bethesda, Md. 20014
Wolf Research and Develop-

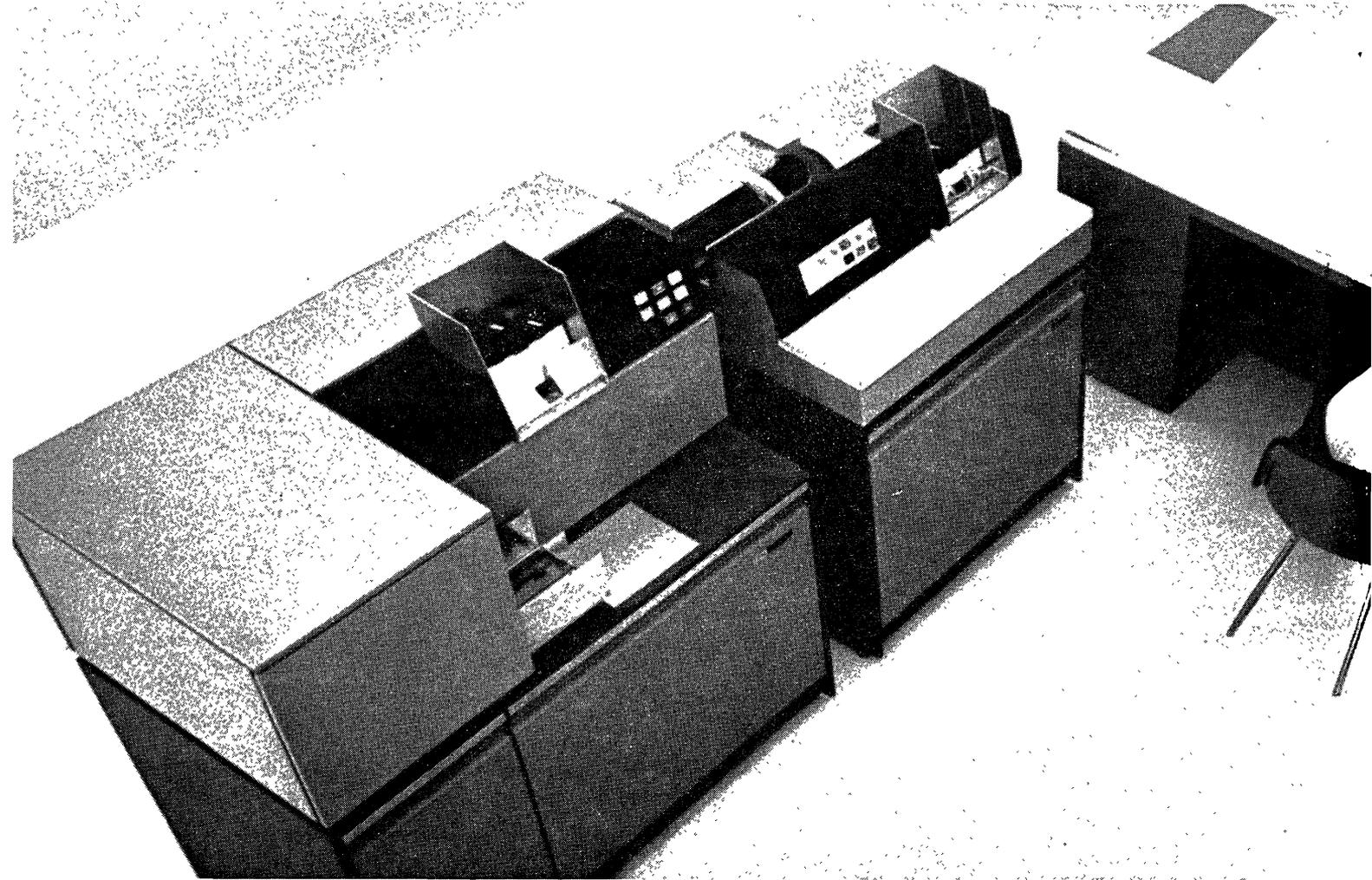
ment Corp.
5801 Annapolis Rd.
Bladensburg, Md. 20710
Delta Data Systems, Inc.
9903 Rhode Island Ave.
College Park, Md. 20741
Aerojet-General Corp.,
Industrial Systems Div.
Frederick Municipal Airport
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Frederick, Md. 21701
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26 North Summit Ave.
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4318 Hamilton St.
Hyattsville, Md. 20781
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Kensington, Md. 20795
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Orchard-Hays & Co., Inc.
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Silver Spring, Md. 20910
Systemat
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Silver Spring, Md. 20910
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1104 Spring St.
Silver Spring, Md. 20910

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Philip Hankins & Co., Inc.
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Arlington, Mass. 02174
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1079 Commonwealth Ave.
Boston, Mass. 02215
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1340 Commonwealth Ave.
Boston, Mass. 02134
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Statler Office Bldg.
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Technical Operations,
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IBM announces:

big computer features for the "little" 1130.



Now you can get a faster, more powerful, more responsive IBM 1130 Computing System. We've just introduced five new CPU models. We've extended the range of input/output speeds and on-line storage capacities. And we've improved data communications capabilities for the 1130.

In short, we've enhanced the present 1130 line so it can grow as your needs grow. Now you can get an 1130 that will tackle the big jobs—an 1130 with bigger capacities and faster throughput.

Five new CPU's. Now you have a wider choice of core sizes and speeds. We've added five new CPU's for a total of nine. You can get an 1130 with 4K, 8K, 16K or 32K words of core, depending on your requirements. And you have a choice of two memory speeds.

Up to five disk drives. Now you can hook on up to five disk drives for an on-line capacity of 2,560,000 words. All five disks can be operated simultaneously. Since the drives use interchangeable disk cartridges, you can amass unlimited off-line storage.

Faster printers and readers. Take your pick of three printers with speeds ranging up to 600 lines a minute. Choose one of four card readers with speeds ranging from 300 to 1000 cards a minute. You can even add an optical mark page reader. With an expanded line of I/O gear, you can put the 1130 to work on a wider range of applications.

Improved data communications. With the improved Synchronous Communications Adapter, the 1130 can become an economical terminal for your



SYSTEM/360 while retaining its stand-alone computing power. The adapter can transmit at 2400 bits per second in either of two modes—Synchronous Transmit Receive (STR) or Binary Synchronous (BSC) depending on your interfaces and programs. With the addition of BSC, you get more efficient, more flexible data transmission because it is code-insensitive.

New Disk Monitor System. IBM supports the 1130 with a Disk Monitor System which includes a FORTRAN compiler, a Supervisor Program, a Disk Utility Program, an Assembly Program and a Subroutine Library.

Then, there's quite an array of application programs already available for the 1130. In the engineering fields, for example, there are programs for civil engi-

neering, programs for petroleum engineering and exploration, programs for gear and spring design. There are scientific subroutines, linear programming and project control programs. There are commercial subroutines for applications like payroll and cost accounting.

Room for growth. With the expanded capabilities of the IBM 1130, you have a system that will grow with you. As your company or department grows, as your data processing applications become more numerous, your 1130 will keep right in step. Extended capabilities, powerful programming support, versatility, growth potential. These are the things you get, along with IBM service, from the 1130, our "little" computer.

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Whitney Rd.
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Office Park
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West Concord, Mass. 01781
Computer Fulfillment
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Winchester, Mass. 01890
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70 Madison St.
Worcester, Mass. 01610

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Ann Arbor, Mich. 48108
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104 West Huron St.
Ann Arbor, Mich. 48108
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4114 Telegraph Rd.
Bloomfield Hills, Mich. 48013
Modern Business Records
6030 Chase Rd.

Dearborn, Mich. 48126
Electronic Tabulating Corp.
14925 Schaeffer Hwy.
Detroit, Mich. 48227
Martin W. Wyrod Associates
747 New Center Bldg.
Detroit, Mich. 48202
Computer Center
1228 S. Burdick
Kalamazoo, Mich. 49001
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Minneapolis, Minn. 55440
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Minneapolis, Minn. 55413
National Computer Systems, Inc.
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10130 Hwy. 55
Minneapolis, Minn. 55427
Tri-Data, Inc.
3717 West 50th St.
Minneapolis, Minn. 55410

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1300 First National Bank Bldg.
Jackson, Miss. 39201

MISSOURI

Information Management Associates Inc.
4221 Lindell
St. Louis, Mo. 63108
McDonnell Automation Co.
P.O. Box 516
St. Louis, Mo. 63166

NEBRASKA

Electronic Computer Programming Institute
305 S. 17th St.
Omaha, Nebr. 68102
Mid-America Computer & Data Processing Ctr.
306 W.O.W. Bldg., 14th & Farnham
Omaha, Nebr. 68102

NEW HAMPSHIRE

Time Share Corp.
Lyme Rd.
Box 301
Hanover, N.H. 03755

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Computer Sharing Inc.
363 Wedgewood Dr.
Blackwood, N.J. 08012

Information Sciences Associates
1110 Wynwood Ave.
Cherry Hill, N.J. 08034
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120 Brighton Rd.
Clifton, N.J. 07012
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931 President St.
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Buffalo, N.Y. 14211
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Hempstead, N.Y. 11550
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Eagle Hill Court
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New York, N.Y. 10017
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New York, N.Y. 10021
Infret Corp.
80 Wall St.
New York, N.Y. 10005
International Data Processing
Corp.
15 E. 26th St.
New York, N.Y. 10010
The Matrix Corp., Computer Ser-
vices Div.
380 Madison Ave.
New York, N.Y. 10017
M.I.D.S., Inc.
545 Eighth Ave.
New York, N.Y. 10018
National Manpower Register
635 Madison Ave.
New York, N.Y. 10022
Preferred Tabulating Service
Inc.
114 East 28th St.
New York, N.Y. 10016
Programming & Systems, Inc.
33 West 42 St.
New York, N.Y. 10036
Programming Methods Inc.
51 Madison Ave.
New York, N.Y. 10006
Randolph Computer Corp.
200 Park Ave.
New York, N.Y. 10017
Record Processing Corp.
111 4th Ave.
New York, N.Y. 10003
Reliable Systems Inc.

475 5th Ave.
New York, N.Y. 10017
Scantlin Electronics, Inc.
60 Broad St.
New York, N.Y. 10004
The Service Bureau Corp.
1350 Avenue of the Americas
New York, N.Y. 10019
Special Studies, Inc.
122 East 42nd St.
New York, N.Y. 10017
Standard Programs Corp.
342 Madison Ave.
New York, N.Y. 10017
Theodore Stein
400 Madison Ave.
New York, N.Y. 10017
Tape Tabulating Inc.
19 Union Sq. West
New York, N.Y. 10003
Time Brokers, Inc.
485 Fifth Ave.
New York, N.Y. 10017
Management Advisory Services
2951 Stanley Place
Oceanside, N.Y. 11572
Computer Fulfillment Corp.
84 S. Bayles Ave.
Port Washington, N.Y. 11050
Kurt Enslin
42 East Ave.
Rochester N.Y. 14604
Infotec, Inc.
80 Urban Ave.
Westbury, N.Y. 11590
Electronic Computer Pro-
gramming Inst. of West-
Rockl.
235 Mamaroneck Ave.
White Plains, N.Y. 10605
Mathematical Applications
Group, Inc.
180 South Broadway
White Plains, N.Y. 10605
Systems Programming, Inc.
175 Main St.
White Plains, N.Y. 10601
Marks-Baer, Inc.
5586 Main St.
Williamsville, N.Y. 14221
Celestron Associates, Inc.
4 Broadway
Valhalla, N.Y. 10595
Gene Maior & Assoc. Inc.
138 Nepperham Ave.
Yonkers, N.Y. 10701

NORTH CAROLINA

Alverson-Draughon College
122 East Stonewall St.
Charlotte, N.C. 28201
Arista Data Processing Ctr.
438 Goldfloss St.
Winston-Salem, N.C. 27107

OHIO

Data Control Services
948 High Ave., SW
Canton, O. 44706
Computer Programming Concepts,
Inc.
Atkinson Sq. - Suite 802
Cincinnati, O. 45246
Continental Systems, Inc.
205 W. Fourth St.
Cincinnati, O. 45202
Medcomp Research Corp.
3333 Vine St.
Cincinnati, O. 45220
Bunker-Ramo Corp., Numerical
Control Systems Div.
1070 East 152nd St.

Cleveland, Ohio 44110
Champion Service Corp.
19001 Villaview Rd.
Cleveland, O. 44119
Computer Systems Co.
1470 St. Charles Ave.
Cleveland, O. 44107
Battelle Memorial Institute
Columbus Laboratories
505 King Ave.
Columbus, O. 43201
Management Information Ser-
vices, Inc.
42 E. Gay St.
Columbus, O. 43215
MATA College of Automation
415 E. Broad St.
Columbus, O. 43215
Reiland, Page & Associates,
Inc.
1521 East Broad St.
Columbus, O. 43205
J. R. Ahart, Inc.
627 Salem Ave.
Dayton, O. 45406
Data Services Corp.
2835 Springboro Rd.
Dayton, O. 45401
Mead Management Services
Talbot Tower
Dayton, O. 45402
The National Cash Register
Co.
Main & "K" Sts.
Dayton, O. 45409
Barron Data Systems, Inc.
3556 Monroe St.
Toledo, O. 43606
Caltec, Inc.
3023 Sylvania Ave.
Toledo, O. 43613
Carter & Associates
2711 Oakgrove
Toledo, O. 43613
Toledo Technical College
1189 W. Central Ave.
Toledo, O. 43610
National Data Processing
Corp.
2950 Mohoning Ave.
Youngstown, O. 44509
Record Control Systems
P.O. Box 2281
No. Side Post Office
Youngstown, O. 44504

OKLAHOMA

Sooner Business Systems
1100 Northeast 36th St.
Oklahoma City, Okla. 73111
Statistical Computing Ctr.,
Inc.
2501 North Stiles
Oklahoma City, Okla. 73105
Indel Inc.
6749 East 12 St.
Tulsa, Okla. 74112
International Digitizing
Corp.
P.O. Box 7337
Tulsa, Okla. 74105
Southwestern Computing Ser-
vice, Inc.
1631 South Boston Ave.
Tulsa, Okla. 74119

OREGON

American Data Services, Inc.
0110 S.W. Bancroft St.
Portland, Ore. 97201
Automated Information, Inc.
309 S.W. Fourth Ave.

Portland, Ore. 97204

PENNSYLVANIA

Computer Usage Development
Corp.
Barclay Bldg.
City Line and Belmont Aves.
Bala Cynwyd, Pa. 19004
Innovation Consultants, Inc.
4 E. State St.
Doylestown, Pa. 18901
Continental Computer Associ-
ates, Inc.
Beaver Hill
Jenkinstown, Pa. 19046
Mauchly Associates, Inc.
Montgomeryville, Pa. 18936
Mauchly Systems, Inc.
Box 279
Montgomeryville, Pa. 18936
MSADP, Inc.
835 E. Germantown Pike
Norristown, Pa. 19401
Auerbach Corp.
121 North Broad St.
Philadelphia, Pa. 19107
Computer Command and Control
Co.
33rd & Arch Sts.
Philadelphia, Pa. 19104
Datatronics, Inc.
2501 Dickinson St.
Philadelphia, Pa. 19146
I. D. R. Co., Inc.
325 Chestnut St.
Philadelphia, Pa. 19106
Institute for Scientific
Information
325 Chestnut St.
Philadelphia, Pa. 19106
Johnson Computing & Tabulat-
ing Corp.
5800 Marvine St.
Philadelphia, Pa. 19140
Kardon Computing Ctr.
219 North Broad St.
Philadelphia, Pa. 19107
Univac Div., Sperry Rand
Corp.
P.O. Box 8100
Philadelphia, Pa. 19104
UNIVAC DP Centers
P.O. Box 8100
Philadelphia, Pa. 19101
The CIMS Group, Inc.
Penn Sharaton
Pittsburgh, Pa. 15230
Computab, Inc.
4202 Murray Ave.
Pittsburgh, Pa. 15217
Data Processing Service
908 Penn. Ave.
Pittsburgh, Pa. 15222
Ecco Consulting Inc.
615 Washington Rd.
Pittsburgh, Pa. 15228
Information Systems for
Management, Inc.
323 Third Ave.
Pittsburgh, Pa. 15222
Mechanized Business Inc. (MBI)
Koppers Bldg.
Pittsburgh, Pa. 15219
Pers Inc.
Box 7304
Pittsburgh, Pa. 15213
Keystone Computer Assoc., Inc.
409 North Easton Rd.
Willow Grove, Pa. 19090
Philco-Ford Corp.
3900 Welsh Rd.
Willow Grove, Pa. 19008

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ROSTER OF ORGANIZATIONS SUPPLYING ENTIRE EQUIPMENTS FOR COMPUTING AND DATA PROCESSING SYSTEMS

For specific information about the organizations listed in this roster, please see their entries in the "Roster of Organizations" beginning on page 8.

ALABAMA

Data Processors Supply Co.
Box 3263
Huntsville, Ala. 35810

ARIZONA

General Electric Process
Computer Business Section
2255 W. Desert Cove Rd.
Phoenix, Ariz. 85029

CALIFORNIA

Autonetics
3370 Miraloma Ave.
Anaheim, Cal. 92803
California Computer Products
Inc. (CalComp)
305 North Muller St.
Anaheim, Cal. 92803
Comcor, Inc.
1335 S. Claudina St.
Anaheim, Cal. 92803
Pacific Ordnance & Electron-
ics Co. (Codamite Div.)
1747K1 W. Lincoln Ave.
Anaheim, Cal. 92801
The Bunker-Ramo Corp.
8433 Fallbrook Ave.
Canoga Park, Cal. 91304
Litton Encoder Div.
20745 Nordhoff St.
Chatsworth, Cal. 91311
Syston-Donner Corp.
888 Galindo St.
Concord, Cal. 94520
Ampex Corp., Computer Pro-
ducts Div.
P.O. Box 329
Culver City, Cal. 90231
Data Products Corp.
8535 Warner Dr.
Culver City, Cal. 90230
Non-Linear Systems, Inc.
P.O. Box N
Del Mar, Cal. 92014
The Matrix Corp., Computer
Services Div.
635 Hawaii St.
El Segundo, Cal. 90245
Wyle Laboratories
128 Maryland St.
El Segundo, Cal. 90245
National Cash Register
921 N St.
Fresno, Cal. 93721
General Precision, Inc.,
Librascope Group
808 Western Ave.
Glendale, Cal. 91201
Electronic Memories, Inc.
12621 Chadron Ave.
Hawthorne, Cal. 90250
Celestronics Inc.
4311 East Seventh St.
Long Beach, Cal. 90804
Tymshare Inc.
745 Distel Dr.
Los Altos, Cal. 94022
Control Data Corp.
8616 La Tijera
Los Angeles, Cal. 90045
Data Processing Exchange, Inc.
1100 Glendon Ave., Suite
#1647
Los Angeles, Cal. 90024
Houston Fearless Corp.
11801 W. Olympic Blvd.
Los Angeles, Cal. 90064
Superior Data Processing Ser-
vice
5429 E. Beverly Blvd.
Los Angeles, Cal. 90022
West Eleven Inc. (Distributor
for Hitachi)
11836 Vicente Blvd.
Los Angeles, Cal. 90049
Data Associates
1160 Terra Bella Ave.
Mountain View, Cal. 94040
Fairchild Semiconductor
313 Fairchild Dr.
Mountain View, Cal. 94042
Hewlett-Packard Co., Mountain
View Div.
690 Middlefield Rd.
Mountain View, Cal. 94040
Decision Control, Inc./Data
Machines, Inc.
1590 Monrovia Ave.
Newport Beach, Cal. 92660
Datametrics Corp.
8217 Lankershim Blvd.
North Hollywood, Cal. 91605
Hewlett-Packard
1501 Page Mill Rd.
Palo Alto, Cal. 94304
Beckman Instruments, Inc.
2200 Wright Ave.
Richmond, Cal. 94804
Litton Industries Electron
Tube Div.
960 Industrial Rd.
San Carlos, Cal. 94070
Moore-Associates Inc.
815 American St.
San Carlos, Cal. 94070
Stromberg-Carlson Corp.,
Data Products Div.
P.O. Box 2449
1895 Hancock St.
San Diego, Cal. 92112
Mo Dorman Co.
785 Mission St.
San Francisco, Cal. 94103
Clary Datacomp Systems
404 Junipero Sierra (P.O.
Box 1)
San Gabriel, Cal. 91776
Friden, Inc., A Division of
The Singer Co.
2350 Washington Ave.
San Leandro, Cal. 94577
Bolt Beranek and Newman Inc.,
Data Equipment Div.
2126 So. Lyon St.
Santa Ana, Cal. 92705
Engineered Electronics Co.
1441 E. Chestnut Ave.
Santa Ana, Cal. 92702
Pacific Data Systems, Inc.
644 Young St.
Santa Ana, Cal. 92705
Raytheon Computer
2700 South Fairview St.
Santa Ana, Cal. 92704
Standard Computer Corp.
633 East Young St.
Santa Ana, Cal. 92705
Calma Co.
346 Mathew St.
Santa Clara, Cal. 95050
Scientific Data Systems, Inc.
1649 Seventeenth St.
Santa Monica, Cal. 90404

DISTRICT OF COLUMBIA

Computer Usage Development
Corp.
7315 Wisconsin Ave., N.W.
Washington, D.C. 20014

FLORIDA

Systems Engineering Labora-
tories, Inc.
P.O. Box 9148
Ft. Lauderdale, Fla. 33310
Soroban Engineering, Inc.
P.O. Box 1690
Melbourne, Fla. 32901
E D P Corp.
1900 North Mills Ave.
Orlando, Fla. 32803

HAWAII

Telecheck Hawaii, Inc.
1481 South King St.
Honolulu, Hawaii 96814

ILLINOIS

R. Edward Stemm, Inc.
17 W 480 Lake St.
Addison, Ill. 60101
Datronic Rental Corp.
5210 Wesley Terrace
Chicago, Ill. 60656
Global Tabulating Equipment
Corp.
1229 W. Washington Blvd.
Chicago, Ill. 60607
Pivan Engineering Co.
3535 West Peterson Ave.
Chicago, Ill. 60645
Tab Products of Ill.
5151 N. Harlem
Chicago, Ill. 60656
Victor Comptometer Corp.,
Business Machines Group
3900 N. Rockwell
Chicago, Ill. 60618
The Pioneer Electric & Rsch.
Corp.
743 Circle Ave.
Forest Park, Ill. 60130
Drake Manufacturing Co.
4626 N. Olcott Ave.
Harwood Heights, Ill. 60656
Simulators, Inc.
3611 Commercial Ave.
Northbrook, Ill. 60062

COLORADO

Auto-trol Corp.
6621 West 56th Ave.
Arvada, Colo. 80002
Mohawk Data Sciences Corp.
245 Columbine St.
Denver, Colo. 80206

CONNECTICUT

Connecticut Technical Corp.
3000 Main St.
Hartford, Conn. 06120
Technical Measurement Corp.
441 Washington Ave.
North Haven, Conn.
Roytron
165 Dexter Ave.
West Hartford, Conn. 06110

Entire Equipments

Addo-X Sales Corp.
6549 West North Ave.
Oak Park, Ill. 60302
All Data Processing Machines,
Inc.
105 Hinricher St.
Willow Springs, Ill. 60480

LOUISIANA

Statistical Service Corp.
714 Grand Ave.
Shreveport, La. 71110

MARYLAND

Towson Laboratories, Inc.
3500 Parkdale Ave.
Baltimore, Md. 21211
Jonker Corp.
26 North Summit Ave.
Gaithersburg, Md. 20760
Control Processing Services
5809 Annapolis Rd.
Hyattsville, Md. 20784
Andromeda, Inc.
10501 Wheatley St.
Kensington, Md. 20795
Rixon Electronics, Inc.
2120 Industrial Pkwy.
Montgomery Industrial Park
Silver Spring, Md. 20904

MASSACHUSETTS

Adage, Inc.
107 Commonwealth Ave.
Boston, Mass. 02215
Anelex Corp.
150 Causeway St.
Boston, Mass. 02114
DI/AN Controls, Inc.
944 Dorchester Ave.
Boston, Mass. 02125
L. Goldstein & Son, Inc.
177 Milk St.
Boston, Mass. 02109
Honeywell Inc., Computer
Control Div.
Old Connecticut Path
Framingham, Mass. 01701
Digital Equipment Corp.
146 Main St.
Maynard, Mass. 01754
Control Logic, Inc.
3 Strathmore Rd.
Natick, Mass. 01760
GPS Instrument Co., Inc.
188 Needham St.
Newton, Mass. 02164
Research Calculations, Inc.
200 Boylston St.
Newton, Mass. 02167
Wang Laboratories Inc.
836 North St.
Tewksbury, Mass. 01876
Cybetronics Inc.
132 Calvary St.
Waltham, Mass. 02154
Invac Corp.
26 Fox Rd.
Waltham, Mass. 02154
Numex Corp.
223 Crescent St.
Waltham, Mass. 02154
Spear, Inc.
335 Bear Hill Rd.
Waltham, Mass. 02154
Namac, Inc.
534 Boston Post Rd.
Wayland, Mass. 01778
Honeywell Electronic Data
Processing Div.
60 Walnut St.

Wellesley Hills, Mass. 02181
MAI Equipment Corp.
100 Providence Hwy.
Westwood, Mass. 02090

MICHIGAN

Technical Advisors, Inc.
104 West Huron St.
Ann Arbor, Mich. 48108
Burrroughs Corp.
6071 Second Ave.
Detroit, Mich. 48232
Bryant Computer Products (Div.
of Ex-Cell-O Corp.)
850 Ladd Rd.
Walled Lake, Mich. 48088

MINNESOTA

Control Data Corp.
8100 34th Ave. South
Minneapolis, Minn. 55440
National Computer Systems, Inc.
1015 South 6th St.
Minneapolis, Minn. 55415
Control Data Corp.
2401 N. Fairview Ave.
St. Paul, Minn. 55113

MISSOURI

Kansas City College of Auto-
mation
3230 Main St.
Kansas City, Mo. 64111

NEW JERSEY

Keuffel & Esser Co.
300 Adams St.
Hoboken, N.J. 07030
Ohr-tronics, Inc.
305 West Grand Ave.
Montvale, N.J. 07645
Electro-Mechanical Research,
Inc.
P.O. Box 44
Princeton, N.J. 08540
Quindar Electronics Inc.
60 Fadem Rd.
Springfield, N.J. 07081
Randomatic Data Systems, Inc.
344 West State St.
Trenton, N.J. 08618
Pacific Data Systems Inc.
1557 Oakland Ave.
Union, N.J. 07083

NEW YORK

Digitronics Corp.
1 Albertson Ave.
Albertson, N.Y. 11507
Mauchly Honig Time Sharing
Associates, Inc.
116 North Central Ave.
Hartsdale, N.Y. 10530
Information Displays, Inc.
102 East Sandford Blvd.
Mt. Vernon, N.Y. 10550
Monarch Metal Products, Inc.
MacArthur Ave.
New Windsor, N.Y. 12550
Addo-X, Inc.
845 Third Ave.
New York, N.Y. 10022
Analytic Computing Services,
Inc.
1140 Broadway
New York, N.Y. 10001

The Automation Co.
342 Madison Ave.
New York, N.Y. 10017
Comput-A-Credit, Inc.
Pan Am Bldg.
200 Park Ave.
New York, N.Y. 10017
Computer Applications Inc.
555 Madison Ave.
New York, N.Y. 10022
The Computer Exchange, Inc.
30 East 42nd St.
New York, N.Y. 10017
Cyber-Tronics, Inc.
915 Broadway
New York, N.Y. 10010
Datastation of New York, Inc.
666 Third Ave.
New York, N.Y. 10017
Thomas Ekeland Co.
100 William St.
New York, N.Y. 10038
Randolph Computer Corp.
200 Park Ave.
New York, N.Y. 10017
Digital Electronics Inc.
Ames Court
Plainview, N.Y. 11803
Potter Instrument Co., Inc.
151 Sunnyside Blvd.
Plainview, L.I., N.Y. 11803
Electronic Business Machines
Co.
625 Bard Ave.
Staten Island, N.Y. 10310
Wild & Associates, Inc.
200 Michael Dr.
Syosset, N.Y. 11791
Infotec, Inc.
80 Urban Ave.
Westbury, N.Y. 11590
Gene Maior & Assoc. Inc.
138 Nepperham Ave.
Yonkers, N.Y. 10701

NORTH CAROLINA

Raleigh School of Data Pro-
cessing, Inc.
334 South Salisbury St.
Raleigh, N.C. 27601

OHIO

Addressograph-Multigraph Corp.
1200 Babbitt Rd.
Cleveland, O. 44117
Liebert Corp.
500 Dana Ave.
Columbus, O. 43223
The National Cash Register Co.
South Main & K Sts.
Dayton, O. 45409
Bailey Meter Co.
Wickliffe, O. 44092

OKLAHOMA

Sooner Business Systems
1100 Northeast 36th St.
Oklahoma City, Okla. 73111

OREGON

Argonaut Associates, Inc.
Box K
Beaverton, Ore. 97005

PENNSYLVANIA

Chrono-log Corp.

2583 West Chester Pike
Broomall, Pa. 19008
Continental Computer Associ-
ates, Inc.
Beaver Hill
Jenkintown, Pa. 19046
MSADP, Inc.
835 E. Germantown Pike
Norristown, Pa. 19401
General Electric Co., Printer-
Reader Business Section
511 North Broad St.
Philadelphia, Pa. 19123
Univac Div., Sperry Rand
Corp.
P.O. Box 8100
Philadelphia, Pa. 19104
Data Systems Corp.
16 Elizabeth St.
West Conshohocken, Pa.
19428
Philco-Ford Corp. (Div. of
Ford Motor Co.)
3900 Welsh Rd.
Willow Grove, Pa. 19008

TENNESSEE

Memphis Methods & Tabulating
Service
56 N. Main St.
Memphis, Tenn. 38103

TEXAS

Recognition Equipment Inc.
1500 West Mockingbird Lane
Dallas, Tex. 75235
Scientific Control Corp.
14008 Distribution Way
Dallas, Tex. 75234
Geo Space Corp.
5803 Glenmont
Houston, Tex. 77036
Mactec (Div. of McDonnell Co.)
Suite 400/500 Jefferson Bldg.
Houston, Tex. 77002

VERMONT

Vermont Research Corp.
Precision Park
N. Springfield, Vt. 05150

VIRGINIA

Keltec Industries, Inc.
5901 Edsall Rd.
Alexandria, Va. 22314
General Kinetics Inc.
2611 Shirlington Rd.
Arlington, Va. 22206

WASHINGTON

Computer Supplies Co.
2301 Fifth Ave.
Seattle, Wash. 98121
Tally Corp.
1310 Mercer St.
Seattle, Wash. 98109

WYOMING

Wyoming Electrodata Corp.
309 E. Main
Riverton, Wyo.

(Please turn to page 65)

ROSTER OF ORGANIZATIONS PROVIDING LEASING OR FINANCIAL SERVICES IN THE COMPUTER FIELD

For specific information about the organizations listed in this roster, please see their entries in the "Roster of Organizations" beginning on page 8.

ARIZONA

General Electric Co., Information Systems Marketing Operation (ISMO)
13430 N. Black Canyon Hwy.
Phoenix, Ariz. 85029

ARKANSAS

Data Tronics Corp.
310 Towson Ave.
Ft. Smith, Ark. 72901

CALIFORNIA

Comcor, Inc.
1335 S. Claudina St.
Anaheim, Cal. 92803
Systron-Donner Corp.
888 Galindo St.
Concord, Cal. 94520
Data Products Sales Corp.
8535 Warner Dr.
Culver City, Cal. 90231
Datacraft Inc.
15225 S. Main St.
Gardena, Cal. 90247
General Precision, Inc. Librascope Group
808 Western Ave.
Glendale, Cal. 91201
Remex Electronics
5250 West El Segundo Blvd.
Hawthorne, Cal. 90250
Alpha Omega Computer Systems
6505 Wilshire Blvd.
Los Angeles, Cal. 90048
Control Data Corp.
8616 La Tijera
Los Angeles, Cal. 90045
Data Processing Exchange, Inc.
1100 Glendon Ave., Suite 1647
Los Angeles, Cal. 90024
Milner Bros. Prods.
8000 Blackburn Ave.
Los Angeles, Cal. 90048
Superior Data Processing Service
5429 E. Beverly Blvd.
Los Angeles, Cal. 90022
Beckman Instruments, Inc.
2200 Wright Ave.
Richmond, Cal. 94804
Mo Dorman Co.
785 Mission St.
San Francisco, Cal. 94103
Clary Datacomp Systems
404 Junipero Sierra (P.O. Box 1)
San Gabriel, Cal. 91776

WASHINGTON, D. C.

C-E-I-R, Inc.
5272 River Rd.
Washington, D. C. 20016

FLORIDA

Systems Engineering Laboratories, Inc.
P. O. Box 9148
Ft. Lauderdale, Fla. 33310

HAWAII

Telecheck Hawaii, Inc.
1481 South King St.
Honolulu, Hawaii 96814

ILLINOIS

Datronc Rental Corp.
5210 Wesley Terrace
Chicago, Ill. 60656
Global Tabulating Equipment Corp.
1229 W. Washington Blvd.
Chicago, Ill. 60607
William M. Kordsiemon and Assoc.
100 West Monroe St.
Chicago, Ill. 60603
Addo-X Sales Corp.
6549 West North Ave.
Oak Park, Ill. 60302
All Data Processing Machines, Inc.
105 Hinricher St.
Willow Springs, Ill. 60480

KENTUCKY

DA-PEX (Data Processing Equipment Exchange Co.)
334 Francis Bldg.
Louisville, Ky. 40202

LOUISIANA

EDACO, Inc.
348 Baronne St.
New Orleans, La. 70112
Statistical Service Corp.
714 Grand Ave.
Shreveport, La. 71110

MARYLAND

Computer Usage Development Corp.
22 West Rd., Towson
Baltimore, Md. 21204
Fedder Data Centers, Inc.
307 S. Sharp St.
Baltimore, Md. 21201

MASSACHUSETTS

Wang Laboratories Inc.
836 North St.
Tewksbury, Mass. 01876
MAI Equipment Corp.
100 Providence Hwy.
Westwood, Mass. 02090

MICHIGAN

Michigan Business Machines
1375 E. Square Lake Rd.
Troy, Mich. 48084

MINNESOTA

Control Data Corp.
8100 34th Ave. South
Minneapolis, Minn. 55440

NEW YORK

Mauchly Honig Time Sharing Associates, Inc.
116 North Central Ave.
Hartsdale, N.Y. 10530
Information Displays, Inc.
102 East Sandford Blvd.
Mt. Vernon, N.Y. 10550
Comput-A-Credit, Inc.
Pan Am Bldg.
200 Park Ave.
New York, N.Y. 10017
The Computer Exchange, Inc.
30 East 42nd St.
New York, N.Y. 10017
Cyber-Tronics, Inc.
915 Broadway
New York, N.Y. 10010
Datastation of New York, Inc.
666 Third Ave.
New York, N.Y. 10017
E D P Leasing Corp.
118 East 60th St.
New York, N.Y. 10022
Information Processing Systems, Inc.

200 West 57th St.
New York, N.Y. 10019
LMC Data, Inc.
116 East 27th St.
New York, N.Y. 10016
Programming & Systems Inc.
33 West 42 St.
New York, N.Y. 10036
Programming & Systems Institute
33 West 42nd St.
New York, N.Y. 10036
Randolph Computer Corp.
200 Park Ave.
New York, N.Y. 10017
Tape Tabulating Inc.
19 Union Sq. West
New York, N.Y. 10003
Time Brokers Inc.
485 5th Ave.
New York, N.Y. 10017
Potter Instrument Co., Inc.
151 Sunnyside Blvd.
Plainview, L.I., N.Y. 11803
Electronic Business Machines Co.
625 Bard Ave.
Staten Island, N.Y. 10310
Gene Maior & Assoc. Inc.
138 Nepperham Ave.
Yonkers, N.Y. 10701

NEW JERSEY

Ohr-tronics, Inc.
305 West Grand Ave.
Montvale, N.J. 07645

OHIO

Data Services Corp.
2835 Springboro Rd.
Dayton, O. 45401
The National Cash Register Co.
South Main & K Sts.
Dayton, O. 45409

OKLAHOMA

Sooner Business Systems
1100 Northeast 36th St.
Oklahoma City, Okla. 73111

PENNSYLVANIA

Continental Computer Associates, Inc.
Beaver Hill

Jenkintown, Pa. 19046
Mauchly Techniques, Inc.
P. O. Box 279
Montgomeryville, Pa. 18936

RHODE ISLAND

Litton Electronic Business
Systems - Monroe Inter-
national Inc.
955 Waterman Ave.
E. Providence, R.I. 02914
The Computer Center of Southern
N.E.
Rm. 520, Industrial Bank Bldg.
111 Westminster St.
Providence, R.I. 02903

TENNESSEE

Memphis Methods & Tabulating
Service
56 N. Main St.
Memphis, Tenn. 38103

TEXAS

Data Automation Co., Inc.
4858 Cash Rd.
Dallas, Tex. 75247
University Computing Co.
1300 Frito-Lay Tower
Dallas, Tex. 75235

VIRGINIA

Anagram Corp.
6560 Backlick Rd.
Springfield, Va. 22150

WASHINGTON

Computer Supplies Co.
2301 Fifth Ave.
Seattle, Wash. 98121

WISCONSIN

Midland National Bank
201 West Wisconsin Ave.
Milwaukee, Wis. 53203

WYOMING

Wyoming Electrodata Corp.
309 E. Main
Riverton, Wyo.

ENGLAND

System Computers Ltd.
Fossway, Newcastle-on-Tyne. 6
Northumberland, England

**Roster of Computing,
Data Processing and
Consulting Services**

(Cont'd. from page 61)

RHODE ISLAND

Litton Electronic Business Sys-
tems
955 Waterman Ave.
E. Providence, R.I. 02914
The Computer Center of Southern
N.E.
Rm. 520, Industrial Bank Bldg.
111 Westminster St.
Providence, R.I. 02903
Computer Service Consultants,
Inc.
59 West Shore Rd.
Warwick, R.I. 02889

TENNESSEE

Management Computer Controls,
Inc.
3385 Airways Blvd.
Memphis, Tenn. 38130
Memphis Methods & Tabulating
Service
56 N. Main St.
Memphis, Tenn. 38103
Utility Billing, Inc.
P.O. Box 22247
Memphis, Tenn. 38122

TEXAS

Austin Data Processing Service
Inc.
306 West 16th St.
Austin, Tex. 78701
Management Research Inter-
national, Inc.
503 Mutual Savings Bldg.
Austin, Tex. 78701
Dallas Tabulating Service, Inc.
1222 Ft. Worth Ave.
Dallas, Tex. 75208
H. J. Gruy and Associates, Inc.
2501 Cedar Springs Rd.
Dallas, Tex. 75201
Mathematical Engineering Assoc-
iates, Inc.
7007 Preston Rd.
Dallas, Tex. 75205
Neat Data Processing Services
212 North St. Paul
Dallas, Tex. 75201
John K. Paden Co.
5838 Live Oak St.
Dallas, Tex. 75214
University Computing Co.
1300 Frito-Lay Tower
Dallas, Tex. 75235
Automated Business Records, Inc.
1601 Wyoming
El Paso, Tex. 79902
El Paso Data Services, Inc.
616 E. Yandell Dr.
El Paso, Tex. 79902
Applied Industrial Dynamics,
Inc.
100 N. University Dr.
Fort Worth, Tex. 76107
Ad Valorem Records Inc.
3766 Richmond Ave.
Houston, Tex. 77027
Control Data Corp., Houston
Data Ctr.
7135 Office City Dr.
Houston, Tex. 77017

Geo Space Corp., Computer Div.
3009 S. Post Oak Rd.
Houston, Tex. 77027
Mactex (Div. of McDonnell Co.)
Suite 400/500 Jefferson Bldg.
Houston, Tex. 77002
Mikron, Inc. - Bankers Data
Services, Inc.
505 Hadley
Houston, Tex. 77002
Hub S. Ratliff, Data Process-
ing Consultants
P.O. Box 22487
Houston, Tex. 77027
Systems Management Services,
Inc.
201 Main St.
Houston, Tex. 77002
Globe Exploration Co.
Box 4547
Midland, Tex. 79701
Petty Laboratories Inc.
P.O. Drawer 2061
San Antonio, Tex. 78206

UTAH

Addressograph-Multigraph Corp.
346 South Fifth East
Salt Lake City, Utah 84110
Jack M. Harrison & Associates
57 East Oakland Ave.
Salt Lake City, Utah 84115

VIRGINIA

Keltec Industries, Inc.
5901 Edsall Rd.
Alexandria, Va. 22314
Systematic Services, Inc.
631 South Pickett St.
Alexandria, Va. 22304
Data, Inc.
4620 Lee Hwy.
Arlington, Va. 22207
General Kinetics Inc.
2611 Shirlington Rd.
Arlington, Va. 22206
SAID, Inc.
1243 West Broad St.
Falls Church, Va. 22046
SAID, Inc.
645 Oakley Ave.
Lynchburg, Va. 24501
Aries Corp.
Westgate Research Park
McLean, Va. 22101
Anagram Corp.
6560 Backlick Rd.
Springfield, Va. 22150

WASHINGTON

Computer Supplies, Inc.
2301 Fifth Ave.
Seattle, Wash. 98121
Northwest Management Ser-
vices, Inc.
1107 Pike St.
Seattle, Wash. 98101
Universal Systems & Program-
ming Service
2217A 4th Ave.
Seattle, Wash. 98121
The Arce Corp.
N 4407 Division
Spokane, Wash. 99207
Stephens-Nelsen Data Process-
ing Ctr.
N. 711 Lincoln
Spokane, Wash. 99201
Agency Service Bureau, Inc.
10103 Bristol Ave., S.W.

Tacoma, Wash. 98499
Computer Services Co.
Lakewood Center Bldg.
(P.O. Box 3396)
Tacoma, Wash. 98499

WEST VIRGINIA

Business Computer Service,
Inc.
124 Court St.
Charleston, W. Va. 25301

WISCONSIN

Kyros Corp.
5428 Lake Mendota Dr.
Madison, Wis. 53705
Midland National Bank
201 West Wisconsin Ave.
Milwaukee, Wis. 53203

CANADA

Nash and Harrison Ltd.
1355 Wellington St.
Ottawa 3, Ontario, Canada

ENGLAND

Management Dynamics Ltd.
Heathrow House, Bath Rd.
Cranford, Hounslow, Middx.
England
English Electric Computers
Ltd.
Kidsgrove, Stoke-on-Trent
Staffordshire, England

GERMANY

Zuse KG
Grosse Industriestrasse
19-21
643 Bad Hersfeld, Germany
Mathematischer Beratungs-und
Programmierungsdienst
Recheufentrum Rhin-Ruhr
Kleppingstrasse 26
4600 Dortmund, W. Germany

Roster of Equipments

(Cont'd. from page 63)

ENGLAND

Computer Technology Ltd.
Sunley House, Marylands Ave.
Hemel Hempstead, Herts, Eng.
System Computers Ltd.
Fossway, Newcastle-on-Tyne. 6
English Electric Computers Ltd.
Kidsgrove
Stoke-on-Trent, Staffordshire
England

GERMANY

Zuse KG
Grosse Industriestrasse 19-21
643 Bad Hersfeld, Germany

ROSTER OF COMMERCIAL TIME-SHARED COMPUTING SERVICES

For specific information about the organizations listed in this roster, please see their entries in the "Roster of Organizations beginning on page 8.

ALABAMA

Southern Computer Service
280 T.V. Rd., P.O. Box 100
Dothan, Ala. 36301

ARIZONA

General Electric Co., Information Systems Marketing Operation (ISMO)
13430 N. Black Canyon Hwy.
Phoenix, Ariz. 85029

CALIFORNIA

California Computer Products Inc. (CalComp)
305 North Muller St.
Anaheim, Cal. 92803
Aerojet-General Corp., Von Karman Ctr.
1100 W. Hollyvale St.
Azusa, Cal. 91702
Concap Computing Systems
Claremont Hotel, Suite 226
Berkeley, Cal. 94611
The Bunker-Ramo Corp.
8433 Fallbrook Ave.
Canoga Park, Cal. 91304
Computer Sciences Corp.
650 N. Sepulveda Blvd.
El Segundo, Cal. 90245
Control Technology, Inc.
3450 E. Spring St.
Long Beach, Cal. 90806
Tymshare Inc.
745 Distel Dr.
Los Altos, Cal. 94022
Computer Usage Development Corp.
8939 Sepulveda Blvd.
Los Angeles, Cal. 91606
Control Data Corp.
8616 La Tijera
Los Angeles, Cal. 90045
Superior Data Processing Service
5429 E. Beverly Blvd.
Los Angeles, Cal. 90022
Milner Bros. Prods.
8000 Blackburn Ave.
Los Angeles, Cal. 90048
Decision Control, Inc./Data Machines, Inc.
1590 Monrovia Ave.
Newport Beach, Cal. 92660
Medical Billing Service, Inc.
3023 Summit St.
Oakland, Cal. 94609

FLORIDA

Inland Computer Service
3664 Market St.
Riverside, Cal. 92501
Aerojet-General Corp.,
Sacramento Plant
Hwy 50 & Nimbus Rd.
P.O. Box 15847
Sacramento, Cal. 95813

Diversified Integration of Data Services
1745 Saratoga Ave.
San Jose, Cal. 95129
URS Corp.
1700 South El Camino Real
San Mateo, Cal. 94402
Bolt Beranek and Newman Inc.,
Data Equipment Div.
2126 So. Lyon St.
Santa Ana, Cal. 92705
Information Development Co.
1621 East 17th St.
Santa Ana, Cal. 92701

COLORADO

Kaman Nuclear
Garden of Gods Rd.
Colorado Springs, Colo. 80907
Delcos, Inc.
360 Western Federal Savings Bldg.
Denver, Colo. 80202

CONNECTICUT

The Bunker-Ramo Corp.,
Business & Industry Div.
445 Fairfield Ave.
Stamford, Conn. 06904

DISTRICT OF COLUMBIA

C-E-I-R, Inc.
5272 River Rd.
Washington, D.C. 20016
Computer Usage Development Corp.
7315 Wisconsin Ave., N.W.
Washington, D.C. 20014
Philip C. Pipher Associates, Inc.
1000 16th St., N.W.
Washington, D.C. 20036
Photo Data, Inc.
601 G St., N.W.
Washington, D.C. 20001

FLORIDA

Data Dynamics, Inc.
P.O. Box 6841
MacDill AFB, Fla. 33608

GEORGIA

Bowles & Tillinghast, Inc.
3400 Peachtree N.E.
Atlanta, Ga. 30326
Computrol Systems, Inc.
361 E. Paces Ferry Rd. N.E.
Atlanta, Ga. 30305

HAWAII

Automation Training Ctr.
(Div. of Honolulu Business College)
1111 Bishop St.
Honolulu, Hawaii 96813
Telecheck Hawaii, Inc.
1481 South King St.
Honolulu, Hawaii 96814

ILLINOIS

Com-Share Inc.
4001 West Devon Ave.
Chicago, Ill. 60646

INDIANA

Automated Services, Inc.
7009 N. River Rd.
Ft. Wayne, Ind. 46805
C A S H, Inc.
300 E. Fall Creek Blvd.,
N. Dr., Suite 401
Indianapolis, Ind. 46205

IOWA

Data Technics Corp.
508 10th St.
Des Moines, Ia. 50309

LOUISIANA

Statistical Service Corp.
714 Grand Ave.
Shreveport, La. 71110

MARYLAND

Computer Usage Development Corp.
22 West Rd.
Towson, Baltimore, Md. 21204
Documentation Inc.
4833 Rugby Ave.
Bethesda, Md. 20014
System Sciences, Inc.
4905 Del Ray Ave.
Bethesda, Md. 20014
Wolf Research and Development Corp.
5801 Annapolis Rd.
Bladensburg, Md. 20710
Ernest E. Blanche & Associates, Inc.
10335 Kensington Pkwy.
Kensington, Md. 20795
WESCO Information Utility, Inc.
White Flint Science Park
Kensington, Md. 20795

MASSACHUSETTS

Keydata Corp.
575 Technology Sq.
Cambridge, Mass. 02139
Warren Associates
433 Putnam Ave.
Cambridge, Mass. 02139
Digital Equipment Corp.
146 Main St.
Maynard, Mass. 01754
Research Calculations, Inc.
200 Boylston St.
Newton, Mass. 02167
Wang Laboratories Inc.
836 North St.
Tewksbury, Mass. 01876

MICHIGAN

Com-Share, Inc.
2200 Fuller Rd., Suite 201B
Ann Arbor, Mich. 48105
Technical Advisors, Inc.
104 West Huron St.
Ann Arbor, Mich. 48108
Detroit IPC
22150 Greenfield Rd.
Oak Park, Mich. 48237

MINNESOTA

Control Data Corp.

Time-Shared Computing Services

8100 34th Ave. South
Minneapolis, Minn. 55440

NEBRASKA

Mid-America Computer & Data
Processing Ctr.
306 W.O.W. Bldg., 14th &
Farnam
Omaha, Nebr. 68102

NEW HAMPSHIRE

Time Share Corp.
Lyme Rd.
Box 301
Hanover, N.H. 03755

NEW JERSEY

Computer Sharing Inc.
363 Wedgewood Dr.
Blackwood, N.J. 08012
Aries Corp.
1144 Clifton Ave.
Clifton, N.J. 07013
ITT Data Services (Div. of
International Telephone and
Telegraph Corp.
Rte. 17 & Garden State Pkwy.
Paramus, N.J. 07652
Applied Data Research, Inc.
Route 206 Center
Princeton, N.J. 08540

NEW YORK

Computer Systems Div.
189 Van Rensselaer St.
Buffalo, N.Y. 14210
Graphic Controls Corp.
189 Van Rensselaer St.
Buffalo, N.Y. 14210
Mauchly Honig Time Sharing
Associates, Inc.
116 North Central Ave.
Hartsdale, N.Y. 10530
Computer Tabulating Corp.
136 Main
Hempstead, N.Y. 11550
Dr. Frank R. Berman
Eagle Hill Court
Huntington, N.Y. 11743
Datamation Services Inc.
381 Sunrise Hwy.
Lynbrook, N.Y. 11563
Aero Performance, Inc.
57 Hillside Ave.
Manhasset, N.Y. 11030
Allied Data Processing, Inc.
41 East 42nd St.
New York, N.Y. 10017
Automated Concepts Inc.
60 East 42nd St.
New York, N.Y. 10017
Comput-A-Credit, Inc.
Pan Am Bldg.
200 Park Ave.
New York, N.Y. 10017
Computer Applications Inc.
555 Madison Ave.
New York, N.Y. 10022
Data Network Corp.
460 Twelfth Ave.
New York, N.Y. 10018
EDCO Data Processing Corp.
226 West 37th St.
New York, N.Y. 10018
General Procedures Corp.
150 East 52nd St.
New York, N.Y. 10022
Infret Corp.

80 Wall St.
New York, N.Y. 10005
Matrix Corp., Computer Ser-
vices Div.
380 Madison Ave.
New York, N.Y. 10017
M.I.D.S., Inc.
545 Eighth Ave.
New York, N.Y. 10018
Programming Methods Inc.
51 Madison Ave.
New York, N.Y. 10006
Programming & Systems, Inc.
33 West 42 St.
New York, N.Y. 10036
Randolph Computer Corp.
200 Park Ave.
New York, N.Y. 10017
Scantlin Electronics, Inc.
60 Broad St.
New York, N.Y. 10004
Time Brokers, Inc.
485 Fifth Ave.
New York, N.Y. 10017
Kurt Enslein
42 East Ave.
Rochester, N.Y. 14604
Gene Maior & Assoc. Inc.
138 Nepperham Ave.
Yonkers, N.Y. 10701

NORTH CAROLINA

Arista Data Processing Ctr.
438 Goldfloss St.
Winston-Salem, N.C. 27107

OHIO

Computer Programming Con-
cepts, Inc.
Atkinson Sq. - Suite 802
Cincinnati, O. 45246
Champion Service Corp.
19001 Villaview Rd.
Cleveland, O. 44119
Management Information Ser-
vices, Inc.
42 E. Gay St.
Columbus, O. 43215
Data Services Corp.
2835 Springboro Rd.
Dayton, O. 45401
The National Cash Register
Co.
South Main & K Sts.
Dayton, O. 45409
Caltec, Inc.
3023 Sylvania Ave.
Toledo, O. 43613

OKLAHOMA

Statistical Computing Ctr.,
Inc.
2501 North Stiles
Oklahoma City, Okla. 73105
Southwestern Computing Ser-
vice, Inc.
1631 South Boston Ave.
Tulsa, Okla. 74119

PENNSYLVANIA

UNIVAC Data Processing Ctrs.
Main Office at P.O. Box
8100
Philadelphia, Pa. 19101
Computab Inc.
4202 Murray Ave.
Pittsburgh, Pa. 15217
Data Processing Service

908 Penn Ave.
Pittsburgh, Pa. 15222
Mechanized Business Inc.
(MBI)
Koppers Bldg.
Pittsburgh, Pa. 15219
Philco-Ford Corp.
3900 Welsh Rd.
Willow Grove, Pa. 19008

RHODE ISLAND

The Computer Center of
Southern New England
Rm. 520, Industrial Bank
Bldg.
111 Westminster St.
Providence, R.I. 02903

TEXAS

Neat Data Processing Services
212 North St. Paul
Dallas, Tex. 75201
University Computing Co.
1300 Frito-Lay Tower
Dallas, Tex. 75235
Control Data Corp., Houston
Data Ctr.
7135 Office City Dr.
Houston, Tex. 77017

Mactex (Div. of McDonnell Co.)
Suite 400/500 Jefferson
Bldg.
Houston, Tex. 77002

VIRGINIA

Systematic Services, Inc.
631 South Pickett St.
Alexandria, Va. 22304

WASHINGTON

Northwest Management Ser-
vices, Inc.
1107 Pike St.
Seattle, Wash. 98101
The Arcé Corp.
N 4407 Division
Spokane, Wash. 99207

ENGLAND

System Computers Ltd.
Fossway, Newcastle-on-Tyne.
6
Northumberland, England

TSC

TIME SHARE CORPORATION
Lyme Road
Hanover, New Hampshire 03755

... solving system analysis and pro-
gramming problems with emphasis on
multi-programming and time sharing
applications.

Designate No. 5 on Reader Service Card

ROSTER OF ORGANIZATIONS SUPPLYING COURSES, TRAINING, OR INSTRUCTION IN COMPUTING, PROGRAMMING, OR SYSTEMS

For specific information about the organizations listed in this roster, please see their entries in the "Roster of Organizations" beginning on page 8.

ARIZONA

American Institute of Technology
3620 North Central Ave.
Phoenix, Ariz. 85012
General Electric Co., Information Systems Marketing Operation (ISMO)
13430 N. Black Canyon Hwy.
Phoenix, Ariz. 85029
General Electric Co. Process Computer Business Section
2255 W. Desert Cove Rd.
Phoenix, Ariz. 85029

CALIFORNIA

Automation Institute of America
1780 West Lincoln Ave.
Anaheim, Cal. 92801
Autonetics
3370 Miraloma Ave.
Anaheim, Cal. 92803
Comcor, Inc.
1335 S. Claudina St.
Anaheim, Cal. 92803
Pacific Data Processing Co.
9601 Wilshire Blvd.
Beverly Hills, Cal. 90210
Profimatics, Inc.
7060 Owensmouth Ave.
Canoga Park, Cal. 91303
Serendipity Associates
9760 Cozycroft Ave.
Chatsworth, Cal. 91311
Systron-Donner Corp.
888 Galindo St.
Concord, Cal. 94520
Millard D. Shriver Co. Inc.
9231 E. Whitmore St.
El Monte, Cal. 91771
The Matrix Corp., Computer Services Div.
635 Hawaii St.
El Segundo, Cal. 90245
Wyle Laboratories
128 Maryland St.
El Segundo, Cal. 90245
National Cash Register
921 N St.
Fresno, Cal. 93721
General Precision, Inc., Librascope Group
808 Western Ave.
Glendale, Cal. 91201
M.T.I. Business Schools
5512 Hollywood Blvd.
Hollywood, Cal. 90028
Automation Institute of America
Kevco, 200 Pine Ave.

Long Beach, Cal. 90802
Control Technology, Inc.
3450 E. Spring St.
Long Beach, Cal. 90806
Tymshare Inc.
745 Distel Dr.
Los Altos, Cal. 94022
Alpha Omega Computer Systems
6505 Wilshire Blvd.
Los Angeles, Cal. 90048
Automation Institute of America
451 South Hill St.
Los Angeles, Cal. 90013
Business Machines Institute
816 W. Olympic Blvd.
Los Angeles, Cal. 90015
Computer Usage Development Corp.
8939 Sepulveda Blvd.
Los Angeles, Cal. 91606
Control Data Corp.
8616 La Tijera
Los Angeles, Cal. 90045
International Tabulating Institute
101 South Vermont
Los Angeles, Cal. 90004
E. H. Kramer & Co.
6505 Wilshire Blvd.
Los Angeles, Cal. 90048
Milner Bros. Prods.
8000 Blackburn Ave.
Los Angeles, Cal. 90048
Superior Data Processing Service
5429 E. Beverly Blvd.
Los Angeles, Cal. 90022
West Eleven Inc. (Distributor for Hitachi)
11836 Vicente Blvd.
Los Angeles, Cal. 90049
Decision Control, Inc./Data Machines, Inc.
1590 Monrovia Ave.
Newport Beach, Cal. 92660
Automation Institute of America
508 16th St.
Oakland, Cal. 94600
Dymec
395 Page Mill Rd.
Palo Alto, Cal. 94306
Automation Institute of America
110 West "C" St.
San Diego, Cal. 92101
Applied Data Systems, Inc.
203 California
San Francisco, Cal. 94111
Automation Institute of America

760 Market St.
San Francisco, Cal. 94102
Automation Institute of America (Div. of C-E-I-R, Inc.)
1760 Market St.
San Francisco, Cal. 94102
Clary Datacomp Systems
404 Junipero Sierra
(P.O. Box 1)
San Gabriel, Cal. 91776
Diversified Integration of Data Services
1745 Saratoga Ave.
San Jose, Cal. 95129
M.T.I. Business Schools
80 E. San Carlos St.
San Jose, Cal. 95112
Friden, Inc., A Division of The Singer Co.
2350 Washington Ave.
San Leandro, Cal. 94577
URS Corp.
1700 South El Camino Real
San Mateo, Cal. 94402
Scientific Data Systems, Inc.
1649 Seventeenth St.
Santa Monica, Cal. 90404
System Development Corp.
2500 Colorado Ave.
Santa Monica, Cal. 90406
Automation Institute of America
14003 Ventura Blvd.
Sherman Oaks, Cal. 91403
Informatics Inc.
5430 Van Nuys Blvd.
Sherman Oaks, Cal. 91401

COLORADO

Kaman Nuclear
Garden of Gods Rd.
Colorado Springs, Colo.
80907
Automation Institute of America
1450 Logan St.
Denver, Colo. 80203
Auto-Tronix, Universal
444 Sherman
Denver, Colo. 80203

CONNECTICUT

Connecticut Technical Corp.
3000 Main St.
Hartford, Conn. 06120
Data Institute, Inc.
248 Farmington Ave.

Hartford, Conn. 06105

WASHINGTON, D. C.

Brandon Systems Institute
1130 17th St., N.W.
Washington, D.C. 20036
C-E-I-R, Inc.
5272 River Rd.
Washington, D.C. 20016
Computer Command and Control Co.
1750 Pennsylvania Ave. N.W.
Washington, D.C. 20006
Computer Usage Development Corp.
7315 Wisconsin Ave., N.W.
Washington, D.C. 20014
Comress, Inc.
2120 Bladensburg Rd. N.E.
Washington, D.C. 20018
Herner & Co.
2431 K St., N.W.
Washington, D.C. 20037
Institute of Computer Technology, Inc.
2600 Virginia Ave., N.W.
Washington, D.C. 20037
Trident Laboratories Inc.
2430 Penn. Ave. N.W.
Washington, D.C. 20036

FLORIDA

Fort Lauderdale Technical College
201 West Sunrise Blvd.
Ft. Lauderdale, Fla. 33311
Systems Engineering Laboratories, Inc.
P.O. Box 9148
Ft. Lauderdale, Fla. 33310
Data Processing, Inc.
1225 American Heritage Life Bldg.
Jacksonville, Fla. 32202
Soroban Engineering, Inc.
P.O. Box 1690
Melbourne, Fla. 32901
Charron-Williams Commercial College
2 N.W. 2nd St.
Miami, Fla. 33128
M.T.I. Business Schools
7790 N.W. 7th Ave.
Miami, Fla. 33150
Miami Institute of Technology
561 N.E. 79 St., Suite 238
Miami, Fla. 33138
Florida Technical College of

Courses, Training, or Instruction

Orlando
115 W. Central Ave.
Orlando, Fla. 32801
Lincoln Business College
814 W. Church St.
Orlando, Fla. 32805

HAWAII

Automation Training Ctr. (Div.
of Honolulu Business College)
1111 Bishop St.
Honolulu, Hawaii 96813

ILLINOIS

Automation Institute of America
37 South Wabash Ave.
Chicago, Ill. 60603
Com-Share Inc.
4001 West Devon Ave.
Chicago, Ill. 60646
Electronic Computer Programming
Institute of Chicago
220 S. State St.
Chicago, Ill. 60604
International Data Processing
Institute
1024 S. Wabash Ave.
Chicago, Ill. 60605
William M. Kordsiemon and Assoc.
100 West Monroe St.
Chicago, Ill. 60603
Quality Programming Inc.
114 S. Canal St.
Chicago, Ill. 60606
Standards, Inc.
6434 No. Central Ave.
Chicago, Ill. 60646
DPS, Inc.
1800 Longview Rd.
Waukegan, Ill. 60085

INDIANA

Bramwell Business College
11 N.W. Third
Evansville, Ind. 47708

IOWA

Data Technics Corp.
508 10th St.
Des Moines, Iowa 50309

MARYLAND

Automation Institute of America
222 St. Paul Place
Baltimore, Md. 21202
Computer Usage Development Corp.
22 West Rd.
Towson, Baltimore, Md. 21204
Wolf Research and Development
Corp.
5801 Annapolis Rd.
Bladensburg, Md. 20710
Delta Data Systems, Inc.
9903 Rhode Island Ave.
College Park, Md. 20741
B-R Data Systems, Inc.
2121 Industrial Pkwy.
Silver Spring, Md. 20904
Orchard-Hays & Co., Inc.
8555 Sixteenth St.
Silver Spring, Md. 20910
Automation Institute of America
11141 Georgia Ave.
Wheaton, Md. 20902

MASSACHUSETTS

Data Operations Inc.
24 Mill St.
Arlington, Mass. 02174
Adams Associates
128 The Great Rd.
Bedford, Mass. 01730
Automation Institute of
America
39 Boylston St.
Boston, Mass. 02116
Automation Training Schools,
Inc.
52 Chauncy St.
Boston, Mass. 02111
Computer Consultants, Inc.
1340 Commonwealth Ave.
Boston, Mass. 02134
Information Management, Inc.
165 Bedford St.
Burlington, Mass. 01803
Technical Operations, Inc.
South Ave.
Burlington, Mass. 01803
Warren Associates
433 Putnam Ave.
Cambridge, Mass. 02139
Honeywell Inc., Computer Con-
trol Div.
Old Connecticut Path
Framingham, Mass. 01701
Design Automation, Inc.
809 Massachusetts Ave.
Lexington, Mass. 02173
Digital Equipment Corp.
146 Main St.
Maynard, Mass. 01754
GPS Instrument Co., Inc.
188 Needham St.
Newton, Mass. 02164
Keyed Systems & Service, Inc.
55 Spring St.
Pittsfield, Mass. 01201
Information Dynamics Corp.
80 Main St.
Reading, Mass.
Wang Laboratories Inc.
836 North St.
Tewksbury, Mass. 01876

MICHIGAN

Applied Dynamics, Inc.
2275 Platt Rd.
P.O. Box 1488
Ann Arbor, Mich. 48106
Com-Share, Inc.
2200 Fuller Rd., Suite 201B
Ann Arbor, Mich. 48105
Automation Institute of
America
150 Michigan Ave.
Detroit, Mich. 48226
Electronic Computer Program-
ming Institute of Detroit
16411 W. Eight Mile Rd.
Detroit, Mich. 48235
Detroit IPC
22150 Greenfield Rd.
Oak Park, Mich. 48237

MINNEAPOLIS

Automation Institute of
America
24 South Seventh St.
Minneapolis, Minn. 55402
Control Data Corp.
8100 34th Ave. South
Minneapolis, Minn. 55440
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Kansas City College of
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Raleigh, N.C. 27601

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Cincinnati, O. 45246

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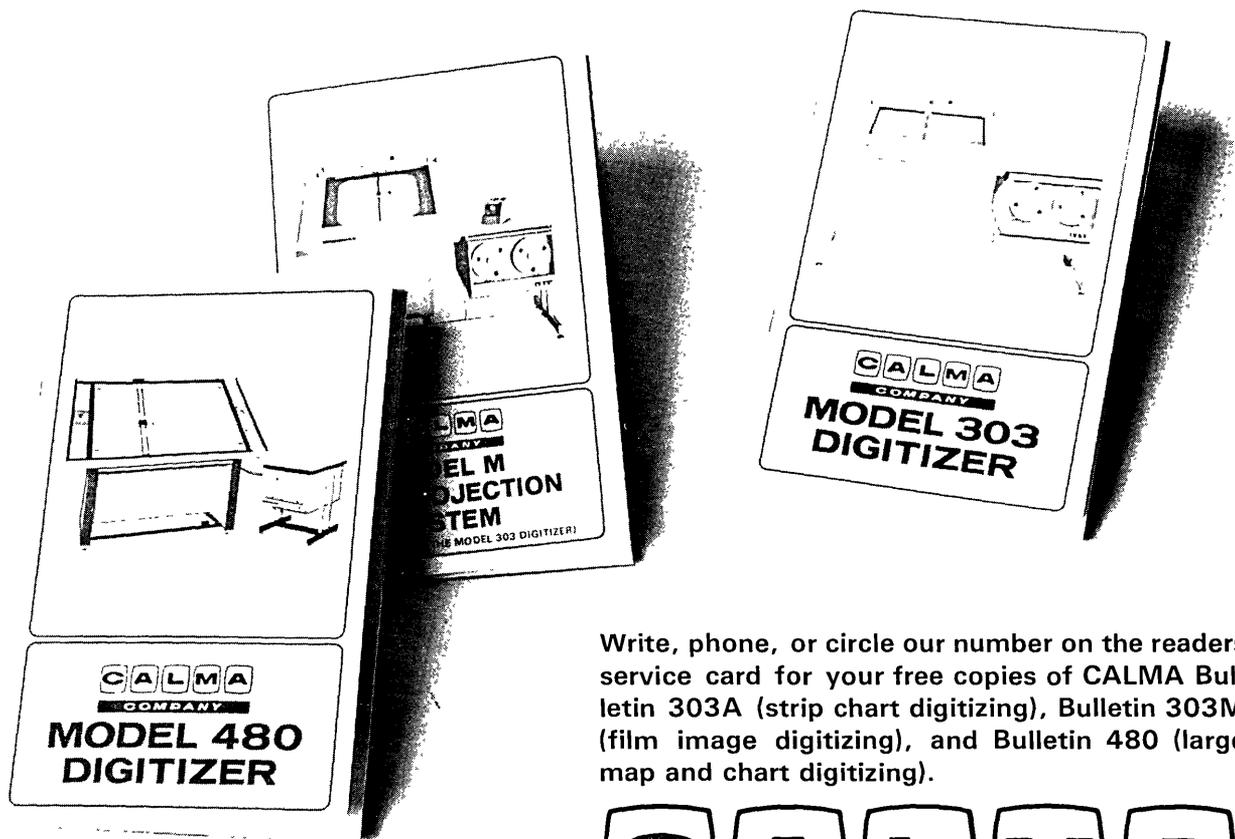
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SEVENTY KEY IDEAS IN COMPUTING AND DATA PROCESSING

The following is a selection of special terms in the field of computing and data processing that are essential, or almost essential, for understanding the subject. They might reasonably be called "seventy key ideas" in this field. Of course, the understanding of more ideas besides is necessary and desirable.

I. General Concepts

computer -- 1. A machine which is able to calculate or compute, that is, which will perform sequences of reasonable operations with information, mainly arithmetical and logical operations. 2. More generally, any device which can accept information, apply definite reasonable processes to the information, and supply the results of these processes. 3. A human being who can perform these operations and processes.

analog computer -- A computer which calculates by using physical analogs of the variables. -- Note: Usually a one-to-one correspondence exists between (1) each numerical variable occurring in the problem and its solution and (2) a varying physical measurement such as electrical voltage or rotation of a shaft in the analog computer. In other words, an analog computer is a physical system in which the analysis or solution of the problem is mirrored by the varying behavior of the physical system.

digital computer -- A computer in which information is represented in discrete form and which calculates using numbers expressed in digits and zeroes and ones expressed usually in 1's and 0's, to represent all the variables that occur in a problem.

data processor -- A machine for handling information in a sequence of reasonable operations.

cybernetics -- 1. The comparative study of the control and the internal communication of information-handling machines and the central nervous systems of animals and men, in order to understand better the functioning of brains and communication. 2. The study of the art of the pilot or steersman.

feedback -- The returning of a fraction of the output of a machine, system, or process to the input, to which the fraction is added or subtracted. If increase of input is associated with increase of output, subtracting the returned fraction (negative feedback) results in self-correction or control of the process, while adding it (positive feedback) results in a runaway or out-of-control process.

negative feedback -- The returning of a fraction of the output of a machine, system, or process to the input from which the fraction is subtracted; if an increase of input is associated with an increase of output, but the increase of output produces a decrease of input, this results in self-correction or control of the machine, system, or process. For example, if an increase of caterpillars is associated with an increase of parasites destroying them, then the caterpillar-parasite populations display negative feedback.

positive feedback -- The returning of a fraction of the output of a machine,

system, or process to the input, to which the fraction is added; if an increase of input is associated with an increase of output, and the increase of output produces a still further increase of input, this results in a runaway or out-of-control process. For example, if an increase of rabbits results in a still further increase of rabbits, the population of rabbits displays a runaway or out-of-control process.

automatic data processing (ADP) -- The processing of information by: (1) obtaining input information in machine language as close to the point of origin as economically possible; (2) operating on the information by automatic computer and other machines, without human intervention, as far as economically justified; and (3) producing just the output information needed. For example, a department store would have attained automatic data processing if: (1) at the time of each sale the details were entered mechanically into the system by a salesperson's plate, a customer's plate, and a merchandise punched ticket; and (2) reports to management, bills to customers, reorders for low inventory, commissions to salesclerks, and other desired output reports were all computed and produced by the system without human intervention.

electronic data processing (EDP) -- Computing and data processing using electronic devices, and therefore very high speeds, now approaching a ten million operations a second.

integrated data processing (IDP) -- 1. Data processing organized, coordinated, and carried out in a completely planned and systematic way, without bottlenecks and with the least possible duplication of tasks such as entering data. 2. A group of data processing procedures built around a common machine language and common representation of data, in which there is a minimum of duplicate operations, such as entering the same data more than once.

time-sharing -- Equipment. Using a device for two or more functions during the same overall time interval, by allocating (in rotation, for example) small divisions of the total time interval to the performance of each function. For example, the operating system of a powerful, fast, central computer may offer a thirtieth of a second of computing time in rotation to each of 20 human users at 20 consoles, and so to all the users it appears that each has entire command of the computer, although actually it is shared in time.

real-time -- In solving a problem, a speed of computing and processing data which is fast enough to give answers that can be used to control or guide the situation or operation or physical process presenting the problem. For example, in the case of a human being driving a motor car:

at 30 miles an hour he can regularly solve nearly all of his driving problems in real-time; and at 100 miles an hour he will regularly fail to solve some of his driving problems in real-time.

on-line -- Units of Equipment. Connected to and controlled by another unit of equipment. If one unit of equipment is controlled by another without human intervention, the first unit is said to be on-line to the second. If a human operator is needed as a link in the control, the first unit is said to be off-line to the second. For example, if a high-speed line printer is connected by a cable to a computer, and from time to time prints under the control of the computer, then the printer is operating on-line. If the computer produces in 5 minutes of operation a day's work load for the printer, on a reel of magnetic tape, and then the reel of magnetic tape is loaded by a human operator on the printer and the printer is then set going, the printer is operating off-line.

benchmark problem -- A specified standard or typical problem used to test two or more computers relative to each other, and to evaluate their relative performance.

total integrated management information system -- A system of integrated data processing that contains and furnishes (as needed) all the information about an organization that its management needs for running the organization efficiently.

II. Digital Computers

input -- Computers. 1. Information transferred from outside the computer, including secondary or external storage, into the internal storage of the computer. 2. The sections of the computer which accept information from outside the computer, for example, magnetic-tape readers or punch-card readers.

output -- Computers. 1. Information transferred from the internal storage of a computer to secondary or external storage, or to any device outside of the computer. 2. The device or devices which bring information out of the computer.

memory -- Computers. 1. The units which store information in the form of the arrangement of hardware or equipment in one way or another. Same as "storage". 2. Any device into which information can be introduced and then extracted at a later time.

arithmetic unit -- Digital Computers. The section of the hardware of a computer where arithmetical and logical operations are performed on information.

control unit -- Digital Computers. That portion of the hardware of an automatic digital computer which directs

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the sequence of operations, interprets the coded instructions, and initiates the proper signals to the computer circuits to execute the instructions.

input-output channels (IOC) -- Computers.

Input and output devices considered together.

central processing unit (CPU) -- Computers. The unit, usually assembled in one frame, containing the arithmetic unit, the control unit, and the fast storage or rapid memory, consisting often of magnetic cores.

address -- Digital Computers. A label, name, number, or symbol identifying a register, a location, or a device where information is stored.

access time -- Digital Computers. 1.

The time interval between the instant at which the arithmetic unit requires information from the storage or memory unit and the instant at which the information is delivered from storage to the arithmetic unit. 2. The time interval between the instant at which the arithmetic unit starts to send information to the memory unit and the instant at which the storage of the information in the memory unit is completed. -- In analog computers, the value at time t of each dependent variable represented in the problem is usually immediately accessible when the value of the independent variable is at time t , and otherwise not accessible.

random access -- Computers. Access to the memory or storage under conditions where the next register from which information is to be obtained is chosen at random, in other words, does not depend on the location of the previous register. For example, access to names in the telephone book is "random access". The next name that anyone is going to look up in the book may be almost anywhere in the book with roughly equal probability.

pulse -- Circuits. In general, a sharp difference, usually over a relatively short period of time, between the normal level of some physical variable corresponding to the average level of a wave or waves and a high or low level of that physical variable corresponding to the crest or trough of the wave; often, a sharp voltage change. For example, if the voltage at a terminal changes from -10 to +20 volts and remains there for a period of 2 microseconds, one says that the terminal received a 30 volt 2 microsecond pulse. A positive pulse is characterized by a rise or increase from one value of the variable to a greater value, a finite duration of the greater value, and a decay or decrease from the greater value back to the original value. A negative pulse is the same except that the change is to a smaller value.

channel -- 1. Digital Computers. A path along which information, particularly a series of digits or characters or units of information, may flow or be stored. For example, in the machine known as a punch-card reproducer, information (in the form of punch cards) may flow in either one of two card channels which do not physically connect. 2. Magnetic Tape or Magnetic Drums. A path parallel to the edge of the tape or drum along which information may be stored by means of the presence or absence of polarized spots, singly or in sets.

(3) Delay-Line Memory such as a Quartz Rod. A circular path forward through the delay-line memory and back through electrical circuits along which a pattern of pulses representing information may be stored.

clock -- Digital Computers. In a synchronous computer, the master circuit which provides pulses at equal times which schedule the operations of the computer. -- In an asynchronous computer, there is no need for such a clock, since the closing or completion of one circuit initiates the operation of a subsequent circuit.

transducer -- A device which converts energy from one form to another. For example, a slab of quartz crystal embedded in mercury can change electrical energy to sound energy (and vice versa), as is done in sonic delay lines in certain computer memory systems. "Any device which enables the conversion of any physical, chemical, or biological phenomenon into an electrical, hydraulic, pneumatic, mechanical, optical or other signal for transmission, recording, measurement, analysis, actuation, output or control. Transducers have been referred to as pick-ups, sensing elements, primary elements, command devices, sensors, detectors, and probes. As examples, transducers exist which convert pressure, temperature, acceleration, force, mass, time, distance, radiation and a multiplicity of other phenomena into electrical form. These signals are then readily fed to amplifiers, data processing systems, or output controllers. Many instrumentation problems may be resolved into the choice of input and output transducers with an interconnecting information-processing link. Transducers extend, refine, supplement, or replace man's senses in remote and hazardous locations where man unshielded cannot exist or survive, such as nuclear reactors and outer space." (From the Instrument Society of America.)

card -- Computers. 1. A card of constant size and shape, adapted for being punched in a pattern which has meaning. The punched holes are sensed electrically by wire brushes, mechanically by metal fingers, or photoelectrically. Also called "punch card." One of the standard punch cards (made by International Business Machines Corporation) is 7 3/8 inches long by 3 1/4 inches wide, by 0.007 inches thick, and contains 80 columns in each of which any of 12 positions may be punched. Another of the standard punch cards (made by Remington Rand Division of Sperry Rand) is of the same size, but contains 90 columns in each of which any one or more of 6 positions may be punched. 2. A thin board of plastic or similar material for mounting small circuit parts connected by printed circuits; a printed-circuit board.

magnetic tape -- Tape made of paper, metal, or plastic, coated or impregnated with magnetic material, on which polarized spots representing information may be stored.

magnetic ink character recognition (MICR) -- The technique of using black (or colored) ink containing magnetized particles, printed (on checks, bills, etc) as humanly readable characters, which are also recognized by electronic devices that sense the magnetization and translate these characters

into machine language.

optical character recognition (OCR) --

The technique of using electronic devices and light in order to detect, recognize, and translate into machine language, characters which have been printed or written on paper, etc., in a form readable by human beings.

III. Programming

information -- 1. A set of marks or an arrangement of hardware that has meaning or that designates one out of a finite number of alternatives. 2. Any facts or data. 3. Any marks, characters, or signals which are put in, processed by, or put out by a computer.

language -- 1. A set or system of symbols used in a more or less uniform way by a number of people so that they may communicate with and understand one another. 2. Electronic Computers. A system consisting of a carefully defined set of characters, rules for combining them into larger units (words or expressions), and specifically assigned meanings, used for representing and communicating information or data among a group of people, machines, etc.

machine word -- Digital Computers. A unit of information of a standard number of characters, which a machine regularly handles in each transfer. For example, a machine may regularly handle numbers or instructions in units of 36 binary digits: This is then the "machine word".

instruction -- Computers. A machine word or a set of characters in machine language which specifies that the computer take a certain action. More precisely, a set of characters which defines an operation together with one or more addresses (or no address) and which, as a unit, causes the computer to operate accordingly on the indicated quantities. Note: The term "instruction" is preferred by many to the terms "command" and "order"; "command" may be reserved for electronic signals; "order" may be reserved for uses in the meaning "sequence", as in "the order of the characters".

code (noun) -- Computers. A system of symbols for representing information in a computer and the rules for associating them.

American Standard Code for Information

Interchange (ASCII) -- A thoroughly coordinated system for representing and communicating characters, digits, and other signs and meanings in terms of ones and zeroes, or the presence or absence of signals, in sets of five to eight at a time. For example, according to the standard, the character B is represented as 00 010 or as 1 000 010 or as 11 00 010; and the signal "rub out" is represented as 11 111, or as 111 111, or as 1 111 111, or as 11 111 111.

program (noun) -- Computers. 1. A precise sequence of coded instructions for a digital computer to solve a problem. 2. A plan for the solution of a problem. A complete program includes plans for the transcription of data, coding for the computer, and plans for the effective use of the results.

transfer instruction -- Digital-Computer Programming. An instruction or signal which conditionally or unconditionally

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specifies the location of the next instruction and directs the computer to that instruction. Also called a jump instruction.

pseudo-code -- Digital-Computer Programming. An arbitrary code, independent of the hardware of a computer, which has the same general form as actual computer code, which directs the computer to string together actual computer codes, and which is automatically translated into actual computer code to control the computer.

automatic programming -- Digital-Computer Programming. Any method or technique whereby the computer itself is used to transform or translate programming from a language or form that is easy for a human being to produce into a form that is efficient for the computer to carry out. Examples of automatic programming are compiling routines, interpretive routines, etc.

compiler -- Digital-Computer Programming. A program-making routine, which produces a specific program for a particular problem by the following process: (1) determining the instructions intended in an item of information expressed in pseudo-code; (2) selecting or generating (i.e., calculating from parameters and skeleton instructions) the required subroutine; (3) transforming the subroutine into specific coding for the specific problem, assigning specific memory registers, etc., and entering the specific coding as an element of the problem program; (4) maintaining a record of the subroutines used and their position in the problem program; and (5) continuing to the next element of information in pseudo-code.

plugboard -- 1. A removable board holding many hundreds of electric terminals, into which short connecting wire cords may be plugged in patterns varying for different programs for the machine. To change the program, one wired-up plugboard is removed and another wired-up plugboard is inserted. A plugboard is equivalent to a program tape that presents all instructions to the computer at one time. It relies on certain signals in the punch cards passing through the machine to cause different selections of instructions in different cases. 2. A similar board which may be used to guide or edit the handling of information in a computer or its output.

programming language -- A language for expressing unambiguously the sequences of instructions (or programs) that a computer should perform. There are two main kinds: problem-oriented languages; and machine-oriented languages, often called machine languages.

machine language -- Computers. 1. Information in the physical form which a computer can handle. For example, punched paper tape is machine language, while printed characters on paper are not usually machine language, although for optical character reading they would be. 2. Numbers or instructions expressed in a form that a computer can process at once without conversion, translation, or programmed interpretation. Note that a punched card containing an instruction in punched holes that requires programmed interpretation is "in machine language" by the first meaning and is "not in machine language" by the second meaning.

machine-oriented language -- (Also called:

machine-oriented programming language, machine language) -- Computer Programming. 1. A language for programming a computer to solve problems, which is designed for use on the computer without change or translation into another form. For example, in a computer where the registers contain 18 binary digits, the following code:

010 000 000 101 000 011
(written in binary notation) if set up on switches on the console of the machine, may cause the machine to "load the accumulator with the data in register 000 101 000 011". 2. A language which with very simple or direct translation will program a computer to solve problems. For example, the following code:

20 0503
(written in octal notation) may cause the machine to "load the accumulator with the information in register 503".

3. A language making use of alphabetic symbols, which with very simple or direct translation will program the computer. For example, the code: LAC 0503

(written in symbolic and octal notation) may cause the machine to "load the accumulator with the data in register 503". 4. A language closely related to the foregoing, and which the assembly language system of the computer will accept, translate, and assemble into an operating program. For example, the codes:

START, LAC M M=503
(written in what is called "assembly language") are acceptable statements in this kind of machine language. Here "START", names an instruction; "LAC M" means "load the accumulator with the contents of M"; and M is defined (by the equals sign) as register 503 (octal name).

problem-oriented language -- A language for programming computers which is designed for unambiguously specifying a sequence of instructions for solving a problem and which is acceptable to two or more kinds of general purpose computers with almost no regard in their differences in hardware. Some well-known problem-oriented languages are FORTRAN, COBOL, and ALGOL. A computer program written in FORTRAN can be run in almost exactly the same form on at least 20 different kinds of computers; but this is not true of a program written in machine language.

supervisory program -- A computer program at the top level which schedules, loads, runs, relocates, and in general controls the operation of other programs, with due regard to priorities and the availability of the central processor and other units. Also called: the supervisor, the monitor, the monitor program, the executive, the executive program, the operating system, etc.

software -- The entire collection of computer programs used to make a computer do useful work, including ordinary problem-solving programs and general programs such as operating systems, compilers, assemblers, editors, debuggers, supervisors, translators, etc. Software is contrasted with "hardware" -- the machinery and the electronics of the computer.

IV. Operation

check digit(s) -- One or more digits carried along with a machine word (i.e., a unit item of information handled by the machine), which report information about the other digits in the word in such a fashion that if a single error occurs (excluding two compensating errors), the check will fail and give rise to an error alarm signal. For example, the check digit may be 0 if the sum of other digits in the word is odd, and the check digit may be 1 if the sum of other digits in the word is even. It is possible to choose check digits for rows and columns in a block of characters recorded on magnetic tape, for example, in such a way that any single error of a 1 for a 0 or a 0 for a 1, can be located automatically by row and column, and eliminated automatically by the computer.

automatic checking -- Computers. Provision, constructed in hardware, for automatically verifying the information transmitted, manipulated, or stored by any device or unit of the computer. Automatic checking is "complete" when every process in the machine is automatically checked; otherwise it is partial. The term "extent of automatic checking" means (1) the relative proportion of machine processes which are checked, or (2) the relative proportion of machine hardware devoted to checking.

computing efficiency -- Computer Operation. The ratio obtained by dividing (1) the total number of hours of correct machine operation (including time when the program is incorrect through human mistakes) by (2) the total number of hours of scheduled computer operation including time when the machine is undergoing preventive maintenance.

multiprogramming -- A technique for handling in a computer many routines or programs at what seems to be the same time. This is accomplished by overlapping or interleaving their execution, and by permitting more than one program to share the time of machine components and units.

documentation -- 1. The group of techniques needed for good recording, organizing, and presenting of a body of specialized knowledge so as to communicate it completely and accurately. In some cases, documentation is necessary primarily to give a complete and accurate historical record of changes in designs, or plans, or construction, etc. 2. Also, the result of documentation, consisting of a complete and accurate description of a system, structure, etc., for example, an extensive computer program. Good documentation of a computer program means that any trained person can understand the purpose of all parts of the program easily and can modify it intelligently and easily.

V. Representation of Information

digit -- 1. One of the symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, used in numbering in the scale of ten. 2. One of these symbols and sometimes also letters expressing integral values ranging from 0 to $n-1$ inclusive, used in a scale of numbering to the base n .

Key Ideas

character -- Digital Computers. 1. A decimal digit 0 to 9, or a letter A to Z, either capital or lower case, or a punctuation symbol, or any other single symbol (such as appear on the keys of a typewriter) which a machine may take in, store, or put out. 2. One of a set of basic or elementary unit symbols which, singly or in sequences of two or more, may express information and which a computer may accept. 3. A representation of such a symbol in a pattern of ones and zeros representing a pattern of positive and negative pulses or states.

notation (in the sense "scale of notation" or "positional notation" for numbers) -- Arithmetic. A systematic method for stating quantities in which any number is represented by a sum of coefficients times multiples of the successive powers of a chosen base number n (sometimes more than one). If a quantity is written in the scale of notation n , then the successive positions of the digits report the powers of n . Thus 379 in the scale of 10 or decimal notation means 3 hundreds, 7 tens, and 9. The number 379 in the scale of 16 (used in some computers) means 3 times sixteen squared, plus 7 times sixteen, plus 9 (which in decimal notation would be 889). 1101 in the scale of two means 1 eight, 1 four, 0 twos and 1 one (which in decimal notation would be 13). In writing numbers, the base may be indicated by a subscript (expressed always in decimal notation) when there may be doubt about what base is employed. For example, 11.101_2 means two, plus one, plus one half, plus one-eighth, but 11.101_3 means three plus one, plus one-third, plus one twenty-seventh. Names of scales of notations which have had some significant consideration are:

Base	Name
2	binary
3	ternary
4	quaternary, tetral
5	quinary
8	octal
10	decimal
12	duodecimal
16	hexadecimal, sexidecimal
32	duotricenary
2,5	biquinary

The digits used for "ten" and "eleven" are ordinarily "t" and "e"; beyond eleven, uniformity of nomenclature has apparently not yet developed.

binary notation -- The writing of numbers in the scale of two. Positional notation for numbers using the base 2. The first dozen numbers zero to eleven are written in binary notation as 0, 1, 10, 11, 100, 101, 110, 111, 1000, 1001, 1010, 1011. The positions of the digits designate powers of two; thus 1010 means 1 times two cubed or eight, 0 times two squared or four, 1 times two to the first power or two, and 0 times two to the zero power or one; this is equal to one eight plus no fours plus one two plus no ones, which is ten.

binary digit -- A digit in the binary scale of notation. This digit may be only 0 (zero) or 1 (one). It is equivalent to an "on" condition or an "off" condition, a "yes", or a "no", etc.

bit -- A binary digit; a smallest unit of information; a "yes" or a "no"; a

single pulse in a group of pulses; a single magnetically polarized spot in a group of such spots; etc. This word is derived from the "b" in "binary" and the "it" in "digit"; the word replaces the obsolete invented word "bigit", and takes on added meaning from the word "bit" meaning "small piece".

octal notation -- Notation of numbers in the scale of eight. For example, the number 217 in this scale means 2 times 8 squared (2 times 64, which equals 128) plus 1 times 8, plus 7, which is equal to 143 in decimal notation. The number 217 in octal notation is equal to 010 001 111 in binary notation, each octal digit being changed directly into its binary equivalent. The octal notation is remarkably convenient for dealing with binary computers, because octal numbers are much easier for human beings to handle than binary numbers, and yet the conversion into binary notation is immediate, since each octal digit always converts into the same three binary digits.

coded decimal (adjective) -- A form of notation by which each decimal digit separately is converted into a pattern of binary ones and zeros. For example, in the "8-4-2-1" coded decimal notation, the number twelve is represented as 0001 0010 (for 1, 2) whereas in pure binary notation it is represented as 1100. Other coded decimal notations are known as: "5-4-2-1", "excess three", "2-4-2-1", etc. Following are the codes for the decimal digits 0 to 9 in each of the mentioned systems:

Decimal	8-4-2-1	5-4-2-1	Excess three	2-4-2-1
0	0000	0000	0011	0000
1	0001	0001	0100	0001
2	0010	0010	0101	0010
3	0011	0011	0110	0011
4	0100	0100	0111	0100
5	0101	1000	1000	1011
6	0110	1001	1001	1100
7	0111	1010	1010	1101
8	1000	1011	1011	1110
9	1001	1100	1100	1111

VI. Mathematics and Logic

fixed-point calculation -- Computers.

Calculation using or assuming a fixed or constant location of the decimal point or the binary point in each number.

floating-point calculation -- Computers.

Calculation taking into account varying location of the decimal point (if base 10) or binary point (if base 2), and consisting of writing each number by specifying separately its sign, its coefficient, and its exponent affecting the base. For example, in floating-point calculation, the decimal number -638,020,000 might be reported as -6.3802×10^8 , since it is equal to -6.3802×10^8 .

complement -- 1. Arithmetic. A quantity which is derived from a given quantity, expressed in notation to the base n , by one of the following rules.

(a) Complement on n : subtract each digit of the given quantity from $n-1$, add unity to the rightmost digit not zero, and perform all resultant carries. For example, the twos complement of binary 11010 is 00110; the twos complement of binary 0001 1010

is 1110 0110; the tens complement of decimal 679 is 321; the tens complement of decimal 000679 is 999321.

(b) Complement on $n-1$: subtract each digit of the given quantity from $n-1$. For example, the ones complement of binary 11010 is 00101; the ones complement of binary 0001 1010 is 1110 0101; the nines complement of decimal 679 is 320; the nines complement of decimal 000679 is 999320. The complement is frequently employed in computers to represent the negative of the given quantity. 2. Boolean Algebra. The element equal to the universe element except the stated element; the result of the operation NOT . . . or ALL EXCEPT The complement of a Boolean element a is NOT- a , or \bar{a} , or $\sim a$.

parameter -- 1. Mathematics. A constant or variable which enters fundamentally into a mathematical function and which has the property that its different values produce different functions. For example, the function $y = ax + b$ has two parameters, a and b ; when a and b are constant, $y = ax + b$ represents a line, but the choice of values of a and b determines the angles and distances at which the line cuts the coordinate axes. 2. Digital-Computer Programming. In a subprogram, a quantity which may be given different values when the subprogram is used in different parts of one main program, but which usually remains unchanged throughout any one such use. For example, a parameter may specify the number of characters in an item, the position of the decimal point, the number of columns in a field, the number of times a certain cycle of operations is to be repeated, etc. To use a subprogram routine successfully in many different programs requires that the subprogram be adaptable by changing its parameters.

Boolean algebra -- An algebra like ordinary algebra but: (1) dealing instead with classes, propositions, on-off circuit elements, etc., associated by operators AND, OR, NOT, EXCEPT, IF . . . THEN, etc.; (2) permitting computations and demonstration, as in any mathematical system; and (3) making use of symbols efficient in calculation. This algebra was named after George Boole, famous English mathematician (1815-1864), and is the first algebra met with in studying logic.

AND -- 1. Logic (and Boolean algebra). A logical (or Boolean algebra) operator which has the property that if P and Q are two statements, then the statement " P and Q " is true or false precisely according to the following table of possible combinations:

P	Q	P and Q
false	false	false
false	true	false
true	false	false
true	true	true

The AND operator is often represented by a centered dot (\cdot), or by no sign, as in $P \cdot Q$ (read " P dot Q "), PQ (read " PQ "). 2. Circuits. A connection between two circuits A and B or two circuit elements A and B which passes a signal if and only if both A and B contain the signal.

(Please turn to page 82)

RANGES OF COMPUTER SPEEDS OF

COMMERCIAL COMPUTERS

The following is a summary of the highest speed range and the lowest speed range of general purpose computer systems (including peripheral equipment) currently being marketed commercially.

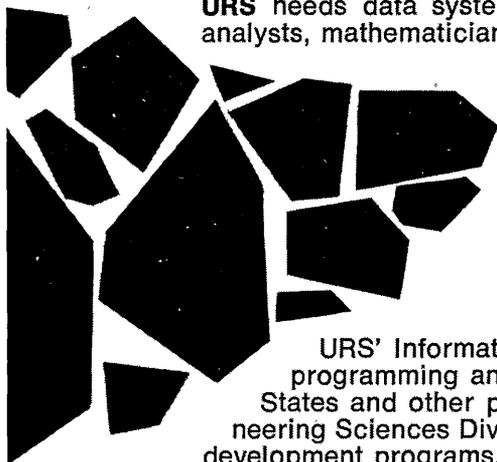
Current Computer Speeds — Internal

<u>Type of Operation</u>	<u>Speed Unit</u>	<u>High Speed Range</u>	<u>Low Speed Range</u>
Addition:	number per second	1,000,000	15,000
Multiplication:	"	400,000	5,000
Average instruction execution:	"	1,300,000	16,000
Access to fast memory:	"	13,000,000	120,000

Current Computer Speeds — External

<u>Type of Operation</u>	<u>Speed Unit</u>	<u>High Speed Range</u>	<u>Low Speed Range</u>
Paper tape: a. Read in	characters per second	1,000	10
b. Punch out	"	240	10
Punch cards: a. Read in	cards per minute	2,000	85
b. Punch out	"	360	100
Line printer:	lines per minute	1,300	20
Magnetic tape: Read or write:	characters per second	2,900,000	150
Optical character reading:	"	2,300	2,300
Magnetic ink character reading:	"	3,200	1,800

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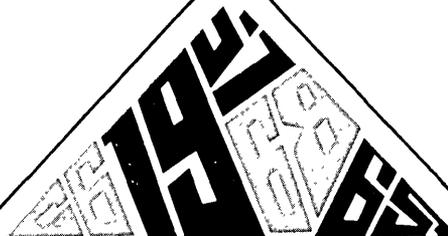
World Computer Census

International Data Corp.
Newtonville, Mass. 02160

The following figures show estimates of the number of general-purpose digital computer systems (both made in the United States and made elsewhere) installed at user sites as of June 1967. The figures were compiled through the market research programs of the International Data Corp.

<u>Location</u>	<u>Number of Digital Computer Systems Installed</u>
North America	
United States	32,500
Canada	1,200
Mexico	230
Central America	180
South America	480
Western Europe	
Austria	200
Belgium	320
Denmark	220
Finland	110
France	1,950
Great Britain	2,200
Greece	100
Ireland	85
Italy	1,300
Netherlands	500
Norway	180
Portugal	65
Spain	80
Sweden	430
Switzerland	500
West Germany	3,300
Eastern Europe and Siberia	
U.S.S.R.	1,400
Elsewhere	400
Asia	
Japan	2,700
India	210
Hong Kong	65
Elsewhere	400
Africa	
South Africa	240
Elsewhere	280
Oceania	
Australia	530
New Zealand	80
Elsewhere	25
TOTAL	52,460

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CHARACTERISTICS OF GENERAL PURPOSE

ANALOG AND HYBRID COMPUTERS

Following is a survey of general purpose analog and hybrid computers, based on returns from a current mailing and information previously published in Computers and Automation. The editors will be glad to receive any additional entries, comments or corrections.

Key to Abbreviations

DESCR (description)
APPLICS (applications)
ACCUR (accuracy) - analog: accuracy of numerical information the analog computer will take in and put out; hybrid: accuracy of digital information hybrid computer will take in and put out
CAPAC (capacity) - number of physical variables that the analog computer can store at one time
LRGST INSTL (largest installation) - number of units in the analog computer for performing mathematical operations (maximum in largest existing installation)
PRGMG (programming)
IN-OUT (input/output) - method(s) of giving information or problems to the machine
RELIAB (reliability) - typical operating percent (good time divided by attempted-to-run time)
RMKS (remarks)
*a (address above)
*C 67 - information checked by organization in 1967; (*66, in 1966; etc.)

AH 200 / DESCR: hybrid system / APPLICS: scientific, real-time / ACCUR: analog, 4 signif. figures: 10^{-4} ; hybrid, input 16 digits, output 14 digits / CAPAC: 96 / LRGST INSTL: 400 adders, 32 multipliers, 48 integrators, function generators / PRGMG: automatic prgm; change time, 10 sec / IN-OUT: conventional analog method / RELIAB: automatic checking; operg ratio, expected 90% / SALE: \$50,000 to \$400,000 / RMKS: all mode control of amplifiers independent with electronic switches; digital section of hybrid computer has track and store, buffers, all logical circuits / C.I.I., 17 route de la Reine 92, Boulogne, France / *C 67
Ambilog 200 / DESCR: general purpose hybrid computer / APPLICS: scientific, real-time / ACCUR: hybrid, 30 bits / CAPAC: - / LRGST INSTL: - / PRGMG: change time, 5 sec / IN-OUT: analog signals, magnetic tape, paper tape, light pen, keyboard / RELIAB: no automatic checking; operg ratio, 96% / SALE: \$45,000 to \$500,000 / RMKS: Ambilog 200 is a general purpose hybrid computer in the sense that hybrid arithmetic operators are integrated with the central processor; digital section of the computer has 30-bit word, multifield instruction format, hybrid arithmetic operations, 1 microsecond add time, 2 microsecond cycle time / Adage, Inc., 1079 Commonwealth Ave., Boston, Mass. 02215 / *C 67
ANALAC 110 / DESCR: general purpose scientific computer / APPLICS: scientific, real-time non-linear differential equations, implicit algebraic non-linear equations or systems, eigenvector problems, optimization / ACCUR: analog, 4 signif. figures, 10^{-4} / CAPAC: 150 / LRGST INSTL: 250 adders, 120 multipliers, 20 integrators, logic branching operations,

function generation of two variables, matrix inversion, Jacobien / PRGMG: no automatic prgm; change time, 10 min. to 2 hrs. / IN-OUT: mathematical formulation - no wiring diagram / RELIAB: automatic checking; operg ratio, 95% / SALE: \$40,000 to \$300,000 / RMKS: logic and memories in digital section / ANALAC, 17 route de la Reine 92, Boulogne, France / *C 67
ARGONAUT/RDK models B24X & B34X / DESCR: real-time, on-line analog addition, subtraction, multiplication, division, integration / APPLICS: scientific, real-time / ACCUR: analog, 0.5%; hybrid, 0.5% / CAPAC: 3 / LRGST INSTL: 3 adders, 3 multipliers, 3 integrators / PRGMG: no automatic prgm; change time, 30 sec. per channel / IN-OUT: analog or digital in, real time analog out / RELIAB: no automatic checking / SALE: \$2750 to \$8000 / RMKS: digital section of the hybrid computer features real time and continuous display / Argonaut Assocs. Inc., Box K, Beaverton, Ore. 97005 / *C 67
Burr-Brown Model 600 Analog Simulator / DESCR: specifically designed to teach science, mathematics, engineering, economics, interdisciplinary relationships / APPLICS: scientific, real-time, educational, industrial / ACCUR: analog, 3 signif. figures / CAPAC: 6 / LRGST INSTL: 4 adders, 2 multipliers, 6 integrators (usable as adders) / PRGMG: no automatic prgm; change time, 15 to 20 min. / IN-OUT: 10 co-efficient pots, one 0.1% null pot, meter for measurement and null / RELIAB: no automatic checking; operg ratio, 100% / SALE: \$3490 / Burr-Brown Research Corp., P.O. Box 11400, Tucson, Ariz. / *C 67
Card Programmed Diode Function Generator / DESCR: general purpose $Y=f(X)$ diode function generator, programmed by IBM card / APPLICS: scientific, real-time / ACCUR: analog, 4 signif. figures; hybrid, 23 input words of 12 bits / CAPAC: one $Y=f(X)$ per channel / LRGST INSTL: from 4 to 65 $Y=f(X)$ CPDFGs per computer / PRGMG: change time, 5 sec. / IN-OUT: IBM type card / RELIAB: no automatic checking; operg ratio, 99.95% / SALE: \$1900 to \$100,000; RENTAL: \$60 to \$3000 / RMKS: card programming of DFG provides fast problem change / General Computers, Inc., 5990 W. Pico Blvd., Los Angeles, Cal. 90035 / *C 67
Ci-175 Analog/Hybrid System / DESCR: medium size analog computer with high speed iterative capabilities / APPLICS: scientific, real-time / ACCUR: analog, 4 signif. figures; hybrid, 5 signif. figures / CAPAC: 36 (S.F.G.) / LRGST INSTL: 24 adders, 16 multipliers, 24 integrators, 8 comparators, 8 digitally operated switches / PRGMG: change patchboards, 2 min. / IN-OUT: digital voltmeter, strip chart recorder, oscilloscope / RELIAB: no automatic checking; operg ratio, 95% / SALE: \$30,000 to \$75,000 / RMKS: digital section of hybrid computer has patchable logic (16 flip-flops,

33 Gates) / COMCOR, Inc., *a / *C 67
Ci-500 Analog/Hybrid Computer / DESCR: iterative, 1 100V large scale, versatile; designed for interface with any digital / APPLICS: scientific, real-time / ACCUR: hybrid, 100V/.01V (13 bits) / CAPAC: 56 (S.F.G.) / LRGST INSTL: 64 adders, 32 multipliers, 32 integrators, 8 comparators, 12-DA switches, 8 relays / PRGMG: change patchboard, 2 min. / IN-OUT: in - initial condition capability / communication outside analog component; out - oscilloscopes, DVM, recorders / RELIAB: operg ratio, 99% / SALE: \$75,000 to \$180,000 / RMKS: digital section of hybrid computer has asynchronous/synchronous megacycle operation - 54 - NANDS -- 24 GPFF/B-BCO Counters / COMCOR, Inc., 1335 Claudina, Anaheim, Cal. / *C 67
Ci-5000 Analog/Hybrid Computer / DESCR: iterative, all solid-state, -100 to +100 volts. Large scale, versatile, completely designed for being tied into any digital computer / APPLICS: scientific, real-time / ACCUR: analog, 5 signif. figures / hybrid, 100V/.01V (13 bits) / CAPAC: 104 (S.F.G.) / LRGST INSTL: 120 adders, 96 multipliers, 60 integrators, 48 comparators, 30 D/A switches, 24 relays / PRGMG: automatic prgm; change patchboards, 2 min. / IN-OUT: in - initial conditions integrators, interface hardware; out - oscilloscopes, DVM, recorders / RELIAB: operg ratio, 99% / SALE: \$225,000 to \$500,000 / RMKS: digital section of hybrid computer has versatile logic components, 64 FF's, 72 NAND Gates / COMCOR, Inc., *a / *C 67
Daniel Flow Computer / DESCR: orifice flow computer / APPLICS: real-time / ACCUR: analog, 3 signif. figures; hybrid, 0.5% / CAPAC: - / LRGST INSTL: 3 adders, 2 multipliers, 1 integrator / PRGMG: automatic prgm; change time, 10 min. / IN-OUT: transducers / RELIAB: no automatic checking; operg ratio, 99% / SALE: \$1000 to \$5000 / Daniel Industries, Box 19097, Houston, Tex. 77024 / *C 67
EAI 680 Analog/Hybrid Computing System / DESCR: 10 volt, high speed, 156 amplifiers, solid state / APPLICS: scientific, real-time, not real-time, and faster than real-time / ACCUR: analog, 5 signif. figures / CAPAC: 42 / LRGST INSTL: 24 adders, 24 multipliers, 30 integrators, 24 comparators, 18 arbitrary function generators, 18 fixed function generators / PRGMG: automatic prgm; change time, 10 min. / IN-OUT: patch-panel input, integrated displays output / RELIAB: no automatic checking; operg ratio 90% / SALE: \$35,000 to \$150,000; RENTAL: \$800 to \$3300 / RMKS: over 40 installed / Electronic Associates, Inc., Monmouth Park Highway, West Long Branch, N.J. / *C 67
EAI 690 Hybrid Computing System / DESCR: EAI 680 Analog/Hybrid + EAI 640 Digital + EAI 693 Linkage / APPLICS: scientific, real-time and faster than

Analog and Hybrid Computers

- real-time / ACCUR: analog 5 signif. figures; hybrid, 16 bit single precision, 7 decimal digit / CAPAC: 50 / LRGST INSTL: 24 adders, 24 multipliers, 30 integrators, 24 comparators, 18 arbitrary function generators, 18 fixed function generators / PRGMG: automatic prgmg; change time, 20 min. / IN-OUT: punch cards/tape/disc/teletype for digital; patch panel for analog; integrated displays / RELIAB: operg ratio, 90% / SALE: \$110,000 to \$450,000; RENTAL: \$2400 to \$9000 / digital section of hybrid computer has 16 bit word length, Add/Subtract with multiple precision hardware; extensive hybrid software; 7 installed / Electronic Associates Inc., *a / *C 67
- EAI 8800 Analog/Hybrid Computing System / DESCR: 100 volt, 338 amplifier, solid state / APPLICS: scientific, real-time, and faster than real time / ACCUR: analog, 5 signif. figures / CAPAC: 120 / LRGST INSTL: 60+ adders, 72 multipliers, 66 integrators, 30 comparators, 30 arbitrary function generators, card programmed or manual / PRGMG: automatic prgmg; change time, 15 min. / IN-OUT: patch-panel input, integrated displays output / RELIAB: no automatic checking; operg ratio, 90% / SALE: \$95,000 to \$495,000; RENTAL: \$2500 to \$12,500 / RMKS: over 50 installed / Electronic Associates Inc., *a / *C 67
- EAI 8900 Hybrid Computing System / DESCR: EAI 8800 Analog + EAI 8400 Digital + EAI 8930 Linkage / APPLICS: scientific, real-time, and faster than real-time / ACCUR: analog, 5 signif. figures; hybrid, 16 bit half-word, 32 bit full word / CAPAC: 120 / LRGST INSTL: 60+ adders, 72 multipliers, 66 integrators, 30 comparators, 30 arbitrary function generators, card programmed or manual / PRGMG: automatic prgmg; change time, 20 min. / IN-OUT: punch cards/tape/disc for digital; patch panel for analog; digital and analog scopes / RELIAB: automatic checking; operg ratio, 90% / SALE: \$800,000 to \$1,400,000; RENTAL: \$18,000 to \$30,000 / RMKS: digital section of hybrid computer has high speed floating point, 32 bit word length, 750 instructions; extensive hybrid software; 14 installed / Electronic Associates, Inc. *a / *C 67
- EAI TR-20 / DESCR: solid state, versatile, portable, expandable / APPLICS: scientific, real-time, student use / ACCUR: analog, 3 signif. figures / CAPAC: up to 20 (track/store) / LRGST INSTL: 20 adders, 9 multipliers, 18 integrators, relay & electronic comparators and switches, fixed (log, sin/cos, x²) and variable DFG's / PRGMG: no automatic prgmg; change time, 15 seconds to change removeable patch panel / IN-OUT: patch panel programming or on-line operation / RELIAB: no automatic checking / SALE: \$3450 to \$11,000; RENTAL: \$210 to \$515 (minimum 1 year) / RMKS: output to X-Y recorder or optional accessory oscilloscope; repetitive operation available / Electronic Associates, Inc., *a / *C 67
- EAI TR-48/DES-30 / DESCR: solid state, versatile, expandable, desktop, high dynamic accuracy electronic mode control / APPLICS: scientific, real-time, student use / ACCUR: analog, 4 signif. figures / CAPAC: 40 (track/store) / LRGST INSTL: 58 adders, 23 multipliers, 40 integrators, relay & electronic comparators and switches / PRGMG: no automatic prgmg; change time, 15 sec. to change patch panel / IN-OUT: patch panel programming or on-line operation / RELIAB: - / SALE: \$9050 to \$46,000; RENTAL: \$425 to \$2150 / RMKS: DES-30 patchable, parallel logic components for use in conjunction with TR-48 -- solid state, synchronous. Output on X-Y recorder, or built-in oscilloscope. Repetitive operation available. 5 digit DVM / Electronic Associates, Inc., *a / *C 67
- Hybrid 7 Series developed from 247 systems / APPLICS: scientific; real-time; hybrid, parameter optimisation / ACCUR: 5 signif. figures / CAPAC: 50 / LRGST INSTL: 80 adders, 50 multipliers, 40 integrators / PRGMG: autom prgmg; 10 min. needed to change / IN-OUT: digital computer, paper tape, manual control / RELIAB: autom check / SALE: \$10,000 to \$200,000; contractual rental / RMKS: sold or rented, 65; on order, 10 / Solartron, Ltd., Farnborough, Hants, England / *C 66
- Leeds & Northrup small analog computers / APPLICS: control in industrial processes / ACCUR: accuracy function of measurements / LRGST INSTL: systems using 50 functions have been provided / PRGMG: included for system / IN-OUT: Inputs -- transducers for flow, pressure, temperature, etc.; Outputs - 3-'5 PSI, Elect drive units, etc. / RELIAB: 100% / SALE: \$500 to \$100,000 / RMKS: 25 sold; primarily for control applications in industrial processes / Leeds & Northrup Co., N. Wales, Pa. / *C 66
- Modan / APPLICS: real-time, process control / ACCUR: 0.5% of input signals / CAPAC: 7 pre-set constants in addition to 3 input variables / LRGST INSTL: basic multiplier/divider circuit occupies 3 printed circuit boards. Other modules (power supplies, function generators, etc.) added as required / PRGMG: no automatic programming, 10 min. needed to change / IN-OUT: 0 to 10 milliamperes d.c. (other d.c. inputs can be used) / RELIAB: no automatic checking / SALE: \$390 to \$650 / RMKS: Example of use -- computation of gas mass flow from measurement of flow, pressure & temperature / Evershed & Vignoles Ltd., Acton Lane, Chiswick, London W. 4, England / *C 66
- Milgo Model 4100 / DESCR: large scale analog-hybrid capability / APPLICS: real-time, not real-time / ACCUR: analog, 4 signif. figures; hybrid, comparable with digital machine used / CAPAC: 20 (track and store) / LRGST INSTL: 60 adders, 40 multipliers, 40 integrators / PRGMG: no automatic prgmg; change time, 1 min. / IN-OUT: keyboard, paper tape, digital computer / RELIAB: no automatic checking; operg ratio, 96% / SALE: \$400,000 to \$600,000 / RMKS: interface for any digital machine / Milgo Electronic Corp., 7620 N.W. 36th Ave., Miami, Fla. 33147 / *C 67
- NADAC 20 / DESCR: desk top analog computers / APPLICS: scientific, real-time / ACCUR: analog, 3 signif. figures, 10⁻³ / CAPAC: 20 / LRGST INSTL: 30 adders, 8 multipliers, 30 integrators, variable function generators - X² LogX SinX / PRGMG: no automatic prgmg; change time, 15 min. to 1 hour / IN-OUT: wiring diagram - conventional analog method / RELIAB: no automatic checking; operg ratio, 85% / SALE: \$8000 to \$20,000 / RMKS: 4 comparators in digital section of hybrid computer / C.I.I., *a / *C 67
- NADAC 100 / DESCR: general purpose analog computer / APPLICS: scientific, real-time / ACCUR: analog, 4 signif. figures, 10⁻⁴ / CAPAC: 80 / LRGST INSTL: 180 adders, 24 multipliers, 120 integrators, function generators, comparators, limitors / PRGMG: automatic prgmg; change time, 1 to 10 min. / IN-OUT: conventional analog method / RELIAB: automatic checking; operg ratio, 90% / SALE: \$60,000 to \$120,000 / RMKS: digital section of hybrid computer features logical elements / C.I.I., *a / *C 67
- RAPID Zero Defect Wiring System / DESCR: provides information, verification, and electronic production / APPLICS: real-time / ACCUR: analog, .01% / CAPAC: - / LRGST INSTL: - / PRGMG: automatic prgmg; change time, 300 milliseconds / IN-OUT: 1 inch punched paper tape / RELIAB: automatic checking / SALE: - / Micro Metrics, Inc., 165 Pennsylvania Ave., Paterson, N.J. 07503 / *C 67
- Reeves Instrument Airborne Computer / DESCR: 100V all solid state general purpose analog computer / APPLICS: scientific, real-time / ACCUR: analog, 4 signif. figures / CAPAC: 48 / LRGST INSTL: 116 adders, 10 multipliers, 48 integrators / PRGMG: no automatic prgmg; change time, removable patch bays; six sets of selectable parameter pots / IN-OUT: remote or manual switching / RELIAB: no automatic checking, operg. ratio, 100 hr. MTBF in airborne environment / SALE: \$100,000 to \$500,000 / RMKS: adders consist of high-gain summers, inverters and regular summers / Reeves Instrument Div., Dynamics Corp. of America, Garden City, N.Y. 11530 / *C 67
- SD 10/20 Analog Computer / DESCR: general purpose, desk-top analog computer with built-in digital logic / APPLICS: scientific, real-time, education (classroom demonstrations) / ACCUR: analog, 4 signif. figures / CAPAC: 1 per integrator / LRGST INSTL: 24 amplifiers, 8 multipliers, 16 integrators, 5 DFGs, 24 pots, 30 trunklines / PRGMG: no automatic prgmg / IN-OUT: logic levels to digital logic, analog voltage and resistance changes to analog modules / RELIAB: automatic checking / SALE: \$6000 to \$13,000; RENTAL: \$200 to \$450 (3-yr. lease/purchase non-cancelable) / RMKS: Clock, flip-flops, and gates are packaged in modular form to fit into the patchbay. +100 volt operating range, digital logic in plug-in modules (not separately added console) / Systron-Donner Corp., 888 Galindo St., Concord, Cal. 94520 / *C 67
- SD 80 Analog Computer / DESCR: general purpose analog with built-in digital logic / APPLICS: scientific, real-time, education / ACCUR: analog, 5 signif. figures / CAPAC: 1 per integrator / LRGST INSTL: 126 amplifiers, 26 multipliers, 40 integrators, 15 VDFGs, 125 pots, 159 trunk lines, 60 flip-flops, 60 gates / PRGMG: - / IN-OUT: logic levels to digital logic, analog voltage and resistance changes to analog modules / RELIAB: automatic

(Please turn to page 137)

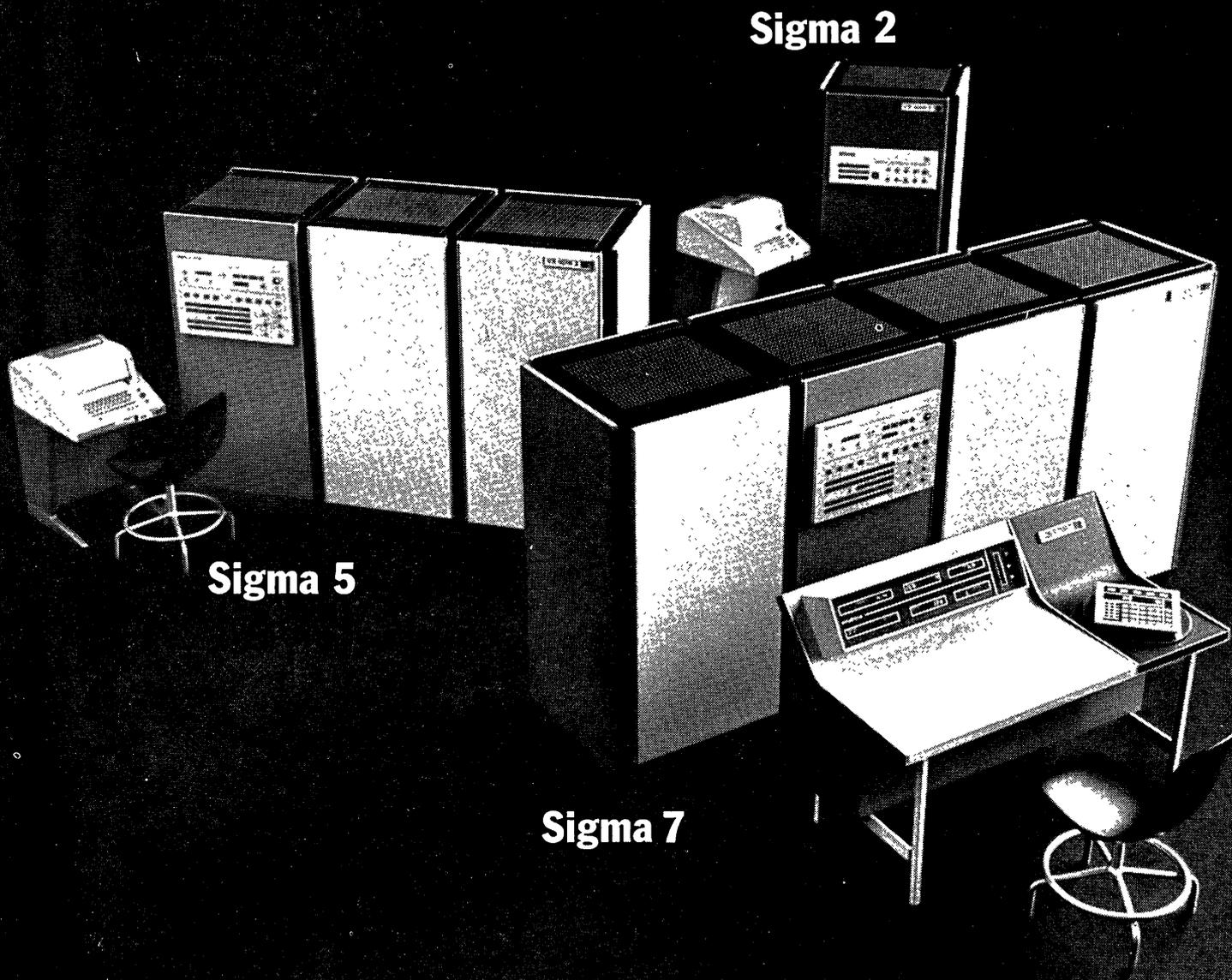
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ROSTER OF PROGRAMMING LANGUAGES

Jean E. Sammet
IBM Corp.
Cambridge, Mass. 02139

Following is a list of currently existing higher level languages developed or reported in the United States which have been implemented on at least one computer. While every effort has been made to make this list both complete and accurate, inevitably some errors of omission or commission have occurred. The author would appreciate notice of these errors for correction in future lists, subject to the disclaimer in the following paragraph.

Certain items which might be considered as programming languages by some people have been omitted because they do not meet the criteria stated in an earlier paper (see Sammet, J. E., "Fundamental Concepts of Programming Languages", Computers and Automation, Vol. 16, No. 2, Feb. 1967). In that paper, a (higher level) programming language is defined as a set of characters and rules for combining them which has the following characteristics: (1) the language requires no knowledge of machine code by the user; (2) the language is significantly independent of a particular computer; (3) there is one-many translation of instructions from source code to ob-

ject code; (4) the notation of the language is fairly natural to its problem area.

In some instances, there are many versions of a language on the list, all under differing names. No attempt has been made to name or include all these differing versions. Another class of languages omitted consists of those without assigned names, i.e., those identifiable only by the system developer(s)' name(s).

The references cited are usually the most accessible, and are not necessarily the best. Where possible, both the best reference and the most accessible reference have been given.

Where no contact has been shown, either there is no clearly identifiable one, or the contact is the same as the names shown in the cited reference(s). In some cases, the author has exercised judgment and has supplied a probable contact. However, the individuals cited as contacts have not given permission for their listing, and the author does not assume responsibility for their reaction to inquiries.

AED (Automated Engineering Design)

A generalized language, system, and set of concepts; includes AED Jr., AED O, AED I. Based on ALGOL and an algorithmic theory of language. Provides techniques for building processors for new languages. / REF.: Ross, D. T., and Rodriguez, J. E., "Theoretical Foundations for the Computer-Aided Design System", Proceedings of the Spring Joint Computer Conference, Vol. 23, May 1963; and "AED Kit" (unpublished) / CONTACT: Mr. Douglas Ross, M.I.T., 545 Technology Sq., Cambridge, Mass. 02139

ALGOL (ALGOrithmic Language)

A language developed jointly by people in the United States and in Europe. Suitable for expressing solutions to problems requiring numeric computations and some logical processes. Second version, ALGOL 60 (which had a few revisions in 1962), is the current language. Has no officially defined input/output. Revised ALGOL 60 (with some input/output specifications added) is undergoing balloting as ISO Standard. / REF.: Naur, P. (Ed.), "Revised Report on the Algorithmic Language ALGOL 60", Communications of the ACM, Vol. 6, No. 1, Jan. 1963; and "Collected Algorithms from the Communications of the ACM", Association for Computing Machinery, Inc., New York, N.Y., 1966 / CONTACT: Mr. W. L. van der Poel, Chairman, IFIP TC 2.1 (ALGOL Committee), Laan V. Meedervoort 1715, The Hague, Holland

ALTRAN

An extension to FORTRAN on the 7090/94 to do formal rational-function manipulation. Uses ALPAK subroutines. / REF.: McIlroy, M. D., and Brown, W. S., "The ALTRAN Language for Symbolic Algebra on a Digital Computer", Bell Telephone Laboratories, Inc., Murray Hill, N.J. (unpublished)

AMBIT

A string manipulation language based on a replacement rule involving a pointer. / REF.: Christensen, C., "Examples of Symbol Manipulation in the AMBIT Programming Language", ACM

Proceedings of the 20th National Conference, Aug. 1965

AMTRAN (Automatic Mathematical TRANslation)

An on-line keyboard system allowing input and output of equations in a semi-natural format, and output of graphical and numerical solutions on a scope or typewriter. / REF.: Wood, L. H., Reinfelds, J., Seitz, R. N., and Clem, P. L., Jr., "The AMTRAN System", Datamation, Vol. 12, No. 10, Oct. 1966

APL (A Programming Language)

An on-line version of a subset of Iverson's language on IBM System 360. / REF.: Falkoff, A. D., and Iverson, K. E., "APL/360", IBM Thomas J. Watson Research Center, Yorktown Heights, N.Y., March 1967; and Iverson, K. E., A Programming Language, John Wiley & Sons, Inc., New York, N.Y., 1962

APT (Automatically Programmed Tools)

A language for machine tool control. Implemented on many machines. / REF.: Brown, S. A., Drayton, C. E., and Mittman, B., "A Description of the APT Language", Communications of the ACM, Vol. 6, No. 11, Nov. 1963 / CONTACT: APT Long Range Program, IIT Research Institute, 10 West 35th St., Chicago, Ill. 60616

BASIC (Beginner's All Purpose Symbolic Instruction Code)

A very simple language developed at Dartmouth for use by students in solving numerical problems in an on-line system. / REF.: Kemeny, J. G., and Kurtz, T. E., "BASIC" (User's Manual), Dartmouth College Computation Center, Hanover, N.H., Jan. 1966

COBOL (Common Business Oriented Language)

An English-like language suitable for business data processing problems. Developed and maintained by committee of representatives from manufacturers and users. Proposed USASI draft Standard is being submitted for ballot. / REF.: "COBOL, Edition 1965", U.S. Government Printing Office, Washington, D. C., Nov. 1965; and proposed standard, "X3.4 COBOL Information Bulletin #9", ACM SIGPLAN Notices,

April, 1967 / CONTACT: Mr. John L. Jones (Chmn., COBOL Committee), Southern Railway System, 125 Spring St. S.W., Atlanta, Ga. 30303; or Mr. Paul Goodstadt (proposed standard), BEMA, 235 E. 42 St., New York, N.Y. 10017

COGO (COordinate GeOmetry)

A language useful for solving certain types of geometry problems in civil engineering. / REF.: Roos, D., and Miller, C. L., "COGO-90: An Engineering User's Manual", Dept. of Civil Engineering, Research Report R64-12, M.I.T., Cambridge, Mass., April 1964 / CONTACT: Civil Engineering Systems Laboratory, M.I.T., Cambridge, Mass. 02139

COLASL

A language developed at Los Alamos to do numeric computations on IBM 7030. Requires a special typewriter which permits 2 dimensional input and output. / REF.: Balke, K. G., and Carter, G. L., "The COLASL Automatic Coding Language", Symbolic Languages in Data Processing, Gordon and Breach Science Publishers, New York, N.Y., 1962 / CONTACT: Mr. G. L. Carter, Los Alamos Scientific Laboratories, P.O. Box 1663, Los Alamos, N.M. 87544

COMIT

A string handling and pattern matching language. Available through SHARE. / REF.: "An Introduction to COMIT Programming"; and "COMIT: Programmer's Reference Manual", M.I.T. Press, Cambridge, Mass., 1962 / CONTACT: Prof. Victor Yngve, Univ of Chicago, Graduate School Library, Chicago, Ill. 60637

CORAL (Class Oriented Ring Associated Language)

A very formal language with an unusual character set to handle certain types of list structures. Available only on the Lincoln Laboratory TX-2 computer. / REF.: Sutherland, W. R., "On-Line Graphical Specification of Computer Procedures", Tech. Report 405, M.I.T. Lincoln Laboratory, Lexington, Mass., May 1966

CPS (Conversational Programming System)

An on-line subset of PL/I on IBM

PROGRAMMING LANGUAGES

- System 360. / REF.: Preliminary version of "Terminal User's Manual for Conversational Programming System - (CPS) (A Type III Program)", IBM, April 1967 (unpublished) / CONTACT: Mr. N. Rochester, IBM Corp., 545 Technology Sq., Cambridge, Mass. 02139
- FACT** (Fully Automatic Compiling Technique) An English-like language suitable for business data processing. Available only on the Honeywell 800. / REF.: "FACT: A New Business Language" (Manual), Honeywell, Inc., Wellesley Hills, Mass. 1960
- FORMAC** (FORMula MANipulation Compiler) An extension of FORTRAN on the 7090/94 to do formal algebraic manipulation, e.g., formal differentiation, expression expansion, etc. / REF.: Sammet, J. E., and Bond, E., "Introduction to FORMAC", IEEE Transactions on Electronic Computers, Vol. EC-13, No. 4, Aug. 1964; and "FORMAC (Operating and User's Preliminary Reference Manual)", R2 IBM 0016, IBM Program Information Dept., Hawthorne, N.Y., Aug. 1965 / CONTACT: Mr. R. G. Tobey, IBM, 545 Technology Sq., Cambridge, Mass. 02139
- Formula ALGOL** An extension of ALGOL which provides basic operations for doing formal algebraic manipulation, list processing, and string manipulation. / REF.: Perlis, A. J., Iturriaga, R., and Standish, T. A., "A Definition of Formula ALGOL", Carnegie Institute of Technology, Pittsburgh, Pa., Aug. 1966
- FORTRAN** (FORmula TRANslator) The first language to be widely used for solving numerical problems. Has existed in many versions and been implemented on almost all computers. The first language to be a USASI standard. There are actually two standards: Basic FORTRAN, and FORTRAN, which correspond approximately to FORTRAN II and FORTRAN IV. / REF.: "American Standard Basic FORTRAN", ASA X3.10-1966, March 1966; and "American Standard FORTRAN", ASA X3.9-1966, March 1966 / CONTACT: (For the Standard), Mr. Paul Goodstadt, BEMA, 235 East 42nd St., New York, N.Y. 10017
- GPSS** (General Purpose Systems Simulator) A language for doing simulation problems. / REF.: "General Purpose Simulation System/360 (Introductory User's Manual)", H20-0304, IBM, White Plains, N.Y.; and "General Purpose Simulation System/360 (User's Manual)" H20-0326, IBM, White Plains, N.Y.
- ICES** (Integrated Civil Engineering System) A general system for engineering with some facilities for defining new languages. / REF.: Roos, D., "An Integrated Computer System for Engineering Problem Solving", Proceedings of the Fall Joint Computer Conference, Vol. 27, Part 2, Nov. 1965
- IPL-V** (Information Processing Language V) A language to do list processing in which the instructions are conceptually at an assembly language level. Has been implemented on many computers. / REF.: Newell, A., et al., (Eds.), "Information Processing Language V Manual", 2nd ed., Prentice-Hall, Inc., Englewood Cliffs, N.J., 1965
- JOSS** (JOHNNIAC Open Shop System) A very simple on-line system for doing numerical computations. First version was on the JOHNNIAC (since disassembled). Second version is on the
- PDP-6. / REF.: Shaw, J. C., "JOSS: A Designer's View of an Experimental On-Line Computing System", Proceedings of the Fall Joint Computer Conference, Vol. 26, Part 1, Oct. 1964; and Baker, C. L., "JOSS: Introduction to a Helpful Assistant", Memorandum RM-5058-PR, The RAND Corp., Santa Monica, Calif., July 1966
- JOVIAL** (Jules Own Version of IAL) A language containing facilities for numerical computations and some data processing. Most widely used for command and control applications. Implemented on many computers in many versions. / REF.: Perstein, M. H., "The JOVIAL (J3) Grammar and Lexicon", TM-555-002-04, System Development Corp., Santa Monica, Calif., 1966; and Shaw, C. J., "A Specification of JOVIAL", Communications of the ACM, Vol. 6, No. 12, Dec. 1963
- L⁶** (Bell Telephone Laboratories' Low-Level Linked List Language) A list processing language which allows the user to define the type and sizes of his lists. Implemented on several computers. / REF.: Knowlton, K., "A Programmer's Description of L⁶", Bell Telephone Laboratories' Low-Level Linked List Language", Communications of the ACM, Vol. 9, No. 8, Aug. 1966
- LISP 1.5** (LIST Processing) A very sophisticated and theoretically oriented language for doing list processing. Implemented on many computers. / REF.: Berkeley, E. C., and Bobrow, D. G. (Eds.), "The Programming Language LISP: Its Operation and Applications", Information International Inc., Cambridge, Mass., March 1964; and Weissman, C., LISP 1.5 Primer, Dickenson Publishing Co. Inc., Belmont, Calif., 1967
- LISP 2** An ALGOL-like language which includes facilities and many concepts from LISP 1.5. / REF.: Abrahams, P., et al., "The LISP 2 Programming Language and System", Proceedings of the Fall Joint Computer Conference, Vol. 29, Nov. 1966 / CONTACT: Mr. J. Barnett, Systems Development Corp., 2500 Colorado Ave., Santa Monica, Calif. 90404
- MAD** (Michigan Algorithm Decoder) A language for doing numerical computations which has a very fast compiler. / REF.: "The Michigan Algorithm Decoder" (The MAD Manual)", Univ. of Michigan Computing Center, Ann Arbor, Mich. / CONTACT: Prof. B. A. Galler at above address.
- MADCAP** A language developed at Los Alamos to do numeric computations and set theoretic operations. Requires a special typewriter which permits 2 dimensional input and output. / REF.: Wells, M. B., "Recent Improvements in MADCAP", Communications of the ACM, Vol. 6, No. 11, Nov. 1963
- Magic Paper** An on-line system on a specialized PDP-1 for doing certain types of formal algebraic manipulations. / REF.: Clapp, L. C., Jordan, D. E., Wax, E. J., and Wolf, R. S., "Magic Paper: An On-Line System for the Manipulation of Symbolic Mathematics", Report No. R 105-1, Computer Research Corp., Newton, Mass., April 1966
- MAP** (Mathematical Analysis without Programming) An on-line system (under M.I.T.'s Compatible Time Sharing System) for doing numerical computation, which has certain higher level mathematical operations, e.g., integrate. / REF.: Kaplow, R., Brackett, J., and Strong, S., "Man-Machine Communication in On-Line Mathematical Analysis", Proceedings of the Fall Joint Computer Conference, Vol. 29, Nov. 1966
- MATHLAB** An on-line system for doing certain types of formal algebraic manipulation. / REF.: Engelman, C., "MATHLAB: A Program for On-Line Machine Assistance in Symbolic Computations", Proceedings of the Fall Joint Computer Conference, Vol. 27, Part 2, Nov. 1965
- NELIAC** (Navy Electronics Laboratory International ALGOL Compiler) A language for doing numerical computation and some logical processes. Implemented on a number of machines; the compilers are written largely in NELIAC. / REF.: Halstead, M. H., Machine-Independent Computer Programming, Spartan Books, Washington, D.C. 1962
- PL/I** (Programming Language I) A language suitable for doing numerical scientific and business data processing problems. Combines the most significant concepts from previous languages in the individual areas. / REF.: "IBM System/360 Operating System PL/I Language Specifications", Form C28-6571-4, Dec. 1966 / CONTACT: Mr. Elliott Nohr (Chairman, USASI Prestandardization Committee), IBM, P.O. Box 37, Armonk, N.Y. 10504
- QUICKTRAN** An on-line version of FORTRAN with some restrictions, but with added facilities for debugging. / REF.: "Information Marketing QUICKTRAN User's Guide", E-20-0240, IBM, White Plains, N.Y. 10601
- RUSH** (Remote Use of Shared Hardware) An on-line subset of PL/I on special IBM System/360 model 50. / REF.: "RUSH Terminal User's Manual", Allen-Babcock Computing Inc., Nov. 15, 1966 / CONTACT: Mr. J. D. Babcock, Allen-Babcock Computing Inc., 1800 Avenue of the Stars, Los Angeles, Calif. 90067
- SIMSCRIPT** A language for doing simulation problems. / REF.: Markowitz, H., Hausner, B., and Karr, H. W., "SIMSCRIPT: A Simulation Programming Language", Prentice Hall Inc., 1963
- SIMULA** A language for doing simulation problems. / REF.: Dahl, O., and Nygaard, K., "SIMULA: An ALGOL-Based Simulation Language", Communications of the ACM, Vol. 9, No. 9, Sept. 1966
- SNOBOL** A string handling and pattern matching language. Implemented on several computers. / REF.: Farber, D. J., Griswold, R. E., and Polonsky, I. P., "The SNOBOL 3 Programming Language", Bell System Technical Journal, Vol. XLV, No. 6, July-Aug. 1966
- SOL** (Simulation Oriented Language) A language for doing simulation problems. / REF.: Knuth, D. E., and McNeley, J. L., "SOL: A Symbolic Language for General-Purpose Systems Simulation", and "A Formal Definition

of SOL", IEEE Transactions on Electronic Computers, Vol. EC-13, No. 4, Aug. 1964

STRESS

A language useful for structural analysis problems in civil engineering. / REF.: Fenves, S. J., et al., "STRESS: A User's Manual", M.I.T. Press, Cambridge, Mass., 1964; and Fenves, S. J., et al., "STRESS: A Reference Manual", M.I.T. Press, Cambridge, Mass., 1965

TRAC (Text Reckoning And Compiling)

A string manipulation language involving nested functions and macro facilities. Implemented on several computers. / REF.: Mooers, C. N., "TRAC: A Procedure-Describing Language for the Reactive Typewriter", Communications of the ACM, Vol. 9, No. 3, March 1966

TREET

A list processing language which embodies many of the LISP concepts but in an easier notation. Implemented on IBM 7030. / REF.: Haines, E. C., Jr., "The TREET List Processing Language", SR-133, The Mitre Corp., Bedford, Mass., April 1965



Seventy Key Ideas In Computing
And Data Processing

(Continued from page 75)

inclusive OR -- Logic (and Boolean algebra). A logical operator which has the property that if P and Q are two statements, then the statement P OR Q is true if and only if P is true or if Q is true or if both P and Q are true. The inclusive OR operator is often represented by a small Gothic "v", as in P v Q (read "P vee Q").

NOT -- Logic (and Boolean algebra). A logical operator that has the property that if P is a statement, then the statement "NOT-P" ("it is not the case that P") is true if the statement P is false, and false if the statement P is true. The NOT operator is often represented as follows: P' (read "P prime"), P̄ (read "P dash"), or ~P (read "tilde P").

exclusive OR -- Logic (and Boolean algebra). A logical operator that has the property that if P and Q are two statements, then the statement P OR ELSE Q is true precisely according to the following table of possible combinations:

P	Q	P OR ELSE Q
false	false	false
false	true	true
true	false	true
true	true	false

The exclusive OR operator, the OR ELSE operator, has the property: P OR ELSE Q is equivalent to P AND NOT Q, OR Q AND NOT P, and accordingly may be written in symbols $(P \cdot Q') \sim (P' \cdot Q)$.

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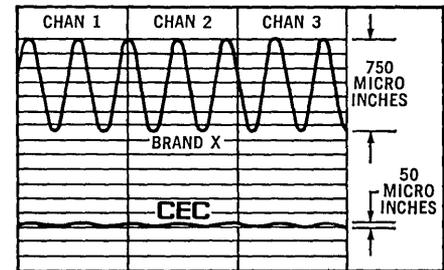
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 Directory advertising calculations
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 Equipment registers
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 Filing operations, single and multiple
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 Fixed assets accounting
 Forecasting
 General ledgers: operation
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 Information retrieval
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 Job placement: matching men with jobs
 Labor cost determinations
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 Mailing list operations
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 Management simulation
 Management statistics analysis
 Management strategy analysis
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 Market research: studies
 Message switching
 Operations research applications
 Optical character recognition
 Order acknowledgment
 Order analysis
 Order processing
 Order shipping
 Overhead cost allocation
 Overtime reports
 Payroll changes for general increases
 Payroll computation and payment

Payroll: overtime reports
 Pension reporting and updating
 Personnel: planning, placement
 Personnel records
 PERT charts: automatic drawing and up-dating
 Performance evaluation
 Plastic plates: emboss, code-punch
 Price analysis
 Property accounting
 Production forecasting
 Punched tape: automatic production and reading
 Purchase order writing
 Questionnaire analysis
 Record retention and destruction studies
 Repair and maintenance: records, scheduling, control
 Rent analysis
 Retirement fund: records, valuation
 Royalty processing
 Salary advances
 Sales analysis
 Sales area distribution
 Sales forecasting
 Sales quota calculations
 Savings bond deductions
 Scheduling for traveling salesmen
 Seniority records
 Simulation of inventory systems
 Social Security records
 Systems: analysis, synthesis, evaluation
 Taxes, calculation
 Transportation optimization
 Turnover analysis
 Vacation scheduling
 Voucher distribution
 Wage and salary analysis
 Wage and salary tax computations
 Warehousing and stocking: records, analysis
 Work-in-process records

2. Plant and Production

Assembly line balancing
 Cartons: automatic manufacture and packaging
 Construction accounting
 Construction job scheduling
 Conveyor systems: designing
 Critical path scheduling
 Delivery scheduling
 Dispatching control
 Equipment capabilities: inventory, analysis
 Factory operation simulation
 Fuel consumption: records, analysis
 Industrial accidents: analysis
 Inspection: planning, scheduling
 Job standards: determination
 Labor management: remote terminal payroll system
 Labor utilization: analysis

Lathe operations: automatic control
 Machine loading schedules
 Machine tools: numerical control
 Machine tools: control for automatic reproduction of complete parts
 Machine utilization analysis
 Maintenance: records, analysis, scheduling
 Manpower utilization: analysis, schedules
 Materials and parts: requirements, allocations, scheduling, control
 Operational planning
 Optimum ordering: determination
 Parts catalogs: construction, changes, control
 Power used: reports, analysis
 Precision measuring
 Procurement
 Product grading
 Production forecasts
 Production information analysis
 Production operations: determination of optimum order
 Production scheduling
 Quality control
 Repairs: records, analysis, scheduling, control
 Route accounting (Bakeries, Bottling plants, Dairies, etc.)
 Routing cable and electrical wiring
 Salvage records
 Scrap reporting
 Shipping control
 Shop scheduling, optimum
 Shrinkage calculations
 Traffic control
 Truck maintenance
 Warehouse automation
 Work standards: coding analysis

II. Business — Specific Fields

1. Advertising

Consumer audiences: analysis
 Direct mail advertising: addressing, personalizing
 Effectiveness analysis
 Electric signs: computer-controlled
 Expenditures: analysis, comparison, projection

2. Banking

Account reconciliation
 Accrual settlement
 Bond ownership and redemption records
 Check cashing credit: verification
 Check certification
 Check processing accounting
 Check reconciliation

Applications of Computers

Christmas clubs
Clearinghouse: reports
Corporate trust accounting
Demand deposit accounting
Deposit processing
Factoring accounts: processing
Float analysis
Fund accounting
Installment loan accounting
Interest calculation
Inter-office records: transmission, filing, recall
Loan accounting, records, and analysis
Money orders
Mortgage loan accounting
Payroll accounting
Personal trust accounting
Proof accounting
Ready credit
Real estate loan accounting
Savings and loan postings
Savings Club deposit accounting
Signature verification
Stockholder records
Teller windows: on-line transactions
Transit check handling
Trust accounting
Vacation clubs
Withdrawal processing

3. Educational and Institutional

Administration: records, analysis, determination of trends
Alumni records: maintenance, analysis
Aptitude tests: scoring, analysis
Audio-visual instruction: scheduling
College board examinations: scoring, interpreting
College selection: aiding high-school students to select colleges
Computer-assisted instruction
Curriculum searches: instructional aids
Education: forecasting administration trends and budgeting
Educational test results: compilation
Elementary arithmetic instruction
Elementary reading instruction
Honor rolls: compilation
Identifying "underachieving" bright students
Laboratory experiments: automatic control
Language teaching
Matching teachers with job vacancies
Personality test analysis for counseling
Registration of students
Report cards: preparation, issuance
Revenue and expense accounting
Scheduling of courses, classes, sections, instructors, rooms
Student attendance: records, analysis, summaries
Student loan applications: screening, approval or disapproval
Student records: interpretation, processing
Supply accounting
Teacher credential issuance
Teacher standards evaluation
Teaching
Test grading
Training manuals: preparation, maintenance

4. Finance

Amortization
Annual statements
Bond bidding
Bond evaluation
Clearing house reports
Commodity trading: customer confirmation
Dividend calculation
Equipment trust accounting
Funds: accounting, analysis
Investments: analysis, evaluation
Losses: distribution, reserves
Margin accounts: commodities, securities
Monthly customer statements
Portfolio evaluation
Securities called for redemption: reports
Security information: on-line inquiry and response
Security rating
Stock analysis
Stock market data transmission
Stock price index computed hourly, etc.
Stock tabulations
Stock transfers

5. Government

Accident records: analysis for safety programs
Air mail extracting
Appropriation accounting
Budgetary control
Census analysis
Draft: investigation, analysis
Driver license applications: checking, processing
Driver records: automated
Drug control
Economy: simulation of sections
Election return analysis
Election returns processing
Excise tax bill preparation
Fire statistics
Fiscal accounting
Foreign policy analysis
Hack licenses recording
Highway toll and service area revenues processing
Highways: maximum speed determination
Income tax accounting
Income tax checking: nationwide
Land use surveys
Mail: sorting, routing, determining volume
Motor vehicle excise tax billing
Motor vehicles: registration
New drug application processing
Parts cataloging
Political district reapportionment
Property right-of-way analysis
Property value analysis
Public Health:
 Air pollution: records, analysis
 Radiation studies
 Water pollution studies
 Water purification studies
Radio station licenses: issuance
Rubbish disposal planning, route analysis
Sales tax records, analysis
State warrants: writing
Statistical analysis
Supplies: inventory and control
Traffic: control
Traffic density: pictorial simulation
Traffic flow computation

Traffic interchanges: designs of angles and grades
Traffic light maintenance control
Traffic signal regulation
Traffic simulation
Traffic summonses
Traffic ticket control
Unemployment:
 Information and claims processing
 Matching job openings with unemployed
Urban renewal planning
Vital statistics (births and deaths)
Water and sewer rates revenue
Water monitoring systems
Workload and manpower fluctuations

6. Hospitals

Administration: control
Billing
Blood banks: inventory, usage, needs, control
Clinical observations: analysis
Clinical research information: storage, analysis
Diagnosis and treatment: providing information on-line
Health check-ups
Health insurance: hospital admission approval
Inventory
Outpatient traffic schedules
Patient billing
Patient data: on-line gathering and processing
Patient menus: planning
Patient prescriptions: checking
Patient records: collation, analysis, summaries
Patient's condition during operation: recording and reporting
Physiological systems and conditions: quantitative study
Supplies: records, control

7. Insurance

Accounting
Actuarial research
Agency accounting
Agents: record-keeping
Agents' commission calculations
Annual statement preparation
Asset share calculations
Automobile coding
Claims
Commutation column calculations
Cost allocation
Dividend formula analysis
Dividend scale calculations
Gross premium calculations
Group annuity calculations
Group insurance commissions
Loss distribution
Loss reserves computation
Management reports
Mean reserve calculations
Mortality tables
Net premium calculations
New issues: summaries, analysis
Non-forfeiture value calculations
Policy issuance
Policy registers
Policy reserve calculations
Policy writing
Premium billing
Premium and loss distribution accounting
Rate computation
Renewal rating calculations
Reserve calculations
Stock dividends: calculations
Valuation calculations

Applications of Computers

8. Labor unions
 - Analysis
 - Dues: processing
 - Membership reports
 - Summary reports
 - Transfers, re-instatements
9. Law
 - Judicial decisions: simulation of
 - Laws: analysis, consistency studies
 - Lawyers: court assignment for indigents
 - Legal research
 - Magistrate courts: records
 - Patent searching
 - Pre-testing of proposed legislation
 - Property right-of-way: analysis, determination
 - Property value: analysis
 - Reconstruction of decisions (using statistical methods) re: taxes, trust funds, public utility rates
 - Statute retrieval
 - Title searching
 - Writing title policies
10. Libraries
 - Book purchasing
 - Card catalogs: maintenance and updating
 - Information retrieval
 - Inventory
 - Magazines, journals: ordering, controlling
 - Overdue notifications
 - Records and control
 - Registration: computerized
11. Magazine and Periodical Publishing
 - Automatic typesetting
 - Classified advertisement preparation
 - Layout control
 - Mailing list maintenance
 - Mailing lists: geographic analysis
 - Mailing lists: high-speed label printer
 - Newspaper printing: long distance transmission of linotypesetting
 - Newspaper printing: high-speed linotype setting by punched paper tape and computer
 - Phototypesetting, computerized
 - Printing: automatic hyphenation of words
 - Printing: automatic line justification
 - Renewals: analysis, promotion
 - Subscription fulfillment
12. Military
 - Air Force engines and parts: regulation of supply
 - Distressed ships: dispatching aid
 - Plotting location of all ships and planes in operation
 - Stock priority items: speedy shipment
13. Oil Industry
 - Absorber calculations
 - Aerial surveys and exploration: analyses
 - Bulk stations: wholesale sales, billing, accounting
 - Credit card accounting
 - Crude oil: analysis of properties, evaluation, processing
 - Depletion accounting
- Distillation tower design
- Equilibrium flash calculation
- Flow: control
- Fuel deliveries: degree-day accounting
- Gasoline blending
- Gravity drainage analysis
- Gravometric analysis
- Heat and Material balances
- Heat exchange calculations
- Instrument scanning
- Lease and well expenses and investments: records and analysis
- Map construction
- Mass spectrometer data: reduction, analysis
- Material and energy balances
- Off-normal variables alarm
- Off-shore deep sea drilling: ship position control
- Off-shore installations: studies of design variations
- Oil field analysis:
 - Correlations of data from different drill holes;
 - Correlation of data from seismic tests;
 - Estimated amount and direction of flow of fluids through porous rocks
- Oil pipe-line system: automatic control and operation
- Oil purchase accounting
- Operating records: logging
- Petroleum exploration: data reduction
- Petroleum reserves: calculations
- Physical behavior of complex mixtures: predictions
- Pipe stress analysis
- Plate-to-plate distillation calculations
- Product mix for oil refineries: determination
- Refinery and gas plant components: design, operation
- Refinery shutdown and maintenance: scheduling calculations
- Refinery simulation
- Remote control of crude oil production
- Secondary recovery: analysis
- Seismic data reduction
- Well logs: corrections
- Wells and fields: prorating analysis
- Yield accounting
14. Police
 - Arrests: record
 - Crime occurrence: pattern analysis
 - Criminal identification
 - Fingerprints: processing, searching
 - Message switching
 - Stolen automobile: identification
 - Stolen property: information storage and retrieval (national file)
 - Traffic law violations: recording, accounting, analysis
 - Wanted persons: information storage and retrieval (national file)
15. Public Utilities
 - Boiler control
 - Circuits and lines: mileage analysis
 - Compressor performance
 - Dispatch control
 - Electric distribution networks
- Electric telemetering
- Electrical power control
- Engineering studies
- Equipment: attrition and life expectancy
- Fuel: records, analysis
- Gas dispatching: on-line control
- Gas distribution networks
- Gas well probation
- Load duration
- Load flows
- Market surveys
- Meter reading
- Meter test records
- Natural gas measurement
- New service areas: calculations
- Operating reports, analysis
- Pipe line design
- Power distribution calculations
- Power plants: stability of control
- Power production scheduling
- Pressure vessel flange designs: calculating, listing
- Rate determination
- Repair calls: dispatching, scheduling
- Sag-tension studies
- Steam turbines: output, control
- Surety deposit records
- Transformer thermal rating
- Transmission line design and losses
- Water filtration plant control
- Water reservoir management
- Water supply evaluation
16. Religious organizations
 - Bible distribution
 - Church funds: analysis, distribution
 - Missionary work:
 - Personnel record keeping
 - Payroll and budget accounting
17. Sports and Entertainment
 - Airplane racing: final scoring, specialized category winners, up-to-the-minute standings
 - Animated film production
 - Bowling: averages, handicaps, records, scoring
 - Bridge tournaments: shuffling and dealing
 - Contests: judgment of entries
 - Football: judging contest entries
 - Horse racing: handling lists, determining odds, calculating prices paid on winners
 - Indoor golf: measurement of shots
 - Motion picture distribution
 - Motion pictures: producers settlement statements
 - Olympic Games: registration, scoring, winners, up-to-the-minute standings
 - Television shows: success or failure predictions
 - Television stations: availability status of commercial time
 - Television stations: management reports
 - Television stations: real-time program switching operations
 - Theatre: scheduling, planning, production
 - Ticket printing (on-line transactions)
 - Ticket sales: inventory (on-line)
18. Steel Industry
 - Billet cut-up line: control
 - Blast furnace burden calculation: determining economical ore mixture

Applications of Computers

Hot sheet mill: computer-controlled
Mill pacing for maximum throughput
Power control: optimization
Production logging
Smelting process: blast furnace stockhouse control
Steel mill simulation
Steel sample analysis
Utilities and power requirements: control

19. Telephone Industry

Assigning dial equipment
Automatic telephone exchange for private lines
Circuit deviations: determining and repairing
Coin telephone: collecting, accounting
Customer payments
Forecasting for construction planning
Local service charge billing
Long-distance charge billing
Long-distance rates: split-second quotation
Long-distance transmission of data
Message register billing
Speech waves: generation, analysis
Toll ticket billing
Updating "yellow pages" directories
Written message telephoning
Written messages: automatic switching

20. Textile Industry

Dyeing process control
Fabric quality control
Marking systems, automated
Matching colors
Material availability evaluation
Monitoring clothing production
Pattern grading, automated
Production planning
Sales analysis
Style forecasting
Style reports
Textile design

21. Transportation

Air freight: automated cargo handling
Air freight: shipment tracing
Air traffic control
Air traffic prediction plots
Aircraft loading requirements charts
Aircraft maintenance: recording, scheduling, analyzing
Airline fare computation
Airline flight schedules: planning
Airline flight simulation
Airline passenger space control
Automatic toll registration
Bus scheduling
Cloud-height-data analyzer for airports
Collision warning systems
Crew training
Elevators: automatic control
Flight plan issuance
Flight simulation
Helicopter rotor evaluation
Motor freight records: analysis
Moving industry:
 Tariff analysis
 Van management
Navigation systems
Parking garages: automatic control

Pilot training
Position plotting of airplanes
Preventive maintenance scheduling
Railroad car identification and recording
Railroad cars: wheel slip control
Railroad fares: collection allocation
Railroad freight cars: accounting, allocation, distribution, control
Railroad inventory accounting
Rail traffic control, centralized
Reservation systems
Revenue tonnage statistics
Satellite orbit calculations
Seamen training
Ship arrival forecasting
Ship traffic: statistical analysis
Subways: automatic control
Terminal operation simulation
Ticket billing
Ticket validation
Trains: automatic control
Tramp ship operating: computerized bidding
Travel reservations
Trucking: central rating and automatic billing of each shipment
Trucking: reports on the composition of all loads dispatched
Trucking: simulating operating conditions
Trucking: split-second furnishing of status of any shipment
Trucking: traffic control

22. Miscellaneous

Agriculture: crop shifting indications
Auto-crash studies, simulation
Automobile dealerships: profitability analysis
Automobile repair: testing
Automobile replacement parts: inventory and distribution
Automobile warranties: information storage and retrieval
Automobiles:
 Auto parts: design
 Diagnostic testing
 Exhaust emissions: data analysis
Building construction schedules
Cement making: proportioning and control of raw materials
Clothes: design
Construction: estimates of electrical work costs
Construction: selection of housing materials
Farm management simulation
Forestry: planting and cutting trees
Graphing of scientific data
Harbor and port facilities: planning, evaluation, fillin shallows calculations
Hotels: guest charge accounting and billing
Hotels: registration, reservations
Indexes: preparation
Inventions and patents: filing, retrieval
Literature searching: automatic location of scientific articles
Mail-order operations: classifying and coding customers
Mail-order operations: order processing
Mail-order operations: re-starting after fire

Market Research:
 Competitive bidding: analysis
 Future markets: analysis
 Price change effects: analysis
Map compilation and production
Meat packaging: mixture, optimization
Ore mines: traffic control
Personnel selection
Real estate: building appraisal and valuation
Real estate: matching house-seekers with houses
Real estate: information retrieval system
Restaurant ordering
Retail store credit authorization
Specialized personnel-searching
Vending machine programming

III. Science and Engineering

1. Aeronautics and Space Engineering

Aerodynamical formulas: evaluation
Airborne jet-engines: control, management
Aircraft safety: control of cargo weights and fuel supply
Airfoil synthesis
Airframe stress analysis
Astronaut training
Atmospheric re-entry studies
Automatic checkout for aircraft, missile, space vehicles
Behavior in space flights: analysis
Boost cut-off determination
Catastrophe simulation
Contour maps presentation
Critical speed problems
Curve fitting
Engine design for propelling space vehicles
Factor analysis
Flight control for missiles and space vehicles
Flight simulation
Flight test data reduction
Flight training devices
Flutter analysis
Ground controlled approach: programming
Guidance and flight control studies
Guidance sensitivity problems
Guidance systems design
Gyroscopic calculations
Heat transfer analysis
Helicopter piloting studies
High-altitude balloon flights
Horizon scanning
Hypersonic air data analysis
Inertial guidance for missiles and space vehicles
Interplanetary space probes control
Jet aircraft, landing gear: design
Jet aircraft refueling
Lunar orbiter cameras: control
Lunar probes control
Moon flight simulation
Moon landing simulation
Navigation training devices
Orbit injection
Parachute recovery system
Radar and telemetry antennas: positioning and pointing of
Re-entry vehicle development
Rocket flight simulation
Rocket motor propellants: analysis, control during firing
Rocket nozzle development for space boosters

Applications of Computers

- Satellite photography rectification
 - Satellite research
 - Satellite tracking
 - Self-adjusting pilot
 - Simulation of physiological reactions of astronauts
 - Space platform "anchorage"
 - Spacecraft transmitted pictures: assembling, developing
 - Spaceship positions: precise determination
 - Static rocket engine checkout
 - Suspension reaction for airborne stores
 - Theodolite data reduction
 - Turbo jet engine testing
 - Vibration analysis
 - Wind tunnel data reduction
2. Astronomy
- Artificial satellite orbit calculations
 - Comet orbits: calculations, analysis
 - Interplanetary probe calculations
 - Lunar orbit calculations
 - Optical measuring engines: control
 - Planetary orbit calculations
 - Star density calculations
 - Stellar evolution calculations
 - Visual information: detecting, analyzing
3. Biology
- Animals: behavior models
 - Brain: tracing messages from sense organs to the brain
 - DNA molecular code analysis
 - Hybrid optimization
 - Livestock breeding analysis
 - Livestock feeding control
 - Livestock-feed ingredient-mix; optimization
 - Molecules: determination of position of atoms
 - Species characteristics: correlation analysis
 - Species varieties: automatic classification
4. Chemical Engineering and Chemistry
- Bound chemicals: simulation of reaction between
 - Chemical analysis
 - Chemical compounds: structure studies
 - Chemical kinetics: problem solving
 - Continuous-flow stirred-tank reactor: simulation and control
 - Crystal structure factors
 - Distillation processes: determination of starting times, etc.
 - Equilibrium equations: studies
 - Fertilizer-mix: optimization
 - Flash vapor calculations
 - Gas line calculation
 - Hydrocarbons: structure analysis
 - Ion exchange column: performance appraisal
 - Mass spectrometer analysis
 - Material flow to batch chemical plants: program simulation
 - Meteorite pattern charting
 - Molecular structure calculations
 - Organic compounds: classification
 - Organic compounds: file searching
 - Permeability, relative: computations
 - Process control
 - Process simulation
5. Civil Engineering
- Abutment design
 - Adjustment of level net
 - Area calculation by coordinates and by other methods
 - Azimuth calculations
 - Beam design
 - Bridge design
 - Construction tie computation
 - Curve, arc, line computations and intersections
 - Cut and fill calculations
 - Cylindrical shell analysis
 - Dam design
 - Distance, station and offset, to a point
 - Earthwork computations
 - Elevation calculations
 - Embankment stability design
 - Flood control systems: analysis, synthesis
 - Freeway assignment
 - Freezing and thawing of soils
 - Grade sheet processing
 - Harbor analysis
 - Highway design
 - Highway profiles
 - Highways: determination of future needs
 - Levee design
 - Monthly equipment summary
 - Oceanographic currents: studies
 - Oceanographic salinity: studies
 - Oceanographic temperatures: studies
 - Pavement design
 - Photogrammetric data reduction
 - Pier design
 - Pile load computation
 - Pipe design
 - Pressure distribution in layered media
 - Prestressed concrete: design
 - Rainfall simulation
 - Ramp and interchange design and calculations
 - Reinforced concrete: design
 - Rerouting traffic during emergency conditions
 - Reservoir design
 - Retaining wall design
 - Roadway elevations
 - Route optimization
 - Sewage disposal studies
 - Shell structure design
 - Slab volumes and other calculations
 - Soil test analysis
 - Steel column design
 - Stress analysis
 - Survey closure: control
 - Three-point problem solutions
 - Transformation of coordinates
 - Traverse adjustment
 - Traverse closure
 - Triangulation
 - Vertical alignment
 - Water distribution systems: analysis, optimization
 - Water system: mathematical models
6. Economics
- Household simulation
 - Industry: analysis, simulation of competition
 - Input-output analysis
 - Input-output: analysis, models
 - Leontief models
 - Mathematical models of investment planning
 - Non-linear economic models
7. Electrical Engineering
- Antenna design
 - Cathode tube design
 - Circuit analysis and design
 - Circuit assembly: control
 - Component design
 - Computer logic circuits: design
 - Computer wiring: automatic design and control
 - Economic load dispatching
 - Electrical analysis of circuit types
 - Electromagnetic wave propagation in various media
 - Feedback system, single loop, finding the root locus
 - Field dynamic error computations
 - Filter analysis
 - Generator calculations
 - Load flow studies
 - Logical networks: design
 - Motor calculations
 - Power network transient studies
 - Radar echoes
 - Radio interference
 - Short circuit studies
 - Standard beam antenna patterns
 - Systems evaluation
 - Transformer design
 - Transient performance
 - Transient wave-tube calculations
 - Traveling wave-tube calculations
 - Triode design
 - Turbo-generator thrust bearing: study, analysis
8. Geology
- Contour maps and charts: computer print-out
 - Earth surface study: formations; changes; projections into future
9. Hydraulic Engineering
- Backwater profiles
 - Compressible and incompressible flow analysis
 - Culverts: analysis, geometry
 - Drainage systems design
 - Flood and flow forecasting
 - Flood control calculations
 - Flood frequency analysis
 - Flood routing
 - Flow in open channels
 - Ground water: flow of
 - Hydraulic circuits and components: design
 - Hydraulic network analysis
 - Hydroelectric dam design
 - Multi-purpose water-reservoir system management
 - Pipe stresses
 - Reservoir aggradation
 - Reservoir area computations
 - Sewer design
 - Shock-wave effect analysis
 - Surge-tank analysis
 - Turbine speed regulation
 - Unit hydrographs: determination
 - Water hammer analysis
 - Wave motion analysis
 - Wind-wave analysis
10. Marine Engineering
- Beam shapes: structural analysis
 - Compartment pressures in emergency situations
 - Compartment ventilation calculations
 - Force analysis of space structures
 - Form calculations
 - Fuel rate analysis

Applications of Computers

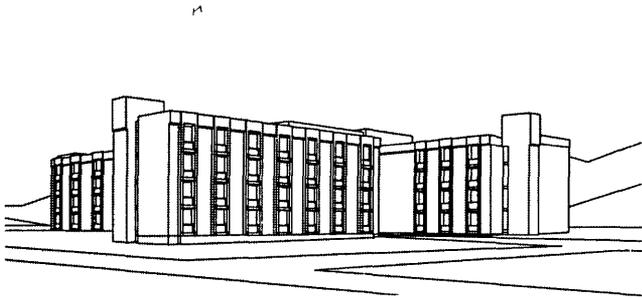
- Gyroscopic-compasses sea-test: data reduction
Hull structure plates: design, numerically controlled cutting
Hydrostatic functions
Mechanical analysis of machinery
Oceanographic properties: study of fields
Plate and angle combinations: calculations
Plate shapes: structural analysis
Ship displacement calculations
Ship maneuvering calculations and control
Ship models: extrapolation of observations
Ship waterline characteristics
Shock isolator calculations
Submarine hulls: Bon Jean calculations
Submerged cables: calculation of transient motion
Turbine reduction gear system: vibration analysis
Ullage tables
11. Mathematics
- Bessel functions
Boolean algebra calculations
Calculus of variations
Computer programming produced by one computer for another one (boot-strapping)
Constants, important: evaluation
Convolution
Coordinate rotation and translation
Curve fitting
Determinant evaluation
Differentiation: numerical
Difference equations solution
Differential equations solution
Differentiating symbolically
Dynamic programming equations: solutions
Eigenvalues and eigenvectors: calculations
Fourier analysis and synthesis
Function tables: computation
Integral equations
Integration: numerical
Integration of functions
Intelligence: simulation of human thinking processes
Lagrange interpolation
Least squares fit to inconsistent equations
Linear programming equations: solutions
List processing
Logarithms
Matrix inversion
Matrix multiplication
Multi-dimensional partial differential equations
Multiple integrals
Numerical base conversion
Partial difference equations: solutions
Partial differential equations: solutions
Polynomial roots
Proportional gain
Reciprocals
Recursive functions: computation
Simulation of mathematical equations and solutions
Simultaneous linear equations
Simultaneous non-linear equations
Simultaneous ordinary differential equations
Square roots
Stochastic difference equations
Table computation (evaluation of functions)
12. Mechanical Engineering
- Air conditioning calculations
Arch analysis and design
Building frames for reinforced concrete construction: Hardy Cross analysis
Cam design
Casing design
Combustion computations
Composite stringers design
Compressors: horsepower calculations
Conveyor geometry
Crankshaft vibration analysis
Engine and piston computations
Engineering drawings: producing, finishing
Flange cross sections, table of properties
Foundation settling: effects
Heat flow
Heat loss of rooms and buildings
Machine vibration analysis
Moments of inertia
Orifice factors: computations
Pipe-stress analysis
Piping systems, flexibility analysis
Pressure vessel computations
Propeller pitch correction
Reinforced concrete: bending, stress, etc.
Rigid body vibrations: analysis
Rigid frames: moment distribution analysis
Shell analysis: stress distribution
Temperature stresses
Throttling device computation
Torsional systems, bearing loads, and engine forces: Holzer analysis
Truss analysis: stress and deflections
Vehicle checkout calculations
Vibration analysis
13. Medicine and Physiology
- Ambulatory clinic records control
Anesthesia control
Arterial physiology research
Alveolar gas parameter computation
Bacteria in photographs, slides: counting
Ballistocardiogram analysis
Biologic rhythm studies
Blood cells in photographs, slides: counting
Blood chemistry determination
Blood grouping and typing
Blood samples: analysis
Blood vessels — distensibility: determination
Blood volume: calculation of total amount in circulation and loss
Bone crystal structures: calculations
Cancer: diagnosis and treatment
Cancerous cell growth simulation
Cardiac output — dye dilution curves: studies
Cardiovascular physiology studies
Cerebral slow waves: correlation and spectral analyses
Cervical and vaginal smear screening
Chromosome screening
Clinical data: statistical analysis
Compartmental rate exchange parameters
Controlled artificial hand
Coronary artery disease prediction
Cytophotometric analysis
Dermatoglyphic diagnosis
Diagnosis of disease
Diagnostic possibilities: listing, suggestions, comments
Eating habit pattern
Ecological system simulation
Effect of drugs on animals: studies
Effect of drugs on human body: studies, analysis of effectiveness
Effects of organic chemical compounds in malaria, radiology, schistosomiasis, etc.
Effect of radio-frequency waves on biological macromolecules: studies
Electrocardiogram integration and analysis
Electroencephalogram analysis
Enzyme kinetic representations
Evoked brain-wave response analysis
Eye muscle studies
Fatigue research
Fetal heart beat recording
Gastrointestinal tract pressures: detection and recording
Gene frequency calculation
General anesthetic simulation
Growth and physique studies
Hearing loss: testing analysis
Heartbeat analysis
Human brain simulation
Human ear simulation for speech analysis
Human ear: simulation for hearing analysis
Human retinal and brain responses to light simulation
Hypertensive pressure computations
Intestinal absorption rate measurement
Intracranial lesions, site stability, nature: studies
Iodine metabolism computation
Isotope tracer studies: analysis
Location of pain-transmitting area in brain
Malignant tissues, location
Medical data: telemetering and analysis
Medical literature: indexing, analysis
Medical tests: analysis
Medication administration schedules
Metabolic control involving chemical feedback
Motor system coordination testing
Neural events: studies
Neuroelectric data processing
Neuron signal conduction theory
Nutritional intake analysis
Ocular lesions, site, stability, nature: studies
Ophthalmologic disorders simulation
Optimum therapeutic procedure determination
Patient history recording
Patient simulators for training in anesthesiology
Pediatric psychiatric diagnosis
Pharmacological research: patient simulation
Phonocardiogram analysis
Physiology of the eye: analysis
Post mortem examination analysis
Probability in medical diagnosis
Psychiatric test scoring
Pulse analysis
Pupil servomechanism analysis

Applications of Computers

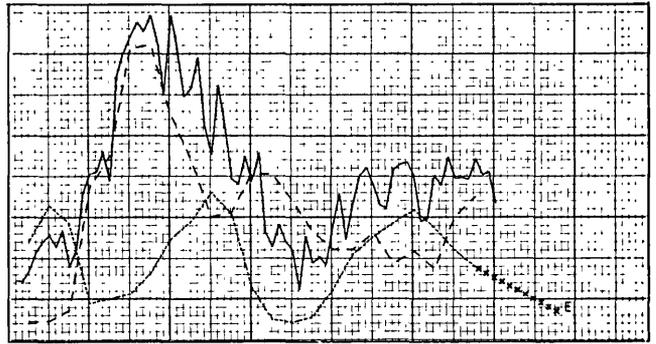
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|---|---|---|
| <p>Radiation therapy
 Red cell volume: calculation
 Renal function simulation
 Screening community population for the presence of heart disease
 Shock therapy: monitoring of patient condition
 Speech research
 Symptom-disease complexes
 Temperature of man: simulation
 Toxicity data analysis
 Tumors, location
 Vessel wall properties and hemodynamic studies
 Whole blood supply and distribution control
 X-ray analysis</p> | <p>Submerged flow: potential patterns
 Underwater acoustic experiments</p> | <p>Correlation
 Covariance
 Factor analysis
 Forecasting
 F-test
 Gamma function
 Gaussian probability
 Hypergeometric probability
 Least-square-polynomial fitting
 Maximum likelihood functions
 Moments
 Moving averages
 Multiple regression
 Non-linear estimation
 Period search
 Poisson probability
 Sampling
 Sampling implementation
 Time series analysis and adjustment
 T-test I (sample mean vs. population mean)
 T-test II (difference between two means)
 Variance: analysis</p> |
| <p>14. Metallurgy</p> <p>Alloy calculations
 Crystal structure computations</p> | <p>18. Nuclear Engineering</p> <p>Engines: tests, data control
 Multigroup criticality calculations
 Neutron diffraction
 Neutron flux distribution
 Neutron transport
 Power plant monitoring
 Radioactive fallout: analysis, prediction
 Radioactive level calculations
 Reactor control
 Reactor design and evaluation
 Reactor simulators</p> | <p>IV. Humanities</p> <p>1. Archeology</p> <p>Archeological data: information retrieval and analysis
 Artifacts found at sites: classifying, reconstructing
 Museum accession records: information retrieval and analysis
 Pottery shards found at sites: analyzing, classifying, reconstructing
 Stones found at sites: determination whether of natural or human origin based on analysis of angles and other characteristics</p> |
| <p>15. Meteorology</p> <p>Atmospheric turbulence and diffusion: simulation
 Cloud picture processing
 Flood control
 Global weather simulation
 Hurricane forecasting
 Ionospheric mapping
 Meteorite pattern charting
 Short-range storm observation and forecasting
 Weather forecasting
 Weather research: gridding of picture data
 Weather satellites: real-time assessment</p> | <p>19. Photography</p> <p>Aerial photographs: distortion compensation
 Color analysis
 Color separation negatives: scanner for automatic production
 Lens coating calculations
 Optical ray tracing
 Optical system design</p> | <p>2. Anthropology</p> <p>Cords and string: analysis
 Content analysis for cross-cultural values study</p> |
| <p>16. Military Engineering</p> <p>Ballistic trajectories
 Bomb impact analysis
 Bombing tables
 City evacuation studies
 Command and control: systems, displays
 Fire control
 Firing tables
 Missiles: analysis, calculations:
 Controlling
 Designing
 Directing
 Drafting structural parts
 Intercepting
 Launching
 Predicting impact points
 Recovering
 Pursuit and combat: analysis, control
 Radar defense systems: analysis, calculations
 Reconnaissance data: analysis and interpretation
 Rocket trajectories
 Strategical weapons systems: studies, assessment
 Strategy analysis and optimization
 Submarine battles: simulation for crew training
 Tactical weapons systems: studies
 Trajectory calculations
 Weapons control
 Weapons systems analysis and evaluation</p> | <p>20. Physics</p> <p>Atom-human communications system
 Cosmic radiation: statistical analysis
 Crystallography analysis
 Elastic particle collision studies
 Electron distributions
 Electron trajectories
 Gamma ray particles: multiparameter analysis
 Interatomic bond lengths and angles
 Shock waves analysis
 Thermodynamic equations</p> | <p>3. Art</p> <p>Designs by computer
 Graphic representation by computer</p> |
| <p>17. Naval Engineering (see also Marine Engineering)</p> <p>Anti-submarine warfare simulation
 Cavitation studies
 Component attrition rate analysis
 Decompression tables
 Minesweeper vessels navigation</p> | <p>21. Psychology</p> <p>Canonical analysis
 Cognitive processes simulation
 Data reduction and analysis
 Factor analytic studies
 Human language behavior: analysis, synthesis
 Learning and behavior studies
 Multiple regressive models for prediction
 Neural behavior simulation
 Pattern analytic methods: agreement analysis, configural analysis, multiple scalogram analysis, profile analysis
 Perception studies
 Psychological tests: analysis
 Space flights: study of behavior
 Time and motion studies: data collection and analysis</p> | <p>4. Games of skill</p> <p>Checkers: championship play
 Chess: rudimentary play
 Kalah: excellent play
 Nim: perfect play
 Quad: excellent play
 Tit-tat-toe: perfect play</p> |
| <p>18. Naval Engineering (see also Marine Engineering)</p> <p>Anti-submarine warfare simulation
 Cavitation studies
 Component attrition rate analysis
 Decompression tables
 Minesweeper vessels navigation</p> | <p>22. Sociology</p> <p>Data reduction and analysis
 Social behavior simulation
 Social processes: hypothesis testing
 Sociometric data: analysis
 Voting behavior simulation</p> | <p>5. Genealogy</p> <p>Data analysis</p> |
| <p>19. Naval Engineering (see also Marine Engineering)</p> <p>Anti-submarine warfare simulation
 Cavitation studies
 Component attrition rate analysis
 Decompression tables
 Minesweeper vessels navigation</p> | <p>23. Statistics</p> <p>Bernoulli probability
 Beta function calculation
 Binomial coefficient calculations
 Chi squared function calculations
 Complex error function and integral</p> | <p>6. Geography</p> <p>Map production
 Record matching
 Spatial pattern analysis
 Theory testing</p> |
| <p>20. Naval Engineering (see also Marine Engineering)</p> <p>Anti-submarine warfare simulation
 Cavitation studies
 Component attrition rate analysis
 Decompression tables
 Minesweeper vessels navigation</p> | <p>24. Statistics</p> <p>Bernoulli probability
 Beta function calculation
 Binomial coefficient calculations
 Chi squared function calculations
 Complex error function and integral</p> | <p>7. History</p> <p>Census records — ecological implications: analysis, summaries
 Congressional voting records — social implications: analysis, summaries
 Court records and decisions — implications: analysis, summaries</p> |

(Please turn to page 136)

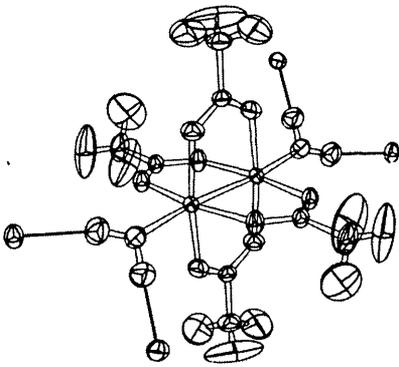
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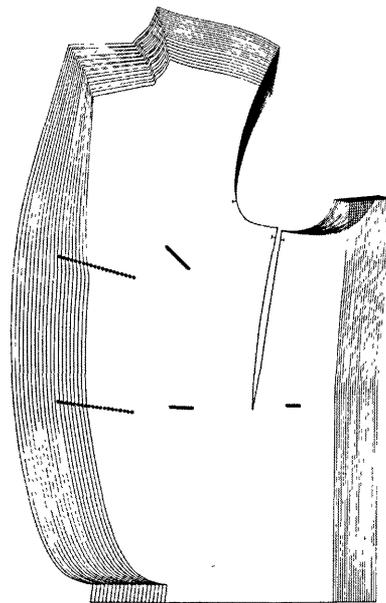
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molecular structure diagrams



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CHARACTERISTICS OF GENERAL PURPOSE DIGITAL COMPUTERS

The purpose of this report is to give the characteristics of general purpose digital computers currently available for sale or rent.

The three sections give: (1) Internal Characteristics; (2) Input and Output; and (3) Cost and Use.

Any additions, corrections, or comments are invited.

EXPLANATION OF HEADINGS

Internal Characteristics

Solid State?: If the computer is built with primarily solid state devices such as transistors, distinguished from non-solid state devices such as vacuum tubes, a "Y" appears in this column. Solid state devices are generally more reliable than non-solid state devices.

Number System:

Number Base: the number base the machine uses internally (either binary, octal, or decimal).

Bits/Digit: the number of binary bits per digit (digit is either a binary, octal, or decimal digit; SEE Number Base.)

Digits/Alphabetic: the number of digits used to represent an alphabetic character.

Word Length: the number of numerical digits per machine word.

Memory:

Number of Words: the number of machine words contained in the memory; may be broken into two or more memory types on two or more lines. Whenever the machine word length is "variable", the Number of Words refers not to the number of machine words but to the number of digits.

Type: memory type, such as magnetic drum (abbreviated "drum"), core storage or delay line.

Access Time: the time required to retrieve information from the memory.

Timing -- Add, Multiply, Divide: the average time required to get and complete one operation instruction.

Machine Programming:

Number of Instr.: the number of distinct instructions in the machine's repertoire.

Addresses/Instr.: the number of operand addresses per instruction.

No. Index Registers: a "0" indicates no indexing possible; a "Y" indicates that indexing is possible but information as to the number of index registers was not received.

Indirect Addressing?: "Y" indicates indirect addressing is possible.

Floating Point?: "Y" indicates that the machine can perform in a floating-point mode. (Floating-point arithmetic can be programmed on all machines.)

Input and Output

Magnetic Tape:

No. of Units: maximum number of tape transports which can be directly connected to the computer.

Tape Density: characters per inch.

Tape Speed: speed of reading or writing on tape.

Words/Tape: capacity of a reel of tape.

Punched Cards: speed of reading and punching cards.

Paper Tape: speed of reading and punching paper tape.

Printer Speed: speed of printing, complete lines printed per minute.

Cost and Use

Average Monthly Rental: the rental at an average installation.

Rental Range: the monthly rental range made possible by different configurations of available equipment.

One-Sum Price Range: the range of selling price.

Power: electricity requirements for an average installation.

Floor Space: floor space needed at an average installation.

Air Cond. -- Tons: air conditioning required at an average installation.

Abbreviations Used

A/D -- analog to digital	MICR -- magnetic ink character recognition
B -- binary	MRWC -- multiple read-write-compute
BTD -- binary to decimal	N -- no, none
D -- decimal	O -- octal
DA -- digital to analog	OCR -- optical character recognition
DTB -- decimal to binary	P -- punch, output
FBD -- fast bands on memory drum	R -- read, input
I/O -- input/output	S -- by subroutine
K -- 1000	u -- microsecond, millionth of a second
KK -- 1,000,000	V -- variable
m -- millisecond, thousandth of a second	Y -- yes
n -- nanosecond, billionth of a second	

Adage, Inc., 1079 Commonwealth Ave., Boston, Mass. 02215
Ambilog 200

Advanced Scientific Instruments Co., a div. of Electro-Mechanical Research, Inc., 5249 Hanson Court, Minneapolis 29, Minn.

ASI 210, ASI 420, ASI 2100, ASI 6020, ASI 6040

Alwac Computer Div., El-Tronics, Inc., 13040 S. Cerise Ave., Hawthorne, Calif.

ALWAC III-E, formerly made by above, no longer in production.

Bailey Meter Co., Wickliffe, Ohio 44092

Bailey 855

The Bunker-Ramo Corp., 8433 Fallbrook Ave., Canoga Park, Calif.

BR-133

Burroughs Corporation, 6071 Second Ave., Detroit 32, Mich.

Burroughs E-103, 205, 220, 200 Series, 300, 2500/3500, 5500, 6500

Business Information Technology, Inc., Three Erie Dr., Natick, Mass. 01760

BIT 480, BIT 480F

Clary Corporation, 408 Junipero St., San Gabriel, Calif.

DE-60, DE-600

Collins Radio Co., Dallas, Texas 75207

C-8500

Compagnie Europeene D'Automatisme Electronique, 151 Rue de Billancourt, Boulogne-Billancourt Siene, France.

CAE 510

Digital Computers

- Computer Control Co., Inc., Old Connecticut Path, Framingham, Mass.
DDP-24, DDP-224
- Control Data Corp., 8100 34th Ave., S., Minneapolis 20, Minn.
CDC-160, CDC-160A, CDC-924, CDC-924A, CDC-1604, CDC-1604A, CDC-1606, CDC-1700, CDC-3100, CDC-3150, CDC-3200, CDC-3300, CDC-3400, CDC-3600, CDC-3800, CDC-6400, CDC-6500, CDC-6600, CDC-6800, CDC-8090, CDC-8092, G-15, G-20
- Digital Electronics Inc., Ames Ct., Engineers Hill, Plainview, N.Y. 11803
DIGIAC 3080
- Digital Equipment Corp., Main St., Maynard, Mass.
PDP-1, PDP-4, PDP-5, PDP-6, PDP-7, PDP-8
- Electro-Mechanical Research, Inc., Computer Div., 8001 Bloomington Freeway, Minneapolis, Minn. 55420
ADVANCE 6020, 6040, 6050, 6070
- Electronic Associates, Inc., West Long Branch, N.J. 07764
EAI-640, EAI-8400
- English Electric Computers Ltd., Portland House, Stag Place, London SW1, England
EEC 4-50, EEC 4-70
- Friden, Inc., 2350 Washington St., San Leandro, Calif.
Friden 6010
- Fujitsu Ltd., Furukawa Sogo Bldg., 8, 2-chome, Marunouchi, Chiyoda-ku, Tokyo, Japan
FACOM 212, 222, 231, 241, 230-10, 230-20, 230-30, 230-40, 230-50, 230-60, 270-10, 270-20, 270-30
- General Electric Co., Computer Dept., 13430 N. Black Canyon Highway, Phoenix, Ariz.
GE-115, GE-205, GE-210, GE-215, GE-225, GE-235, GE-415, GE-425, GE-435, GE-625, GE-635, GE Datanet-30
- General Precision, Librascope Group, 808 Western Ave., Glendale 1, Calif.
General Precision LGP-21, LGP-30, L-2010, L-3000, RPC-4000
- H-W Electronics, Inc., 14 Huron Dr., Natick, Mass.
HW-15K
- HRB-Singer, Inc., (subsidiary of the Singer Mfg. Co.), Science Park, State College, Pa.
SEMA 2000, SEMAC
- Honeywell Electronic Data Processing Div., 60 Walnut St., Wellesley Hills 81, Mass.
DATAmatic 1000*, H-120, H-200, H-400, H-800, H-1200, H-1400, H-1800, H-2200, H-4200, H-8200
- Hughes Aircraft Company, Fullerton, Calif.
H-330
- International Business Machines Corp., Data Processing Div., 112 E. Post Rd., White Plains, N.Y.
IBM Ramac 305, IBM 360, IBM 360/20, IBM 650, 704, 705 III, 709, 1130, 1401, 1410, 1440, 1460, 1620, 1620 MODEL II, 1800, 7010, 7030, 7040, 7044, 7070, 7072, 7074, 7080, 7090, 7094 II
- The Marconi Co., Ltd., Marconi House, Chelmsford, Essex, England.
Myriad I/II
- Mathatronics, 241 Crescent St., Waltham, Mass. 02154
Mathatron 4280TD
- Monroe Calculating Machine Co., Inc., 555 Mitchell St., Orange, N.J.
Monrobot XI
- The National Cash Register Co., Main & K Sts., Dayton 9, Ohio
NCR 304, 310, 315-100, 315-RMC-I, 315-RMC-II, 390, 500
- Oki Electric Industry Co., Ltd., 10 Shiba Kotohiracho, Mina Toku, Tokyo, Japan
OKIMINITAC-7000
- Pacific Data Systems, Inc., 644 Young St., Santa Ana, Calif. 92705
PDS-1020
- Philco Corp., Government & Industrial Group, Computer Div., 3900 Welsh Rd., Willow Grove, Pa.
Philco 102, 102M, 1000, 2000-210, 2000-211, 2000-212
- Radio Corp. of America, Electronic Data Processing Div., Front & Cooper Sts., Camden 2, N.J.
RCA 301, 501, 601, 3301, RCA Spectra 70/15, 25, 35, 45, 46, 55
- Raytheon Computer, 2700 So. Fairview St., Santa Ana, Calif. 92704
Raytheon 250, 520
- Scientific Control Corp., 14008 Distribution Way, Dallas, Texas 75234
SCC 650, 655, 660, 670
- Scientific Data Systems, Inc., 1542 Fifteenth St., Santa Monica, Calif.
SDS-910, 920, 930, 940, 9300, Sigma 2, Sigma 5, Sigma 7
- Spear, Inc., 335 Bear Hill Rd., Waltham, Mass. 02154
Micro-LINC-300
- Systems Engineering Labs, Inc., 6901 W. Sunrise Blvd., Ft. Lauderdale, Fla. 33313
SEL 810A, 840A
- UNIVAC Division of Sperry Rand Corp., 1290 Ave. of the Americas, New York 19, N.Y.
Univac I, II, III, 60/120, 490, 1004, 1004 II, 1004 III, 1050, 1103A, 1105, 1107, 1108, 9200, 9300, Univac File Computer I, II, Univac Larc, Univac SS 80/90, SS80/90 II
- Zuse KG, Industriestrasse 19-21, 643 Bad Hersfeld, Germany
Z-23, Z-25, Z-26, Z-31

* Honeywell DATAmatic 1000 listed under DATAmatic

NAME OF COMPUTER	INTERNAL CHARACTERISTICS															
	Solid State?	NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING				
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?
ADVANCE 6020	Y	B	6	4	24	4-32K	core	1.9	3.8	30.4	47.5	90+	1	3	Y	Y
	-- Parity checking on ADVANCE series.															
ADVANCE 6040	Y	B	6	4	24	4-32K	core	1.9	3.8	5.7	9.5	90+	1	3	Y	Y
ADVANCE 6050	Y	B	6	4	24	4-32K	core	1.9	3.8	5.7	9.5	110+	1	3	Y	Y
ADVANCE 6070	Y	B	6	4	24	4-32K	core	1.9	3.8	5.7	9.5	110+	1	3	Y	Y
ALWAC III-E	N	D	4	1.5	8	128 8192	drum drum	1m 9m	1m	17m	17m	90	1	1	Y	N
	-- Bit by bit checking to and from memory, overflow checking.															

Digital Computers

NAME OF COMPUTER	Solid State?	INTERNAL CHARACTERISTICS															
		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING					
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?	
Ambilog 200	Y	B,0	6	5	30	32K	core	2.0	1.0	7.0	9	15	3	V	Y	Y	-- Overflow detection. Overlapping analog-digital operations.
ASI 210	Y	B	6	6	21	8K	core	2.0	6u	50u	52u	67	1	3	Y	S	-- Automatic checking by trapped interrupt; communication between computers without buffering.
ASI 420	Y	B	3	2	42	4-32K	core	2u	6u				1	see note	Y	Y	-- Any memory location can be used as an index register.
ASI 2100	Y	B	6	6	21	4-8K	core	1.1u	4u	30u	44u	67	1	3	Y	S	-- Automatic checking by trapped interrupt; multi-level priority interrupt.
ASI 6020	Y	B	6	6	24	4-8K	core	1.9u	4u	32u	50u	120	1	3	Y	S	-- Memory parity check.
ASI 6040	Y	B	6	6	24	4-8K	core	1.9u	4u	10u	12u	120	1	3	Y	S	-- Memory parity check; optional hardware for floating point.
Bailey 855	Y	B,D	6	4	24	32K 512K	core drum	2u 8m	4u	11u 48u	15u 71u	75	1	3	Y	N	
BIT 480	Y	B,D,0	8	V	V	1-65K	core	4u	28u	60u	84u	58	2		Y	N	-- Parity checking.
BIT 480F	Y	B,D,0	8	V	V	1-65K	core	.9u	8u	40u	66u	58	2		Y	N	-- Parity checking.
BR-133	Y	B			15	8-16K	core	2u	4u	19u	19u		6	Y	N		-- Parity check; variable length multiply and divide.
Burroughs E-103	N	D			12	220	drum	10m	50m			32	1	2	N	N	
Burroughs 205	N	D	4	2	10	80 4000	FBD drum	.85m 8.5m	1.7m 17m	10.8m	14m	64	1	1	N	N	-- Checks for: forbidden combination, central timing, drum revolution, overflow.
Burroughs 220	N	D	4	2	10	2-10K	core	10u	185u	2.9m	3.9m	96	1	1	N	Y	-- Running time clock. Checks for forbidden combination and overflow. Partial word operations.
Burroughs 200 Series	Y	D	7	7	V	4.8K 9.6K	core	10u	740u	2.25m	6.05m	27	3	0	N	N	-- Add time: 5 digits + 5 digits; mult. time: 5 digits x 2 digits; div. time: 5 digits ÷ 2 digits. Numerous variations of the 14 instructions. Multiprocessing.
Burroughs 300	Y	D	8	12	96	19.2K	core	6u	.69m	5.58m	3.55m	81	3		N	N	
Burroughs 2500/3500	Y	D	8	2	16	10-500K	core	1u	31.5u	114u	92u	95	3	3	Y	Y	-- Parity and cycle redundantly. Character checking.
Burroughs 5000	Y	0	3	2	13	4-32K 32-65K	core drum	6u 8.5m	10u	37u	63u	115	V	0	Y	Y	-- Binary, octal, decimal. Parity check. Multiprocessing with single processor; parallel processing with dual processors. Comprehensive interrupt system. Automatic memory exchange and input-output exchange. Simultaneous parallel memory access with multiple modules. Single format fixed and floating point representation.
Burroughs 5500	Y	B	6	8	48	32K	core	4u	1m	32m	38m	137	0	Y	Y		-- Parity, memory protection. Stack oriented.
Burroughs 6500	Y	B	6	8	48	106K	thin film	600n	.4m	5u			0	Y	Y		-- Parity with each word, assessing code, memory protect.
CAE 510	Y	B	1	6	18	8-32K 192K	core drum	6u 833u	12u	66u	66u	300+	1	64	Y	Y	-- Parity check; variable length multiply and divide; 18 levels interrupt priority system; flexible micro-commands built-in logic.
C-8500	Y	B	8	4	32	65K	core	520n	4.5u	363u	512u	93	1	3	Y	Y	-- Parity to and from memory, invalid Op-code, invalid address.

Digital Computers

NAME OF COMPUTER	INTERNAL CHARACTERISTICS																
	Solid State?		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING				
			Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?
CDC G-15	N	D	4	2	7	2K	drum	14.5m	14.5m	.54m	.54m	8m	100	1	N	N	N
-- Repeat command, indexing by means of interpretive system only.																	
CDC G-20	Y	0	8	8	32	16-32K	core	6u	15u	30u	70u	105	1	63	Y	Y	Y
-- Overflow, parity, illegal address checks. Repeat command for add, subtract, test and logic.																	
CDC-160	Y	B	6	6	12	4K	core	2.2u	6.4u-	19.2u		65	1	0	Y	N	N
-- Relative and direct addressing; multiply and divide are programmed.																	
CDC-160A	Y	B	6	6	12	8-32K 32-64K	core drum	22u	6.4 - 17m	19.2u		134	1	N	Y	N	N
-- Relative and direct addressing. Parity check on I/O transfers. Automatic check on power failure.																	
CDC-160G	Y	B	6	6	12	8-131K	core	.7u	2.7u	7u	8.5u	310	1	62	Y	N	N
CDC-924	Y	B	6	6	24	8-32K	core	5.3u	9.9u	27.9 - 47.1u	38u	64	1	6	Y	N	N
-- Parity checking on I/O transfers. Logical and masking operations, search instructions, parallel mode of operation, real time clock, program interrupt.																	
CDC-924A	-- Same as 924 except: additional mask interrupt feature, faster data transfer rates (I/O).																
CDC-1604	Y	B	6	6	48	8-32K	core	4.8u	7.2u	25.2 - 63.6u	65.2u	62	1	6	Y	Y	Y
-- Parity check on I/O transfers. 2 instructions per word. Real-time clock. Program interrupt.																	
CDC-1604A	-- Same as 1604 except: additional mask interrupt feature, faster data transfer rates (I/O).																
CDC-1700	Y	B	8	2	16	4-32K	core	1.1u	2.2u	7u	9u	72	1	2	Y	N	N
-- Memory protect parity.																	
CDC-3100	Y	B	6	6	24	4-32K	core	1u	3.5u	10.6 - 14.8u	14.5u	120	1	3	Y	Y	Y
CDC-3150	Y	B	6	4	24	8-32K	core	1.75u	3.5m	12.7m	14.5m	164	1	3	Y	Y	Y
-- Memory protection parity.																	
CDC-3200	Y	B	3	6	24	64 8-32K	transistor core	.5u	1.25u- .7u	2.5u	8.75- 12u	12u	100	1	3	Y	Y
-- Microprogramming available in character handling. Complete parity check - one parity bit associated with each 6 bit byte of 24 bit word. BCD arithmetic, character addressing, priority interrupts.																	
CDC-3300	Y	B	6	4	24	8-262K	core	1.25u	1.375u	8.375u	10.25u	201	1	3	Y	Y	Y
-- Multiprogramming module.																	
CDC-3400	Y	B	6	6	48	16-32K	core	.7u	2.6u	22u	22u	76	1	6	Y	Y	Y
-- Parity checking on I/O transfers and storage.																	
CDC-3600	Y	B	6	6	48	32-262K	core	.7u	2u	2.12- 6.5u	2.12- 14.9u	86	1	6	Y	Y	Y
-- Parity checking on I/O transfers and storage parity. Microprogramming option available. Storage expandable in 16K modules to 262K. Additional data channels to a total of 32 may be added.																	
CDC-3800	Y	B	6	6	48	32-262K	core	.4u	1.3u	5.25u	11.7u	95	1	6	Y	Y	Y
CDC-6400	Y	B	6	10	60	32-131K	core	.5u	1.1u	5.7u	5.6u	73	1	8	N	Y	Y
CDC-6500	Y	B	6	10	60	65-131K	core	.5u	1.1u	5.7u	5.6u	73	1	16	N	Y	Y
-- Memory protection. 2 central processors, 10 peripheral processors.																	
CDC-6600	Y	B	6	10	60	65-131K	core	.5u	.4u	1u	2.9u	73	1	8	N	Y	Y
-- Indirect addressing only in peripheral processor. Checking on I/O equipment and transfer to and from computer. 10 functional units, 32-12 bit stack with look-ahead and -back.																	
CDC-6800	Y	B	3	6	60	32-131K	core	.125u	.1u	.25u	.75u	68	3	7	Y	Y	Y
CDC-8090	Y	B	3	6	12	4-32K	core	6.4u	6.4- 19.2u			134	1	0	Y	N	N
-- 3 I/O operation can. Relative (forward and backward) and direct microprogramming.																	

Digital Computers

NAME OF COMPUTER	Solid State?	INTERNAL CHARACTERISTICS															
		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING					
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?	
CDC-8092	Y	B	6	6	12	2-4K 2048-4096	core	4u	8-12u			42	1	Y	N		
-- Relative addressing. One buffer I/O channel and one normal channel are standard equipment. All 160A I/O equipment can be used.																	
DATAmatic 1000	N	D	4	6	48	2K	core	12u	115u			69	3	N	N		
DIGIAC 3080	Y	B	6	4	24	4K	core	4m	500m	5m	5m		1	N	Y		
-- Floating point must be programmed.																	
DDP-24	Y	B	4	6	24	4-32K	core	3u	10u	30u	32u	59	1	1-3	Y	N	
-- Floating point on software only. Parity on I/O only. Interrupt standard, with specific memory destination. Eight level interrupt priority system, and interrupt of cascaded indirect addressed commands standard.																	
DDP-224	Y	B	4			4-65K	core	.8u	3.8	6.45	17.0	72	1	1-3	Y		
-- Hardware optional. Parity on I/O. Arithmetic overflow checks. Mul/Div commands. Systems options for multiprocessor systems. Access distributor unit, time multiplex unit, fully buffered channels, memory lockout, processors.																	
DE-60	Y	D	4		18	32-160	drum	7.5m	55m	130m	112m	45	5	Y	N	N	
-- Overflow detection. Automatic decimal point alignment. Program trace routine built into hardware. External interchangeable function generators.																	
DE-600	Y	D	4	18	72	64	drum	6m	46m	61-136m	62-416m	180	15		N	N	
-- Machine may be used directly without programs. Desk size.																	
EAI-640	Y	B	8	2	16	4-32K	core	1.65u	3.3u	18.15u	18.975u	64	1	1	Y	Y	
-- Overflow and underflow checking.																	
EAI-8400	Y	B	8	4	32	65K	core	1u	5.28	8.06	11.39	750	1	7	Y	Y	
-- Operating time for add, multiply, divide is floating point. Parity checking.																	
EEC 4-50	Y	D	8	4	32	128	core	.3u	15.6u	72.8u	102u	144	2	15	Y	Y	
-- 32 interrupts. All instruction by microprogramming.																	
EEC 4-70	Y	D	8	4	32	72	core	.3u	3.62u		8u	13.7u	144	2	15	Y	Y
-- 32 interrupts. All instructions by microprogramming.																	
FACOM 212					13	56K		150m	4500m				0	N	N		
FACOM 222					13	10K		10m	160m				99	N	Y		
FACOM 230-10			8		V	8	core	2.2m	150m					N	N		
FACOM 230-20					V	65K	core	1.8m	78m				2	Y	N		
FACOM 230-30					V	65K	core	2.2m	58m				2	Y	Y		
FACOM 230-40					V	123K	core	.75m	19.4m					Y	Y		
FACOM 230-50		B			42	65K	core	2.2m	4.4m				7	Y	Y		
FACOM 230-60		B			42	128K	core	.92m	1.15m				7	Y	Y		
FACOM 231					V	32K		15m	495m				0	Y	N		
FACOM 241		D			8	9K		10m	120m				8	N	N		
FACOM 270-10		B			1.7	4K	core	2.2m	200m				3	N	N		
FACOM 270-20		B			18	32K 128K	core drum	2.4m	4.8m				3	Y	N		
FACOM 270-30		B			18	65K 256K	core drum	.75m	1.5m				3	Y	N		
Friden 6010	Y	B	4		64	15	core	100u	1.3m	50m		242	1	N	N		
GE-115	Y	B,D	4	1	8	4-16K	core	6.5m	112m			39	2	N	N	Y	

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NAME OF COMPUTER	Solid State?	INTERNAL CHARACTERISTICS															
		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING					
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?	
GE-205	Y	B	6	6	20	4-16K	core	36u	72u	198u	504u	300+	1	96	N	Y	-- Double precision arithmetic. Floating point arithmetic optional. 4-bit decimal add and subtract; 3 digits per word. Multiple read-write-compute. MICR document sorter-reader available. Disc storage unit with 199-ms access time; data communications equipment available.
GE-210	Y	B	4	3	28	4-8K	core	32u	64u	640u	1760u	120	1	0	N	N	
GE-215	Y	B	6	3	18	4-16K	core	36u	72u	315u	513u	300+	1	3	Y	Y	
GE-225	Y	B	6	3	18	4-16K	core	18u	36u	288u	495u	300+	1	3	Y	Y	
GE-235	Y	B	6	3	18	4-16K	core	6u	12u	84u	165u	300+	1	128	Y	Y	
GE-415	Y	D	6	6	24	4-32K	core	5.8u	17.4u	390u	646u	200+	1-2	6+	Y	Y	-- Any-level indexing by any memory word; scatter/gather; automatic program interrupt; relocatable accumulator. Multiple read-write-compute. Floating point arithmetic available. MICR document sorter-reader available. Disc storage units available. Direct-access data communications provisions optional.
GE-425	Y	D	6	6	24	8-32K	core	5.1u	15.9u	362u	598u	200+	1-2	6+	Y	Y	-- See GE-415
GE-435	Y	D	6	6	24	16-32K	core	2.7u	8.8u	250u	450u	200+	1-2	6+	Y	Y	-- See GE-415
GE-625	Y	B	6	6	36	32-262K	core	2u	3u	6u	14.5u	170	1	8+	Y	Y	-- All system memory is directly addressable by processors, I/O controllers, and real-time devices. Total mission compatibility for commercial, aerospace and ground-based military computers.
GE-635	Y	B	6	6	36	32-262K	core	1u	2.7u	5.9u	14.2u	170	1	8+	Y	Y	-- See GE-625
GE DATANET-30	Y	B	6	3	18	16K	core	6.94u	13.88u			76	1	3	Y	N	-- Interval times for checking. Multiple indexing with indirect addressing.
General Precision LGP-21	Y	B	6	4	32	4K	disc	51m	.39m	25m	26u	23	1	N	N	N	-- Oscilloscope display of registers.
General Precision LGP-30	N	B	4	6	32	4K	drum	8.5m	.25m	17m	17m	16	1	0	N	N	-- Interlacing of words on drum reduces memory access time. No automatic checking. Oscilloscope display of registers. Programmed subroutines.
General Precision L-2010	Y	B				4K	disc	5m - 7.8u	78.1m	2.42m-	2.5m-	32	1		N	N	-- Overflow, multiplication checking, parity check on paper tape input.
General Precision L-3000	Y	B	6	6	48	4-64K	core	2.5u	16u	23u	36u	97	1	11	Y	Y	-- Parity checking throughout system, verified arithmetic unit, dual recording optional in files. Breakdown control, program branching via flip-flops.
General Precision RPC-4000	Y	B	6	4	32	8K	drum	8.5m	.25m	17m	17m	32	1	1	N	N	-- Parity checking of input.
H-120	Y	B	4	1	4	32K	core	1.5u	60u	3.7m	3.1m	38	2	6	Y	N	-- Multiply, divide programmed. Up to 3 read-write channels.
H-200	Y	B	4	1	4	65K	core	1u	42u	413u	213u	40	2	15	Y	N	-- Floating point simulated by software. Use variant character to specialize operation.
H-330	Y	B			48	16-131K	core	1.8u	1.8u				1	24	Y	Y	-- Instruction look-ahead and overlapped core banks allow increased internal speed. Word size may be 24, 30, 36 or 48 bits. 24 decrement registers available.
H-400	Y	B	4	8	48	4K	core	9.25m	102m	1.3m	1.8	66	3	3	N	N	-- Orthrotronic control. Automatic hardware program interrupt.
H-800	Y	B	4	8	48	32K	core	3u	24u	162u	132u	60	3	8	Y	Y	-- 8 multiple channel programming. 16 I/O simultaneous operations.

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NAME OF COMPUTER	Solid State?	INTERNAL CHARACTERISTICS														
		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING				
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?
H-1200	Y	B	4	1	4	131K	core	.75u	30u	310u	160u	58	2	30	Y	Y
-- 4 read-write channels.																
H-1400	Y	B	4	8	48	32K	core	6.5u	78u	.9m	1.2m	76	3	3	N	Y
H-1800	Y	B	4	6	48	65K	core	1u	8u	54u	44u	60	3	8	Y	Y
-- Up to eight programs can be processed simultaneously.																
H-2200	Y	B	4	1	4	262K	core	.5u	22u	202u	131u	58	2	30	Y	Y
-- Up to 8 read-write channels.																
H-4200	Y	B	4	1	4	524K	core	94n	13u	82u	56u	58	2	30	Y	Y
-- Up to 16 read-write channels.																
H-8200	Y	B	4	8	48	131K	core	250n	2.48u	5u	14u	118	V	64	Y	Y
-- Variant character to specialize operations. Arithmetic, op code, parity, and barricade violation check. Up to 48 read-write channels.																
HW-15K	Y	0	6	6	24	4K	drum	8.5m	650u	500u	800u	12	1	0	N	S
-- Multiply, divide, floating point programmed. Parity checking on words read from drum. Words interlaced on drum.																
IBM Ramac 305	N	B	6	1	V	2000	drum	10m	50m	V	V	V	2	0	N	N
5-20KK disk 600m -- Parity check. Variable word length.																
IBM System/360	Y	B	4	2	2	256-1048K	core	750n	.80u	2.8u	5.7u	142	0-2	16	Y	Y
8-65K core 1.5u 30u 235u 300u -- Parity checks at 8 points, arithmetic in parallel and checked; fault locating technique and diagnostics. Multiplex and selector channels employ separate logic facilities; storage protection, 4 floating point registers, separate fixed point, decimal and floating point logic; double density packing of decimal digits; automatic program switching with interrupt logic, I/O switching.																
IBM 360/20	Y	B	4	2	2	4-16K	core	3.6u	209u	3m	4m	36	0-2	8	Y	N
IBM 650	N	D	5	2	10	60	core	.1m	.7m			100	1	3	N	Y
1-4K drum 2.4m .7m 7.3m 11m 6-12KK disk 425m digits -- Multiply and divide timing refer to 5 digit fields. 60 core words and disk memory are optional. Disk access can be overlapped. Operation code, bi-quinary, and validity checks. Table look up.																
IBM 704	N	B	3	2	36	4-32K	core	12u	24u	240u	240u	91	1	3	N	Y
-- Overflow, underflow, transfer trapping mode, divide, floating point trap checks.																
IBM 705 III	N	D	7	1	V	20-80K	core	8u	.087m	.606m	3.35m	60	1	0	Y	N
60K drum -- Internal parity check.																
IBM 709	N	B	3	2	36	4-32K	core	12u	24u	24 - 240u	36 - 240u	196	1	3	Y	Y
-- Overflow, underflow, divide, floating point trap checks. Multiple channel programming, sense indicator register.																
IBM 1130	Y	B			16	4-32K	core	3.6u	8u	25.7u	76u	35	1	3	Y	N
8-32K core 2.2u 4.8u 15.7u 46u -- Parity check.																
IBM 1401	Y	D	7	1	1	1.4 - 16K	core	11.5u	230u	2.1m	2.6m	43	0-2	3	N	N
10-20KK disk 550m 2-15KK disk 150m -- Parity, character code and address validity checks. Multiply divide instructions are optional. Easily adaptable to operate with the 7000 series.																
IBM 1410	Y	D	7	1	1	10-80K	core	4.5u	110u	1.2m	1.3m	114	0-2	15	N	N
10-280KK disk 160m 2-15K disk 150m -- Code and address validity checks, parity check. Dual channel, priority feature, overlap, table look up, synchronization.																

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		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING				
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?
IBM 1440	Y	D	7	1	1	2-16K	core	11.1u	120u	1.3m	1.5m	43	0-2	3	N	N
-- Parity, operation code, validity.																
IBM 1460	Y	D	7	1	1	8-16K 2-15K	core disk	6u 150m	108u	1.1m	1.4m	43	0-2	3	N	N
-- Parity, character code and address validity checks. Multiple printer, wide variety of tape drives, paper tape I/O, tele-processing capabilities.																
IBM 1620	Y	D	6	2	V	20-60K	core	20u	560u	4.96m	16.86m	32	2	0	Y	Y
-- Parity check. 5 additional instructions optional. Immediate addressing, branch transmit.																
IBM 1620 MODEL II	Y	D	6	2	V	20-60K 2-8KK	core disk	10u 250m	140u	1.21m	3.23m	42	2	0	Y	Y
-- Parity check.																
IBM 1800	Y	B	16		32	4-32K	core	2-4m	4.5u	14.2u	42.2u	27	1	3	Y	N
-- Double precision standard.																
IBM 7010	Y	D	7	1	1	40-100K	core	2.4u	35.2u	260u	V	114	0-2	15	N	Y
-- Parity checking. One or two channels, process overlap, priority interrupt.																
IBM 7030 (STRETCH)	Y	B	4	6	64	16-262K	core	2.2u	1.5u				1	16	Y	Y
-- Instruction look ahead and overlapped core banks allow increased internal speed.																
IBM 7040	Y	B	4	6	36	4-32K 28-280KK	core disk	8.0u 160m	16u	3.2 - 48u	18.5 - 61u	73	1	3	Y	Y
-- Optional additional instructions: 42. Memory parity, I/O parity, floating point trapping (overflow, underflow). Multiple channel -- memory protection, clock interval timer, double precision floating point.																
IBM 7044	Y	B	4	6	36	8-32K 28-280KK	core disk	2.5u 160m	5u	22.5 - 37.5u	7.5 - 50u	73	1	3	Y	Y
-- Optional additional machine instructions: 42. Memory and I/O parity, floating point trapping (overflow, underflow). Multiple channel -- memory protection, clock-interval timer, double precision floating point.																
IBM 7070	Y	D	5	2	10	5-10K 28-430KK	core disk	6u 160m	72u	924u	792 - 984u	200	1	99	Y	Y
-- Divide time refers to 5 digit quotient. Fully checked adder, transfer check. Priority processing. Zero suppression. Scatter read-write.																
IBM 7072	Y	D	5	2	10	5-30K	core	6u	12u	64u	74u	200	1	99	Y	Y
-- See remarks under IBM 7070.																
IBM 7074	Y	D	5	2	10	5-30K 28-430KK	core disk	4u 160m	10u	56u	70u	200	1	99	Y	Y
-- See remarks under IBM 7070.																
IBM 7080	Y	D	7	1	V	1K 80-160K 28-280KK	core core disk	1u 2u 160m	11u	100u	253u	106	1	0	Y	N
-- Parity checking.																
IBM 7090	Y	B	3	2	36	32K 28-280KK 1-10KK	core disk drum	2.18u 160m 8.6m	4.36u	4.36 - 30.52u	4.36 - 30.52u	227	1	3	Y	Y
-- Floating point trap, transfer trapping, overflow, underflow, and divide checks. Multiple channel.																
IBM 7094 II	Y	B	3	2	36	32K 28-280KK 1-10KK	core disk drum	1.4u 160m 8.6m	2.8u	2.8 - 5.6u	2.8 - 9.8u	268	1	7	Y	Y
-- Floating point, transfer trapping, I/O parity, divide checks. Multiple channel, double precision floating point, instruction overlap.																
Mathatron 4280TD	Y	D	4	12	48	984	core	4m				17	1	1777 ₈	N	Y
-- Invalid number print detector. Direct algebraic logic. E3777₈																
Micro-LINC-300	Y	0	12	1	12	4-32K	core	1u	2u	16u	100u	61	64	Y	Y	
-- Multiply wired, divide programmed.																

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		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING				
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?
Monrobot XI	Y	B	1	6	32	1-2K	drum	6m	3m	28m	7-2n	27	1	0	N	Y
-- Two instructions per word. Parity. Tested by program.																
Myriad I/II	Y	B			24	32K	core	.4u	2.5u	19.8u	27.3u	52	1	1	N	Y
-- Input/Output by common highway. Autonomous access direct to core storage available.																
NCR 304	Y	D	6	6	60	2.4-4.8K	core	60u	600u	2820u	2940u	68	3	30	N	Y
-- Parity and echo checking. Instructions are 2 words long. A single-address microprogrammed instruction system is included. Off-line copy permits tape system to copy the 'father' tape offline until account being searched is found. Numbers may be packed and unpacked by command. Self-linking. Magnetic tape is gapless, with automatic repositioning.																
NCR 310	Y	0	4	6	12	4K	core	6.4u	12.8u			62	1	0	Y	N
-- Software package. Computer is a version of the CDC-160. Multiply and divide must be programmed.																
NCR 315	Y	D	4	6	12	10-80K	core	6u	42u	97u	222u	142	1	32	N	N
-- Parity and echo checking. Demand interrupt permits priority interrupt of processor by peripherals.																
NCR 315-100	Y	D	4	2	12	40K	core	6u	42u	393u	1451u	124	1-2	64	N	Y
-- Parity check, valid command check, peripheral checks.																
NCR 315-RMC-I	Y	D	4	2	12	80K	rod	800n	6.4u	52.4u	166.8u	178	1-2	64	N	Y
-- Dual programming capability with memory barrier, real time interrupt.																
NCR 315-RMC-II	Y	D	4	2	12	80K	rod	800n	7.2u	53.2u	167.6u	200	1-2	128	Y	Y
-- Parity check, valid command check, peripheral check, program protection check, privileged command check. Program interval timer, individual program protection, hardware I/O trapping.																
NCR 390	Y	D	4		48	200	core	107u	11m	75m+	119m+	20	3	0	N	N
-- There are 10 "string of address" type instructions, e.g., "sum A through D". Automatic address incrementing.																
NCR 500	Y	D	4	8	24	400	core	22.5u	99m	125m	190m	50	4	3	N	N
OKIMINITAC-7000	Y	B	8	3	24	65	core	2.8u	5.6u	44.8u	96u	50	1	2	Y	Y
-- Parity check. Double precision circuit, double index modification.																
PDP-1	Y	B	4	6	18	4-65K	core	5u	10u	20u	30u	28	1	0	N	N
-- Microprogramming. Optional 16 channel sequence break, program resumes according to interrupting channel. Built-in marginal checking facilities.																
PDP-4	Y	B	6	4	18	4-32K	core	8u	16u	100u	184u	16	1	N	Y	Y
-- Multiply and divide operations programmed. Floating point programmed. Built-in marginal voltage checking, auto-indexing.																
PDP-5	Y	B	4	6	12	1-32K	core	6u	18u	150u	162u	8	1	8	Y	N
-- Built-in marginal voltage checking (with power supply). Auto-indexing: when locations 10-17 are indirectly addressed, contents are indexed by one, then used as effective address.																
PDP-6	Y	B	any	any	any	16-262K	core	4.3u	16.1u	12.4u	363	1	15	Y	Y	
-- Sum checking on I/O transfers. Parity on tape and drum transfers. Priority interrupt, variable size byte, block move, list processing instruction.																
PDP-7	Y	B	4	6	18	4-32K	core	0.45u	3.5u	6.1u	9.0u	8	1	8	Y	S
PDP-8	Y	B	4	6	12	4-32K	core	1.6u	32u	15u	30u	31	1	8	Y	S
PDS-1020	Y	D	6	2	16	4K	line	1.5m	3m	12m	12m	52	1	1	N	N
-- Parity on each word.																
Philco 102	Y	B	8	4	32	65K	core	.7u	4.6u			107	2	7	Y	N
-- Automatic interrupt. Data parity at all interfaces. Both data and address parity at core.																
Philco 102M	Y	B	8	4	32	65K	core	.7u	4.6u	15u	28u	127	2	7	Y	Y
-- Data parity at all interfaces. Both data and address parity at core.																

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		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING				
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?
Philco 1000	Y	B,D	6	6	6	4-32K	core	3u	80u	700u	2000u	90	1-4	4	N	N
-- Parity checking to and from memory. Hardware insts. for BTD and DTB, BIN to OCT and OCT to BIN, BIN and DEC arithmetic available. Can communicate with a Philco 2000 by mem. to mem. transfer, all tapes in common, and through the real-time system. Asynchronous logic. Variable or fixed word length. Modular building block concept.																
Philco 2000-210	Y	D	6	1	8	8-32K 32K	core drum	4u	14.8u	69.9u	73.8u	225	1	8	N	Y
-- Repeat modes, asynchronous operation, automatic interrupt.																
Philco 2000-211	Y	D	6	1	8	8-32K 32K	core core	4u	4.1u	34.9u	36.7u	225	1	8	N	Y
-- Transmission checking. Repeat modes, asynchronous operation, automatic interrupt.																
Philco 2000-212	Y	D	6	1	8	32-65K	core	7u	.55u	4.3u	9.8u	250	1	8	Y	Y
-- Transmission parity checking. Four way processing, four repeat modes, automatic interrupt, asynchronous parallel memory access. Look ahead. 7 instructions may be processed simultaneously. High-density drum, high-speed disc file systems and real-time systems may be included																
RCA 301	Y	D	7	7	49	10-40K	core	7u	273u	8.4m	18m	41	2	3	Y	Y
-- Multiply and divide are programmed. Scientific model of 301 processor provides high speed fixed or floating point arithmetic operations.																
RCA 501	Y	B,D,0	7	7	7	16-262K	core	12-15u	384u	12.43m	3.45m	49	2	7	N	N
-- Indirect addressing limited to scatter and gather operations.																
RCA 601	Y	B	3-8	1	8-16	8-32K	core	.9-1.5u	6u	70u	214u	121	2	8	Y	Y
-- Variable length instructions are 1/2 word, or 2-1/2 words long. Multiple program processing and memory overlap. Double precision arithmetic.																
RCA 3301	Y	B,D	6	6	6	200 40-160K	core core	214n 1.5u	40m 12u	.85m 26u	1.65m 40u	61	2	3	Y	Y
-- Parity checking to/from core, I/O parity. Fully compatible with RCA 301; 4-way simultaneous operations, real-time interrupt, multi-program operation, communications up to 160 lines, code translate instruction, memory to memory between 3301's or 3301 and 301.																
RCA Spectra 70/15	Y	B,D	4	1	8	4-8K	core	2m	56m			25	2		N	N
-- Parity checking.																
RCA Spectra 70/25	Y	B,D	4	1	8	16-65K	core	1.5u	33u	282u	235.5u	32	2		N	N
-- Parity checking. Automatic interrupt.																
RCA Spectra 70/35	Y	B	8	1	8	16-65K	core	1.44u	47.6u	223.3u	254.4u	144	2	16	N	Y
-- Parity, addressing errors, arithmetic errors. 32 automatic interrupt conditions.																
RCA Spectra 70/45	Y	B,D	4	1	8	16-262K	core	1.44u	22.02u	97.28u	124.4u	144	2		N	Y
-- Parity checking. Automatic interrupt for error detection correction.																
RCA Spectra 70/46	Y	B	8	1	8	262K	core	1.44u	22.5u	99.11u	124.97u	144	2	16	Y	Y
-- Parity, addressing errors, paging errors, arithmetic errors.																
RCA Spectra 70/55	Y	B,D	4	1	8	65-524K	core	.84u	7.74u	19.74u	28.14u	144	2	16	N	Y
-- Automatic interrupt for error recovery and detection. Elapse time clock.																
Raytheon 250	Y	B	1		22	16 16K	delay delay	.09m 1.5m	12u 24u	276u 276u	252u 252u	59	1	1	N	Y
-- Parity checking. Memory consists of magnetostrictive delay lines.																
Raytheon 520	Y	B,D,0	6		24+	256-4096 parity 4-32K	biax core	2u 2u	1u	3u	12.5u	64	1	7+	Y	Y
-- Instructions comprising a command set are completely microprogrammed. Memory parity, I/O parity, automatic and/or programmed interrupt.																
SCC-650	Y	B	8	2	12	4-32K	core	1m	4u	18u	18u	25	1	1	Y	N
-- Breakpoint/entry switch register.																
SCC-655	Y	B	6	4	24	4-32K	core	1m	3.5u	14u	15.75u	35	1	1	Y	N
-- Breakpoint/entry, keyboard lock out, protected memory area.																

Digital Computers

NAME OF COMPUTER	Solid State?	INTERNAL CHARACTERISTICS															
		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING					
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?	
SCC-660	Y	B	6	4	24	4-32K	core	1m	3.5u	14u	15.75u	47	1	1	Y	N	
-- Breakpoint/entry keyboard lock out, protected memory area.																	
SCC-670	Y	B	6	4	24	4-32K	core	1m	3.5u	14u	15.75u	60	1	1	Y	N	
SDS-910	Y	B	4	6	24	2-16K	core	8u	16u	248u	500u	42	1	1	Y	N	
-- Multiply and divide programmed. Memory parity check, input/output parity.																	
SDS-920	Y	B	4	6	24	4-16K	core	8u	16u	32u	224u	66	1	1	Y	N	
-- Has microprogrammed register. Memory parity check, input/output parity.																	
SDS-930	Y	B	6	4	24	33K	core	1.75u	3.5u	7u	17.5u	94	1	1	Y	Y	
-- Parity check on memory and I/O operations. Arithmetic overflow.																	
SDS-940	Y	B	6	4	24	33K	core	1.75u	3.5u	7u	17.5u	94	1	1	Y	Y	
-- Same as SDS-930.																	
SDS-9300	Y	B	6	4	24	33K	core	1.75u	1.75u	7u	15.75u	110	1	3	Y	Y	
-- See SDS-930.																	
SDS Sigma 2	Y	B	8	2	16	16K	core	900n	2.25u	10.35u	10.8u	37	V	2	Y	N	
-- Memory parity, I/O parity, I/O rate error, arithmetic checking. Up to 20 automatic time-multiplexed data-chaining I/O channels.																	
SDS Sigma 5	Y	B	8	4	32	131K	core	850n	2u	8.1u	15.9u	89	V	7	-	Y	Y
112																	
SDS Sigma 7	Y	B	8	4	32	131K	core	850n	1.8u	4.9u	12.7u	106	V	7	-	Y	Y
224																	
-- Up to 237 priority interrupt levels. Up to 160 simultaneously operating peripherals.																	
SEL-810A	Y	B	8	2	16	4-32K	core	600u	3.5u	7u	10.5u	58	1	1	Y	Y	
-- Parity checking. 96 levels of priority.																	
SEL-840A	Y	B	8	3	24	4-32K	core	600u	3.5u	10.5u	26.25u	85	1	3	Y	Y	
-- 23 additional instructions in extended arithmetic unit.																	
SEMA 2000	Y	D	4	8	40	2-20K	drum	8.5m	350u	.5-50m		30	1	1	N	N	
-- Odd parity checking on read and write, checks synchronization of drums, checks on performance of all instructions. Negative, zero and flag selectors, address modification features.																	
SEMAC	Y	D	4	8	15	3-1/2 10K	trans. drum	1m 8.5m	340m 8.5m	170m 170m	170m 170m	64	1		N	N	
-- Instructions defined by plugboard wiring. Parity, drum synchronization.																	
Univac I	N	D	7	1	11	1000	delay	242u	525u	2.15m	3.95m	45	1	0	N	N	
-- Duplicate arithmetic and comparison circuitry, parity check.																	
Univac II	N	D	7	1	12	2000	core	40u	200u	1.9m	3.7m	47	1	0	N	N	
-- Parity check, some duplicate circuits.																	
Univac III	Y	D	4	1.5	6	8-32K	core	4u	4u	76u	68u	67	1	15	Y	Y	
-- Field selection, automatic checking, interrupt, multiple word operands, scatter read, gather write, addressable clock. Concurrent operation of 8 functionally independent programs.																	
Univac 490	Y	B	1	6	30	16-32K 78KK	core drum	4.8u 17m	6.7u	29.76u	69u	62	1	8	N	N	
-- Illegal function and millisecond timeout checks. Concurrent program operation via automatic interrupts. Jump designators and operand designators. All peripherals have checking.																	
Univac 60/120	N	Biquin-ary	6	6	V	60-120 digits	vacuum		10m	50m	50m	10	3		N	Y	
-- Automatic checking. Ability to read and punch in same card.																	
Univac 1004	Y	B			V	961 char.	core	8u	160u	4880u	7668u	62	2		N	N	
-- Light-dark reader check; weighted hole count punch check.																	

Digital Computers

NAME OF COMPUTER	Solid State?	INTERNAL CHARACTERISTICS																	
		NUMBER SYSTEM				MEMORY			TIMING			MACHINE PROGRAMMING							
		Number Base	Bits/Digit	Digits/Alphabetic	Word Length	Number of Words	Type	Access Time	Add Time	Multiply Time	Divide Time	Number of Instr.	Addresses/Instr.	No. Index Registers	Indirect Addressing?	Floating Point?			
Univac 1004-II	Y	B			961 char.								62						
Univac 1004-III	Y	B		V	961 char.	core	8u	160u	4880u	7668u		62	2	N	N				
Univac 1050	Y	B,D	6	6	5	8-65K 4-32K	core core	2u 4.5u	63u 31u	196u 42u	266u 93u	47	1	7	N	N			
																		-- Odd parity checking. Automatic feature makes possible simultaneous processing of multiple applications. Eight channels, concurrent peripheral programs.	
Univac 1103A	N	B	1	6	36	4-12K 16-32K	core drum	8u 17m	60u	410u	490u	50	2	0	N	Y			
																			-- Parity, overflow, lockout, main control checks. Interrupt feature and repeat command.
Univac 1105	N	B	1	6	36	8-12K 16-32K	core drum	8u 17m	60u	410u	490u	50	2	0	N	Y			
																			-- Parity, overflow, lockout checking. Interrupt feature and repeat command.
Univac 1107	Y	B	1	6	36	128 65K	film core	.3u 1.8u	4u	12u	31.8u		115	1	15	Y	Y		
																			-- Overflow check. Index addressing cascadable, 128 loop count registers, automatic incrementation.
Univac 1108	Y	B	6	6	36	26K	core	375n	.75n	2.37n	10.125n		150	1	15	Y	Y		
																			-- Parity check, memory transfers, multiprocessing.
Univac 9200	Y	B	8	1	8	8-16K	wire	1.2u	104u	2.12m	2.61m		35	2	16	N	N		
																			-- Parity checking on all data movement.
Univac 9300	Y	B	8	1	8	8-32K	wire	600n	52u	1m	1.3m		35	2	16	N	N		
																			-- See Univac 9200.
Univac File Computer I	N	D	7	1	12	20 1020	core drum	.9m 3.1m	8.6m	23.8m	27.5m		23	3	0	N	N		
																			-- Additional 19 plugboard instructions and 63 in/out instructions. Components partially solid state.
Univac File Computer II	N	D	7	1	12	2000	core	.63u	3.4u				23	3	0	N	N		
																			-- See remarks under Univac File Computer I.
Univac Larc	Y	D	5	2	12	100 10-97K 6KK	core core drums	1u 4u 68m	4u	8u	28u		76	1	99	Y	Y		
																			-- "Processor" controls in/out and information transfer. 76 summary orders from computer to processor, 88 processor instructions, including in/out. Automatic checking and 20% duplicate circuits. All single-bit errors detected. Look-ahead permits fast add. 1, 2, or 3 addresses per instruction.
Univac SS 80/90	Y	D	4	1.5	10	200-1600 2.4-7K	FBD drum	425u 1.7m	510u	2.2m	2.4m		53	1	3	N	N		
																			-- Parity, overflow, logical checks.
Univac SS 80/90 II	Y	Biquinary	4	6	10	1280 200-1200 2400-7600	core drum drum	17u 425u 1700u	136u 1470u	688u 1988u	1173u 2490u		76	1	9	N	N		
																			-- Odd parity check. Multiword transfers drum to core and core to drum. Full alphanumeric compare (program interrupt is optional).
Z-23	Y	B	5	7	35	8K	core	10u	93m	20m	20m		2	240	Y	Y			
																			-- Parity check for core memory and drum.
Z-25	Y	B	6	3	18	16K	core	10u	85u	180u	152u		32	1	1024	Y	Y		
																			-- Parity check, controlling transfers between core memory and registers. Up to 28 interrupt channels.
Z-26	Y	B	6	25	150	32K	core	1.75u	3.5u	6u	12u		128	1	4095	Y	Y		
																			-- Parity check. Up to 48 interrupt channels.
Z-31	Y	D	8	5	44	9K	core	400u					1	10	Y	Y			
																			-- Parity check on memory output. Code-check for right characters on all data lines.

Digital Computers

II. INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
ADVANCE 6020	— EMR builds no peripherals (acquires peripherals from OEM)						
ADVANCE 6040	— see above						
ADVANCE 6050	— see above						
ADVANCE 6070	— see above						
ALWAC III-E	16	175	17.5K	460K	100R 100P	200R 50P	150
	— Parity checking. Magnetic tape, card and paper tape editing. Simultaneous read-write-compute. Plotter may be added.						
Ambilog 200	2	200, 556, 800	96K			300R 120P	1000
ASI 210	32	200	22.5K	1.5KK	800R 250P	500R 110P	400
	— Peripheral equipment can operate independently and simultaneously; buffered communication; independent program interrupt. MRWC; plotters, typewriters, A/D, D/A.						
ASI 420	64	200	22.5-62K		800R 250P	500R 110P	1000
	— Analog buffer available with card reader. X-Y plotter available. 200 lpm printer available.						
ASI 2100	32	200	22.5K	1.5KK	800R 250P	500R 110P	400
	— MRWC; plotter, typewriter, A/D, D/A, remote capabilities, multi-computer-to-computer communication link.						
ASI 6020	32	556	66KC		800R 250P	300R 60P	400
	— Choice of communications I/O channels: permits serial character transfer, parallel word transfer, variable field transfer, and cyclic transfer.						
ASI 6040	32	556	66KC		800R 250P	300R 60P	400
Bailey 855							
BIT 480	30	200, 556, 800	.3-120K		100R 100P	10-1000R 10-120P	400
	— Read-write-compute optional. Read-write standard.						
BIT 480F	30	200, 556, 800	.3-120K		100R 100P	10-1000R 10-120P	400
	— Read-write-compute optional. Read, write standard.						
BR-133	— I/O operations controlled through 3-level priority interrupt system. Optional high speed capability.						
Burroughs E-103	N				*	20R	*
	— *Card read at 17/20 columns per sec., card punch at 17 columns per sec. Printer, semi-ganged, prints at 24 digits per sec. Data plotter may be used.						
Burroughs 205	10	100	6000	400K	300R 100P	540R 60P	150
	— Card and print editing via buffer drums and format bands. Datafile Multiple Tape Bin available as auxiliary storage — 20,000,000 digits per file, 10 files available. Dual lane magnetic tape, independent search in both directions, addressable tape.						
Burroughs 220	10	208	25K	1.3KK	300R 100P	1000R 60P	1500 150
	— Card and print editing via buffer drums and format bands. Datafile Multiple Tape Bin available as auxiliary storage — 65,000,000 digits per file, 10 files available. Dual lane magnetic tape, independent search and scan. High speed printer may be used on-line or off-line.						
Burroughs B200 Series	6	200-555	18-50-66K	1.3KK	800R 300P	1000R 100P	700
	— Card readers, punches, printers, MICR sorter-reader fully buffered. Ledger record processor. Data communications disk file; Bull & ICT code compatibility; binary tapes (read & write). Automatic checking of paper tape.						
Burroughs 300	6	200, 555, 800	18-72K		200-1400R 100-300P	500-1000R 100P	475-1040
	— All I/O devices buffered except tape devices and disk.						
Burroughs 2500/3500	100	144, 200, 556, 800	9-144K	8KK	200-1400R 100-300P	500-1000R 100P	700-1040
Burroughs 5000	16	555 200	66K 24K	2KK	800R 300P	1000R 100P	700
	— Complete multiple read-write-compute buffering. Tape format compatible with IBM 729II and 729IV units. Plotter may be added. Vertical and horizontal magnetic tape parity checking. Data communications, disk file. Automatic checking of paper tape.						

Digital Computers

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
Burroughs 5500	16	200, 556, 800	18-72K		200, 800, 1400R 100, 300P	500-1000R 100P	475, 700, 1040
Burroughs 6500	16	200, 555, 800, 1600	9-144K		200, 1400R 100, 300P	500, 1000R 100P	475, 1040
C-8500	32	800	120K	15	1200-1600R 250P		1000
					— Simultaneous read-write-compute.		
CAE 510	16	200, 556	15-41K		800R 100P	600R 60P	600-1000
					— I/O operations controlled through 18 levels priority interrupt system. Special linkage unit for visual display consoles and fast buffer memory blocks. Versatile I/O system for digital and analog signals. XY incremental plotters.		
CDC G-15	4	57	430	300K	100R 100P	250R 17P	100
					— Tape search speed is 2600 char/sec. Optional paper tape punch speeds: 400R, 60P. Magnetic tape editing and checking. Tape reads in both directions. Tape and card operations buffered. Graph plotter, digital differential analyzer may be added.		
CDC G-20	144	1100	240K	1KK	800R 250P	500R 110P	
					— Magnetic tape editing, programmed print editing. High print speed refers to wholly numerical lines. Multiple read-write-compute.		
CDC-160	32	200-556	15-41.7K	7.6KK	1200R 250P	350R 110P	150
					— Overlap start-top time. Magnetic drum, plotters, A/D converters, typewriter.		
CDC-160A	32	200-500	15-41.7K	11.3KK	250-1200R 100-250P	350R 110P	600-150
					— 1 buffer channel standard, second buffer channel optional. Mag-drum, plotter, A/D, typewriter, arithmetic unit.		
CDC-160G	512	200, 556, 800	30-120K	11.5KK	1200R 250P	350R 110P	1000
CDC-924	48	200-556	15-41.7K	4KK	1200R 250P	350R 110P	1000 150
					— 3 bi-directional buffer channels. Simultaneous read, write and compute. Mag-drum, plotter, A/D, typewriter.		
CDC-924A					— Same as 924.		
CDC-1604	48	200, 556, 800	30-120K	2KK	1200R 250P	350R 110P	1000
					— Multiple read-write-compute. 3 bi-directional buffer channels. 1 high speed channel.		
CDC-1700	V	200, 556, 800	30K	V	100R	400R 120P	300
CDC-3100	512	200, 556, 800	7.5-120K	4KK	1600R 250P	350R 110P	600-100 150
CDC-3150	V	200, 556, 800	30-120K	V	1200R 250P	350, 1000R 120P	300, 500, 1000
CDC-3200	512	200-556	120K	4KK	1200R 250P	350R 110P	1000
					— Multiple read-write-compute.		
CDC-3300	V	200, 556, 800	30-120K	V	1200R 250P	350-1000R 120P	300, 500, 1000
CDC-3400	512	200-800	7.5-120K	2KK	1200R 250P	350R 110P	1000
					— Multiple read-write-compute. Disk, drum, typewriter.		
CDC-3600	4096	200, 556, 800	7.5-120K	2KK	1200R 250P	350R 110P	1000
					— Multiple read, write, and compute. Up to 32 data channels. Satellite computer, disk and drum storage, data display device.		
CDC-3800	4096	200-800	7.5-120K	2KK	1200R 250P	350R 110P	1000
CDC-6400		200, 556, 800	120K		1200R 250P		1000
					— New memory reference may be made every 100 nanoseconds.		

Digital Computers

INPUT AND OUTPUT							
NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
CDC-6500	V	200, 556, 800	120K	V	1200R 250P		1000
CDC-6600		200, 556, 800	120K	11.5×10^3	1200R 250P		1000
							— New memory reference may be made every 100 nanoseconds.
CDC-6800	1280	200, 556, 800	120K	11.5×10^3	1200R 250P	350R 110P	1000
CDC-8090							— I/O equipment same as 160A.
CDC-8092				11.3KK			— Peripheral equipment same as for 160A. Buffer channel allows 2 I/O operations to take place simultaneously.
DATAmatic 1000	64		133K	3.1KK	400R 150P		900
DDP-24	16	200-555	6-41.6K	4KK	200R 100P	300R 60P	300
							— Parity checking. Optional cycle stealing mode, or total overlap. Block transfers, standard commands, I/O directly with AU, max transfer, I/O rate 166,000 24-bit words/second. I/O options include Plotter, (digital) A/D-D/A channels, bulk storage (drum, core) real time clock, Data phone I/O, Kineplex, etc.
DDP-224	64		45-112-150K 25-62,2-83,3K		200R 100P	300R 60P	300
							— Longitudinal and horizontal parity generate and check. Multiple fully overlapped operation of processors and fully buffered I/O units. CRT, drum, disk, A/D, D/A, plotters, analog computers, discrete outputs, discrete inputs, word and character I/O channels, buffered word and character I/O channels, direct memory access units, fully buffered I/O control units for memory complex communication. Independent memories, multiple fully overlapped memory operation.
DE-60	N				N	N	15
							— Print and compute simultaneously. Typewriter, numeric keyboard.
DE-600					100R	50R 50P	12cps
DIGIAC 3080	5	185	1.8K	80K	100R 100P	100R 100P	
							— IBM Selectric I/O writer.
EAI 640	4	200, 556, 800	36K	2.4K	400R 100P	300R 120P	300
EAI 8400	4		36-120K	2.4K	400, 800, 1400R 100, 300P	500R 110P	300, 600, 1000
EEC 4-50	256	200-800	37.5-150	5.75-23KK	800-1435R 100-300P	1500R 150P	750-1350
							— Plotter. MICR. Peripheral switching.
EEC 4-70	256	200-800	37.5-150K	5.75-23KK	800-1435R 100-300P	1500R 150P	750-1350
							— Plotter. MICR. Peripheral switching.
FACOM 212					100R 100P		80
FACOM 222			67K		500R 200P	400R 133P	500
FACOM 230-10			1.67K		100R	400R 200P	480
FACOM 230-20			25-120K		800R 250P	1000R 200P	500-1500
FACOM 230-30			25-120K		800R 250P	1000R 200P	500-1500
FACOM 230-40			25-120K		800R 250P	1000R 200P	500-1500
FACOM 230-50			25-120K		800R 250P	1000R 200P	500-1500

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
FACOM 230-60			25-120K		800R 250P	1000R 200P	500-150C
FACOM 231			10K		500R 200P	400R 100P	300
FACOM 241			28K		500R 200P	400R 133P	500
FACOM 270-10						200R 10P	
FACOM 270-20			42K		800R 250P	100R 200P	500-1500
FACOM 270-30			42K		800R 250P	1000R 200P	500-1500
Friden 6010					10R 10P	10R 10P	10cps
GE-115	24	200, 556, 800	7.5-60K	23KK	300, 600R 300P	500R 150P	300, 600, 780, 1100
GE-205	8	200, 556, 800	15-60K	7.7KK	1500R 300P	1000R 110P	900
GE-210	13	250	30-50K		400R	200, 500R 60P	1200
GE-215	8	200, 556	15-42K	V	400-1000R 100P	250, 1000R 110P	450, 900
GE-225	64	200, 556	15-42K	V	400-1000R 100-300P	230, 1000R 110P	450, 900
GE-235	56	see GE-205	see GE-205	7.7KK	400, 1000R 100, 300P	250, 1000R 110P	900
GE-415	88	200, 556, 800	7.5-83K	5.5KK	900R 100P	500R 150P	1200
GE-425	88	see GE-415	see GE-415	5.5KK	900R 100P	500R 150P	1200
GE-435	88	see GE-415	see GE-415	5.5KK	900R 100P	500R 150P	1200
GE-625	no limit	200, 556, 800	30K 83K 120K	3.8KK	900R 100P	500R 150P	1200
GE-635	no limit	see GE-625	see GE-625	3.8KK	900R 100P	500R 150P	1200
GE DATANET-30	32	800	12K	2.4K	300, 900R 100, 300P	300, 500P 150P	1200
					— Simultaneous read-write-compute. Interfaces with all communications terminals.		
General Precision LGP-21	N				N	10, 60R 10, 60P	N
General Precision LGP-30	N				N	200R 20P	N
					— No simultaneous calculating.		
General Precision L-2010	N				N	60, 300R 100P	N
					— Parity check on input; reading, writing and computing simultaneously; incremental plotter.		
General Precision L-3000	1023	555.5	50K		200-800R 100P	350R 60P	1000
					— Simultaneous read-write-compute. Model 210 X-Y plotter, CRT display. File subsystems carry 200 million characters of disk storage each.		
General Precision RPC 4000	N					200, 500R 20, 300P	
					— No simultaneous paper tape-compute.		
H-120	24	200-800	4.8-96K	28.8KK	400-800R 100-400P	600R 120P	450-1300
					— Financial edit instruction.		
H-200	64	200-800	4.8-96K	28.8KK	400-800R 100-400P	600R 120P	450-1300
					— Financial edit instruction.		

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
H-330	128		30-83K		1500R 300P	350R 100P	1000
H-400	8	1110	48-133K	5.6KK	650-800R 250P	500-1000R 110P	900
	-- Automatic magnetic tape error correction. Tape reads in both directions. Special I/O editing instructions.						
H-800	64	1110	48-133K	5.6KK	240-800R 100-250P	1000R 110P	900
	-- Automatic magnetic tape error correction. 16 I/O operations.						
H-1200	64	200-800	4.8-96K	28.8KK	400-800R 100-400P	600R 110P	450-1300
	-- Up to 4 I/O operations.						
H-1400	16	1110	48-133K	5.6KK	350-800R 250-800P	500-1000R 110P	900
	-- Program interrupt available.						
H-1800	64	1110	96K	5.6KK	240-800R 100-250P	1000R 110P	900
	-- Magnetic tapes read forward and reverse with orthotronic error correction.						
H-2200	128	200-800	4.8-96K	28.8K	400-800R 100-400P	600R 120P	450-1300
	-- Simultaneous read/write capabilities.						
H-4200	192	200-800	4.8-96K	28.8K	400-800R 100-400P	600R 120P	450-1300
	-- Random access drum.						
H-8200	384	200-800	4.8-96K	28.8K	400-800R 100-400P	600R 120P	450-1300
	-- Up to 34 I/O operations. Processing of up to 9 programs simultaneously.						
HW-15K	N				100R	20R 60P	15.6cps
	-- Typewriter input at 120 char/sec. Simultaneous read-write-compute.						
IBM Ramac 305	N				125R 100P	60R 60P	150
	-- Control panel editing. Simultaneous read-compute or write-compute.						
IBM System/360	256	800, 1600 1511, 3022	15-180KB 170-340KB		400-1000R 91-500P	1000R	600-1400
	-- Completely buffered I/O units, simultaneous read and write; I/O operations overlapped with processing. Remote inquiry terminals including process control units. Optical and magnetic character recognition devices. Random access devices: 400KK character strip file, 4KK character 1 2MC drum, 112KK character disk storage, 7.25KK char. interchangeable disk pack. Visual display: 12", 3848 char. display terminal w/buffer, 600 char./sec. low cost display station. Graphic data processing systems. Remote inquiry terminals include process control units.						
IBM 360/20	6	800, 1600 bits	15-30KB	18.5KK	500-1000R 91-500P		300-1100
IBM 650	6	200	15K	450K	155R 100P	60	150
	-- Control panel editing. Automatic checking. Simultaneous read-write-compute. Bulk disk storage (see INTERNAL CHARACTERISTICS).						
IBM 704	10	200	15K		250R 100P		150
	-- Control panel editing. Automatic checking. Limited overlap of computing with reading or writing. Cathode ray tube plotter may be attached. Physical tape records of any length: physical records can be broken into any number of logical records.						
IBM 705 III	100	556	62.5K	16KK	250R 100P		1000 500 150
	-- Automatic checking. Internal tape editing. Read-write-compute simultaneously.						
IBM 709	48	200-556	15-62.5K		250R 100P		150
	-- Control panel editing. Physical tape records of any length; physical records contain any number of logical records. Read-write-compute simultaneously.						
IBM 1130	N				300-1000R 80-160 col/sec P	60R 14.8P	80-600
IBM 1401	6	200-556- 800, 1511	7.2-90K		800R 250P	500R 150P	600-1285
	-- Programmed editing. Print is buffered. High speed for printer refers to the printing of entirely numerical lines. A magnetic ink reader-sorter, an optical character reader, and many other devices may be attached; Hypertape drive, Model 2, having 1511 char/inch density and 34K char/sec. speed. Can operate with 3022 digit/inch density and 68K digit/sec. speed.						

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE			PUNCHED CARDS	PAPER TAPE	PRINTER SPEED	
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
IBM 1410	20	200-556, 800, 1511	7.2-90K		800R 250P	500R	600-1100
	— In/out editing commands. Automatic checking. Bulk disk storage (see INTERNAL CHARACTERISTICS). Read-write-compute. 1412 magnetic character reader may be added. TELETYPE remote inquiry data transmission, direct data entry. Hypertape drives, Model 2 having 1511 char/inch density and 34K char/sec. speed. Can operate with 3022 digit/inch density and 60K digit/sec. speed.						
IBM 1440					300-400R V	500R 150P	120-600
	— Printer buffer. 1311 disk storage drives — Max. 5, 77K char. rate uses removeable and interchangeable disk packs containing up to 3KK char. each. (Max. capacity up to 15KK char. on line.)						
IBM 1460	6	200-800	7.5-90K		800R 250P	500R 150P	600-1100
	— Overlap processing with reading or writing. Hypertape available. 1050 data communication terminal, console, 13" disk drives, 1060 data communications unit, 1009 data transmission unit, 7710 data transmission unit, magnetic ink, direct data channel connection to 1440, 1401 or 1460.						
IBM 1620	N				250R 125P	150R 15P	150-240
	— Automatic checking. Card input-output buffered. 1711 Data Converter can be added for real-time input.						
IBM 1620 MODEL II	— Same as Model I						
IBM 1800	2	800 bits	30-90KB	1.2KK	300-400R 80-160 col/sec P	60R 14.8P	150-240
IBM 7010	20	200-800	23-90K	V	800R 250P	500R	600-1100
	— Buffered unit record, paper tape, teleprocessing, inquiry and paper tape. Two channel tape and disk. 1301 and 1311 disk files.						
IBM 7030 (STRETCH)	256		62K		1000R 250P		600
	— Input and output usually under separate control. Access time of magnetic tape units varies from 51 to 231 msec, depending on file organization.						
IBM 7040	50	200, 556, 800	7.2-		800R 250P	500	600, 1100
	— Simultaneous read-write-compute. Disk files, teletype, remote inquiry, data transmission unit, 1401. Direct data entry, up to 3 printers (total 3300 LPM) may be used.						
IBM 7044	50	200, 556, 800	90K		800R 250P	500	600, 1100
	— Simultaneous read-write-compute. Disk files, teletype, remote inquiry, data transmission unit, 1401. Direct data entry, up to 3 printers (total 3300 LPM) may be used.						
IBM 7070	40	200, 556, 800	15-90K		500R 250P	500R	600, 1100 150
	— Automatic checking. Magnetic tape, paper tape, and printer editing. Paper tape off-line; 1100 & 600 line/min, printer off-line. Multiple read-write-compute. 1401 and 1460 used for input and output at high speeds.						
IBM 7072	40	200-556	7.2-20K		500R 250P	500R	600, 1100 150
	— Automatic checking. Magnetic tape, paper tape, and printer editing. Paper tape off-line; 1100 & 600 line/min, printer is off-line. Multiple read-write-compute. 1401 and 1460 used for data input and output at high speeds.						
IBM 7074	40	200, 556, 800, 1511	15-170K		500R 250P	500R	600 150
	— Automatic checking. Magnetic tape, paper tape, and printer editing. Paper tape off-line. 1100 & 600 line/min, printer off-line. Multiple read-write-compute. 1401 and 1460 used for input and output at high speeds. Hypertape drives, Model 1, having 1511 char/inch density and 170K char/sec speed. Can operate with 3022 digit/inch density and 340K digit/sec. speed.						
IBM 7080	40	200, 556, 800, 1511	15-170K				
	— Uses 1401 & 1460 for card, paper tape and print. Complete overlap of read-write-compute. Hypertape drives, Model 1, having 1511 char/inch density and 170 char/sec speed can operate with 3022 digit/inch density and 340K digit/sec. speed.						
IBM 7090	80	200, 556, 800, 1511	15-170K		250R 100P		150
	— Card and print editing with panel. Automatic checking, full tape checking. Multiple read-write-compute using a 7606 Multiplexor and up to eight 7606 Data Channels. Direct data entry, teletype, remote inquiry, programmed transmission control.						
IBM 7094 II	80	200, 556, 800, 1511	15-170K		250R 100P		150
	— Card and print editing with panel. Simultaneous read-write-compute buffering. Disk files, teletype, remote inquiry, programmed transmission control. Data transmission, drum files.						

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
Mathatron 4280 TD					10, 16R 10P		
	— Electronic interface.						
Micro-LINC-300	8	400	6K	132K	100R	10-300R 10-120P	300
	— Keyboard & RO teletype standard in basic system.						
Monrobot XI	N				12	20R 10P	60
	— Up to 4 in/out devices can be attached. Typewriter. 16 columns/sec. card read. Time between characters read, write, or print may be used for computation. X-Y plotter available.						
Myriad I/II	V					1000R 150P	300
	— Concurrency achievable by sophisticated multi-level interrupt system.						
NCR 304	64	200	30K	850K	2000R 250P	1800R 60P	680, 900
	— Automatic checking of cards and paper tape. Complete magnetic tape checking, including read-back. In/out editing. Read-write on tapes simultaneously, Card and print buffered. Up to 4 MICR sorter-readers can be used, buffered if only 1 unit used. Printer skips blank lines at the rate of 5040 lines/min.						
NCR 310	20	200	15-30K			600R 1000R 110P	600 720 1620
	— High speed printer (24 characters/line) is buffered. Automatic magnetic tape checking; tape editing. Magnetic ink character reader can read 750 MICR documents per minute.						
NCR 315	16	200, 556, 800	12, 24, 66	2.8-11.1KK	2000R-400R 100-250P	600R 120P	680, 900
	— Polysynchronous operation with demand interrupt permits simultaneous operation of a number of peripheral units. Automatic checking and editing facilities. 16 CRAM (Magnetically encoded cards on a drum) random access memory (235m access time) units allow 240 postings per minute. Up to 4 buffered MICR sorter-readers can process 750 checks per minute.						
NCR 315 RMC	16	200, 556, 800	12, 24, 66, 83Kc	2.8-11KK	2000R 100-250	600R 120P	1000
NCR 315-100	8	800	120K	10KK	300-2000R 60-300P	600R 120P	1000
	— Read, write, compute simultaneity optional. MICR, optical strip reader, CRAM (4 models), CRT teletype.						
NCR 315-501 (RMC MARK I)	8	800	120Kc	10KK	300-2000R 60-300P	600R 120P	1000
	— Vertical and horizontal parity and automatic read after write. Up to 8 levels of magnetic tape simultaneity optional. MICR, optical strip reader, CRAM (4 models), CRT.						
NCR 315-502 (RMC MARK II)	8	800	120Kc	10KK	300-2000R 60-300P	600R 120P	1000
	— Vertical and horizontal parity and automatic read after write. Up to 8 levels of magnetic tape simultaneity optional. MICR, OCR, CRAM (4 models), CRT.						
NCR 390	N	10		V	15 Col. R 15 Col. P	600R 30P	120
	— "Magnetic Tape" refers to a magnetic document (magnetic tape affixed to the back of printed documents) unit. Automatic checking. Editing of punched cards and paper tape. Programmable printer allows for different column arrangements on multiple forms.						
NCR 500					100R 100P	650R 120P	120
OKIMINITAC-7000	8	200bpi	15K		1000R 150P	200, 400R 25, 200P	525
	— Automatic checking. Simultaneous computing in two data channels. X-Y plotter, digital display, A/D and D/A converter, magnetic drum, etc.						
PDP-1	24	200-800	1-90K	2-7.5KK	200R, 800R 100P, 300P	400R 63P	300 1000
	— Simultaneous read-write-compute. Tape editing. 3 tape units (each with 16 tapes) can be operating simultaneously. Visual cathode ray tube displays, 10" or 5" precision. Light pen for use with CRT. Relay buffers, real-time clocks, A/D, D/A, multiplexers, drums, plotters available.						
PDP-4	24	200-56	1-41K	2-5.5KK	200R, 800R 100P, 300P	300R 63P	300 1000
	— Simultaneous read-write-compute possible. All input/output devices are buffered. Micro-tape transport, CRT display, light pen, symbol generator.						
PDP-5	24	200, 556 800	15-90K	2-7.5KK	200R, 800R 100P, 300P	10R, 300R 10P, 63.3P	300
	— All I/O devices are separately buffered; read, write, compute can be done simultaneously. Microtape, CRT displays, graph plotters, light pen, data communications subsystems.						

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
PDP-6	24	800	90K		200R, 800R 100P, 300P	400R 63.3P	300 1000
— Simultaneous read-write-compute. CRT, large drum, time-sharing via communication subsystem, TTY. Parity, sum check.							
PDP-7	8	200, 556, 800	15-90K	2KK	800R 100P	300R 63.3P	300
PDP-8	8	200, 556, 800	15-90Kc	3KK	100-800R 100-200P	300R 63-110P	300-600
PDS-1020						50R 50P	15
— No buffering on input. Output paper tape punch buffered.							
Philco 102	12	800	36K	V	200, 400R 100P	10R 10P	600
— Automatic checking and edit of magnetic tape and punched cards.							
Philco 102M	— Same as Philco 102						
Philco 1000	64	750 200,556,800	90K 25K	19-66KK 19KK	2000R 600R 100P 200P	1000R 60P	900 300
— Simultaneous reading and writing. All slow-speed equipment may be buffered. I/O typewriters, X-Y digital plotters, data link (remote communications system, any competitive tape may be attached.)							
Philco 2000-210	16	750	90K	2.4KK	2000R 100P	1000R 60P	900
— Parity checking, editing. Tape is addressable and reads in both directions. 4 tape units can operate simultaneously with computation. The addition of a buffer permits simultaneous printing and card handling with the above. A real-time scanner, clock, and data link with another computer may be added.							
Philco 2000-211	16	750	90K	2.4KK	2000R 100P	1000R 60P	900
— Automatic checking; editing. Tape can be read in both directions and is addressable. 9 in/out devices can operate simultaneously, 4 can be magnetic tape units. A clock, interval timer, tape translator, and link with another computer may be added.							
Philco 2000-212	64	750 2200	90K 240K	2.4KK 4.9KK	2000R 100P	1000R 60P	900
— Tape reads in both directions. Automatic checking and editing. 9 input-output devices can operate simultaneously with computation. 4 of the 9 can be magnetic tape units. Real-time devices, on-line disc and drum systems, IBM tape translator, clock, interval timer and a data link system (communication between computers) can be added. Uses Philco 1000 as satellite system.							
RCA 301	12	333	10K	4.8KK	600-1500R 250P	100-1000R 100P	1000 1075
— Tape reads in both directions. Random access storage, 3 to 5.4 billion char. Data Disc files available 22-176KK capacity. Read-compute, write-compute, or read-write simultaneously. MICR, OCR, and data communication devices also available. Multiple tape lister, buffered printer, memory to memory 301 to 301 or 301 to 3301.							
RCA 501	62	333-667	33-66K	9.6-19.2KK	400R 100P	1000R 100-300P	600
— Tapes read in both directions. Read-compute, write-compute, or read-write simultaneously.							
RCA 601	48	333-800	33-66-120K	1.1-2.7KK		300R 10P	1000
— Tape reads in both directions. Multiple read-write-compute. Multiple operation of independent programs, variable data length operations.							
RCA 3301	24	200-800	30-120K	5.6-23KK	900-1470R 300P	100-1000R 100P	1000
— Up to 4 simultaneous I/O operations plus computer and buffer device overlap. Buffered card punch and printer. Random access, interrogating typewriters, communication, and timing devices also available.							
RCA Spectra 70/15	96	800	30-120K		1435R 100-300P	200-1000R 100P	625 or 1250
— MICR sorter-reader. Single channel.							
RCA Spectra 70/25	243	800	30-120K		1435R 100-300P	200-1000R 100P	625 or 1250
— 16 I/O devices and compute. MICR sorter-reader. Single channel.							
RCA Spectra 70/35	176	800	30-120K	V	Same as Spectra 70/15, 70/25		
RCA Spectra 70/45	352	800	30-120K	V	Same as Spectra 70/15, 70/25		
— 11 I/O devices and compute.							

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED	
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min	
RCA Spectra 70/46	— Same as Spectra 70/45 but addition of special page oriented drum of 16 million bytes.							
RCA Spectra 70/55	512 — 14 I/O devices and compute.	800	30-120K	V	Same as Spectra 70/15, 70/25			
Raytheon 250	6	200	2K	1KK	100R	110R 110P		
	— Automatic checking of magnetic tape. No editing facilities. Voltage plotters, incremental plotters, A/D and D/A converters, high speed buffers, commutators, etc. may be added. Computer can handle many in/out devices. Flip-flop resistor designed to accept parallel or serial information.							
Raytheon 520	8	200-556- 800	9-120Kc		800R 250P	300R 110P	300, 600, 1250	
	— High speed paper tape reader with 500 char. per sec with spooler. Selectric typewriter, tape preparation unit with selectric typewriter, paper tape reader and paper tape punch. Disc Pack (8KK bits storage). Multidevice controller for Data Systems interface.							
SCC 650						300R 120P	300, 600	
	— Simultaneous computer and I/O with DMA in each core bank.							
SCC 655	8	200, 556,	7.5-96K		100, 400R 100P	300R 50, 120P	300, 600	
	— Lateral character check, longitudinal record. X-Y Incremental plotters, A-D converters, analog signal multiplexers, CRT displays.							
SCC 660	8	200, 556, 800	7.5-96K		100, 400R 100P	300R 50, 120P	300, 600	
	— Same as SCC 655.							
SCC 670	8	200, 556, 800	7.5-96K		100, 400R 100P	300R 50, 120P	300, 600	
	— Same as SCC 655							
SDS-910	16	200 556	15K 41.7K	1.5KK 4KK	200R 100P	300R 60P	300 1200	
	— Parallel (by word) input/output commands. Optional 2nd input/output buffer. Optional levels of priority to 1024 levels. Magnetic drums, magnetic discs, SDS MAGPAK magnetic tape system, digital plotters, oscilloscope display equipment.							
SDS-920	16	200 556	15K 41.7K	1.5KK 4KK	200R 100P	300R 60P	300	
	— See SDS-910.							
SDS-930	— Same as SDS-9300.							
SDS-940	— Same as SDS-9300.							
SDS-9300	64	800	96K	14KK	800R 300P	300R 60P	140-2400	
	— Read-write while computing. Software checking of magnetic tape. XY plotter, oscilloscope display, data communication equipment, telemetry equipment.							
SDS Sigma 2	64	200, 556, 800	20-120K	23KK	400-1500R 300P	300R 120P	600-1000	
	— Also available multipurpose keyboard display, keyboard/printer, graph plotter.							
SDS Sigma 5	320	200, 556, 800	20-120K	23KK	400-1500R 300P	300R 120P	600 1000	
	— Same as Sigma 2							
SDS Sigma 7	320							
	— Same as Sigma 2							
SEL 810A	8	200, 556, 800	120K	76KK	400R 100P	300R 110P	300, 600 1000	
SEL 840A	8	200, 556, 800	120K	57KK	400R 100P	300R 110P	300, 600 1000	
SEMA 2000	8	50	375	72K	650R 200P	300R 30P	150	
	— SIM configuration permits programmable typewriter, adding machine, telephone, cash register, direct keyboard inputs and printed hard copy, punched paper tape and vocal readouts.							
SEMAC	8	50	375	72K	650R 200P	300R 50P	150	
Univac I	10	128	12.8K	137K	300R 120P	200R 50P	600	
	— Card and paper tape equipment is off-line via magnetic tape. Simultaneous read-write-compute. Typewriter. Automatic magnetic tape re-read check.							

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Words/Tape	Cards/Min	Char/Sec	Lines/Min
Univac II	16	250	25K	420K	300R 120P	200R 50P	600
	— Plugboard editing. Card and paper tape off-line via magnetic tape. Simultaneous read-write-compute. Typewriter.						
Univac III	32	333 250	133K 25K	20KK .44KK	700R 300P	1000R 115P	700-922
	— Programmed editing. Multiple read-write-compute. Card punching printer may be used. XY plotter, AMA paper tape, FASTRAND random access storage, Kimble Tag Reader, A.B. Dick Strip Printer, 63 char. reader, printer and punch.						
Univac 490	192	1027 250	100-125K 25K	6.5KK 1.4KK	600R 300P	400R 350R 110P	700-922
	— Automatic checking. Multiple read-write-compute. System adaptable to analog devices. A variety of specialized inquiry-answering devices available. Allows peripherals to operate independently of computer processing. Univac Standard Communication System enables 490 to communicate with data transmission devices. Cal. Comp. plotter can be used on line to the 490.						
Univac 60/120					125-150R 125-150P	146R	
	— Parity check of punched paper tape. Card reading/processing; paper tape read/processing. System consists of a calculator, card reader and punch. Paper tape reader, Model 410, is optional.						
Univac 1004					400R 200P	400R 110P	400
	— Various simultaneous data handling operations. Basic system includes card processor, card reader and printer. Card punch is optional. Auxiliary card reader - 400 CPM - 3 stackers; DLT-1-communications - 342 CPS - leased line; DLT-2-communications-300-CPS - leased line; read punch-200 CPM.						
Univac 1004-II					615R 200P	400R 110P	600
Univac 1004-III	2	200, 556 800			615R 200P	400R 110P	600
Univac 1050	16	1330	133K	37.3KK	900R 300P	400R 1000R 110P	922
	— Tapes are not word oriented. Printer has buffer. Various simultaneous data handling operations. 8 channels available. In addition to normal printers, card tape equipment, FASTRAND mass storage - 66KK char. - 500KK char., UNIVAC 1004 card processor, communications which handles 32 simplex lines at all normal common carrier speeds.						
Univac 1103A	10	128	12.8K	326K	120R 120P	200R 60P	600
	— Card plugboard editing. Automatic card checking. 2 input-output registers. Tape reads in both directions. Typewriter.						
Univac 1105	24	208	21K	846K	120R 120P	200R 60P	600
	— Simultaneous read-write-compute. Flexowriter output. Cathode ray tube output optional. Plotting feature on high speed printer. Off-line digital to analog devices available.						
Univac 1107	192	1000 250 125	120K	5.5KK 1.2KK	700R 300P	400R 100P 300P	700 600
	— Programmed editing, automatic checking. Complete simultaneous read-write-compute. System adapted to analog devices.						
Univac 1108	16	800	96K	600K	900R 300P	1000R 240P	1500
	— Automatic checking. Simultaneous read-write-compute. Interfaces available.						
Univac 9200					400R 75-250P		250-500
	— Overlap on all peripherals. Reader, punch, printer on separate channels.						
Univac 9300	16	800	34K		600R 75-200P		600, 1200
	— See Univac 9200.						
Univac File Computer I	10	139	10K	200K	150R 150P	200R 60P	600
	— Plugboard control for cards, paper tape and printer. Tape is read in both directions and is checked by re-read. Sorting-collating device, typewriter, Randex Mass Storage are available. Multiple read-write-compute.						
Univac File Computer II	— See Univac File Computer I						

INPUT AND OUTPUT

NAME OF COMPUTER	MAGNETIC TAPE				PUNCHED CARDS	PAPER TAPE	PRINTER SPEED
	No. of Units	Tape Density Char/Inch	Tape Speed Char/Sec	Word/Tape	Cards/Min	Char/Sec	Lines/Min
Univac Larc	40	250 125	25K 12.5K	600K 300K		10R 10P	600
— Input/output control is done by Processor, completely independent of computation. Almost any in/out device can be added to the system.							
Univac SS 80/90	10	250	25K	570K	600R 150P		600
— Programmed editing and checking for card and print. Complete tape checks. Read-write-compute. Tape read and write cannot be overlapped. Randex Mass Memory and card punching printer available.							
Univac SS 80/90 II	10				600R 150P	500R 100P	600
— Magnetic tape specifications same as for SS 80/90 Model I. Various simultaneous processes.							
Z23	4	233	17.5K	100K	120R 120P	300, 900R 150P	300
— No simultaneous operating.							
Z25	8	556	110K	100K	200R 100P	300, 1000R 150P	300, 960
— No simultaneous operations. Up to 18 additional I/O channels.							
Z26	32	556, 800	36-110K	525K	200R 100P	1000R 150P	300, 1000
— Read, write, compute simultaneously. Up to 60 additional I/O channels.							
Z31	8	233	17.5K	150K	200R 15P	300R 150P	300, 1000
— No simultaneous operating. Magnetic drums, disc files.							

III. COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
ADVANCE 6020		\$2230	\$73,500	220 and, or 110	15	N
— Engineering. Modular construction. Assist assembly, Fortran, available.						
ADVANCE 6040		\$2420	\$89,500	220 and, or 110	15	N
— Engineering. Modular construction. Assist assembly, Fortran, available.						
ADVANCE 6050		\$2820	\$104,500	220 and, or 110	25	N
— Engineering. Modular construction. Assist assembly, Fortran, available.						
ADVANCE 6070		\$5120	\$179,500	220 and, or 110	25	N
— Engineering. Modular construction. Assist assembly, Fortran, available.						
ALWAC III-E	\$2400	\$1820-\$3600	\$50,000-\$80,000	7.4KW	35(computer)	85°F
— Scientific, real-time, business. Computer is modular and extra units are easily added.						
Ambilog 200			\$45,000-\$500,000	105V	24	
— Scientific, real-time. ASA basic FORTRAN, ADEPT.						
ASI 210	\$2600	\$2135-\$6000	\$70,000-\$200,000	1.75KW	50	N
— Scientific, and real-time. FORTRAN I and II available; diagnostic program. Assembler.						
ASI 420	\$12,500	\$8500-\$33,500	\$400,000-\$450,000			N
— Scientific, business, and real-time. FORTRAN, Intercom Translator available. Data channel "traps" may be set to ignore or recognize an interrupt.						
ASI 2100	\$3000	\$2530-\$6000	\$75,000-\$200,000	1.56KW	14	N
— Scientific, real-time; Assembler (ASIST), FORTRAN II available; built on modular basis.						
ASI 6020	\$2500	\$2150-\$4000	\$73,500	110/120Kc	50	N
ASI 6040	\$3000	\$2420-\$4000	\$89,500	110/120Kc	50	N
Bailey 855			\$100,000-\$1,000,000			N
— Modular basis. Process control and information system.						
BIT 480	\$800	\$400-\$2500	\$6800-\$75,000	110V	9	N
— Scientific, real-time. ABIT 1, 4 assembly. ASA FORTRAN, report generation.						
BIT 480F	\$1200	\$500-\$2500	\$8250-\$75,000	110V	3	N
— Scientific, real-time. ABIT 1, 4 assembly. ASA FORTRAN, report generation.						

Digital Computers

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
BR-133	— No extensive installation site preparation.			1.5KW		N
Burroughs E-103	\$1000	\$875-\$1200	\$20,000-\$30,000	220V	desk size	
	— Scientific and business use, desk size.					
Burroughs 205	\$8000 \$5760(3 yr.)	\$2400-\$10,000	\$48,000-\$150,000	38KVA	1600	12
	— Scientific and business. Datacode compiler, STAR-0 assembly, ALGOL compiler, 604 simulator programs available. Peripheral equipment can be added on a modular basis.					
Burroughs 220	\$17,000	\$5500-\$20,000	\$250,000-\$1,000,000	45KVA	1600	12
	— Scientific, business. STAR 2B, assembly; ALGOL compiler. Computer built on a modular basis, extra memory and peripheral units easily added.					
Burroughs B200 Series		\$3300-\$9000	\$140,000-\$375,000		300-500	
	— Business. Assembly system, report generator, sort generator available. Multiprocessing software package.					
Burroughs 300	\$6700	\$2500-\$12,000	\$150,000-\$720,000	60 cycle		
	— Business, banking including on-line operations.					
Burroughs 2500/3500	\$9200	\$4000-\$25,000	\$192,000-\$1,200,000	208-240KVA	V	V
	— Scientific, business. COBOL, FORTRAN IV compilers.					
Burroughs 5000	\$16,850	\$13,000-\$50,000	\$533,000-\$2,000,000	29KVA	625	6
	— Scientific and business. Completely modular in memory, input/output channels and peripheral equipment. ALGOL and COBOL compilers. Built-in operating systems. Simultaneous and multi-processing. Two central processors possible.					
Burroughs 5500	\$24,500	\$16,000-\$70,000	\$960,000-\$4,200,000	V	V	V
	— Scientific, real-time, business. ESPOL, ALGOL, FORTRAN IV, COBOL compilers. FORTRAN II & IV translator.					
Burroughs 6500	\$35,000	\$25,000-\$100,000+	\$1,050,000-\$4,200,000+	V	V	V
	— Scientific, real-time, non-real-time, business. FORTRAN IV, ALGOL, COBOL, ESPOL compilers.					
C-8500	\$4000	\$1500-\$6000	\$75,000-\$300,000	48V	1094	1270 BTU
	— Scientific, real-time, business data communications. Macro-Assembler, program test system, general utility programs.					
CAE 510	\$3000	\$2000-\$10,000	\$83,000-\$400,000	3KVA	30	N
	— Scientific, real-time.					
CDC G-15	\$1530	\$1485 and up	\$49,500 and up	3.8KVA	100	N
	— Scientific and business. Intercom 500 and 1000, ALGOL compilers. Modular construction. Two computers can be joined.					
CDC G-20	\$15,500	\$8750 and up	\$390,000 and up	20KVA	600	6
	— Scientific, real-time, business. SPAR, PAR, SNAP assemblies; ALCOM and COBOL compilers. Modular construction permits extra units to be added easily.					
CDC-160	\$2500	\$1500 and up	\$60,000 and up	.7KW	12	Y
	— Scientific and business. Power requirements are for the computer only. Desk size. FORTRAN, OSAS (assembler).					
CDC-160A	\$4500	\$2250 and up	\$90,000 and up	115V	12	Y
	— Scientific, real-time, business. Space stated for computer only. FORTRAN, AUTOCOMM (commercial compiler), OSAS, SICOM.					
CDC-160G	\$12,800	\$4182 and up	\$175,000 and up	115VAC	200	Y
CDC-924	\$11,000	\$8000 and up	\$180,000 and up	3.8KW	400	13
	— Scientific, real-time. CAP (assembler).					
CDC-924A	\$12,000	\$9000 and up	\$220,000 and up			
	— Same as 924.					
CDC-1604	\$47,000	\$22,500 and up	\$750,000 and up	7.5KW	600	25
	— Scientific, real-time, business. Power and floor space requirements refer to computer and console only. Real time clock. CODAP, FORTRAN, COBOL, JOVIAL available.					
CDC-1604A	\$48,000	\$24,000 and up	\$790,000 and up		200	
	— Same as 1604.					
CDC-1700	\$3000	\$1385-\$15,000	\$43,800-\$500,000		14	N
	— Scientific, real-time, process control applications. Assembler. Modular basis. FORTRAN compiler.					
CDC-3100	\$3500	\$2700-\$6500	\$95,000-\$263,500	440VAC	200	2
CDC-3150	\$8300	\$8300	\$325,000	13.3KVA	52	27,000 BTU
	— Scientific, real-time business applications. COMPASS assembly. COBOL, FORTRAN, ALGOL compilers. Modular basis.					

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
CDC-3200	\$12,000 — Scientific, real-time, business. SCOPE, (MONITOR), COBOL, FORTRAN, COMPASS (Assembly). Power and space requirements refer to computer and console only.	\$8000 and up	\$280,000 and up	8KVA	200	2
CDC-3300	\$22,200 — Same as CDC-3150.	\$9605	\$400,000	15.2KVA	52	34,800 BTU
CDC-3400	\$12,000 — Scientific, real-time, business. SCOPE, COMPASS, FORTRAN, COBOL, SORT. Power and space requirements refer to computer and console only.	\$9200-\$14,000	\$394,000-\$611,000	4.4KVA	250	2.5
CDC-3600	\$40,000 — Scientific, real-time, business. FORTRAN, COMPASS (assembler), SCOPE (MONITOR), COBOL, SORT. Typewriter included in main console; real-time clock.	\$28,000-\$111,000	\$1,737,000-\$6,600,000	7.1KVA	1000	6
CDC-3800	\$60,000	\$32,000-\$160,000	\$1,536,000-\$7,500,000	8KVA	1500	40,000 BTU
CDC-6400	\$60,000 — COMPASS assembler. COBOL, FORTRAN, ALGOL compilers. (May be converted to 6500.)	\$37,250	\$1,500,000	18.65-27.97KVA	160	69,250-95,400 BTU
CDC-6500	\$75,000 — Same as CDC-3150	\$56,750	\$2,270,000	27.79-37.3KVA	157	95,400 BTU
CDC-6600	\$85,000 — Scientific, real-time, business. COMPASS assembler. COBOL, FORTRAN, ALGOL compilers.	\$59,250	\$2,370,000	27.9-37.3KVA	189	95,400-102,000 BTU
CDC-6800	\$80,000	\$60,000-\$160,000	\$2,500,000-\$7,000,000	208V	40,000-70,000	8-12
CDC-8090	— Scientific, real-time, not real-time, business. Industrial Control Processor, OSASA, FORTRAN, Insetro, CEPS, Utility Routines. Small basic control computer expandable to medium-size general purpose computer. Compatibility between 160A programs. Field proven softwares.		\$29,000 and up			N
CDC-8092	\$1300 — Used principally as a data communication. Room temp. not to exceed 100°F. TOSAS. Highly flexible, multi-purpose, stored program data processor and converter. Word construction is 8 binary digits, parallel throughput, programmable to multiple-precision and to alphanumeric and binary-coded decimal.	\$725 and up	\$20,000 and up	850W	10	
DATAmatic 1000	\$42,000	\$38,700-\$78,000	\$1,100,000-\$4,300,000			
DDP-24	\$2500 — Scientific, real-time, data reduction, time-shared applications. Easily expanded. DIP, DAP, DEP, and FORTRAN II.	\$2500-\$17,500	\$79,000-\$700,000	115V	100	
DDP-224	\$6800 — Real-time, digital simulation, hybrid simulation, command and control. DAP II, DEP II, FORTRAN (REAL TIME), MONITOR, Subroutine library, Diagnostics. Modular, processors, memories, I/O facilities, system modules for multiprocessor systems, satellite I/O units, modular packaging. Modularity to meet system requirements for multiprocessor speed, large or small memory complexes and I/O facility, featuring ease of use; programming, maintenance.	\$3050-\$15,000	\$95,000-\$1,000,000	2-30KVA	100-300	N
DE-60	\$625 — Scientific, process control. Desk size, 30" x 36". Hardware allows algebraic statements. Modular construction allows extra units to be added easily. One day programmer training.	\$525-\$725	\$20,000 and up	115V	8.4	N
DE-600	\$335 — Scientific, engineering applications.	\$335-\$392	\$15,950	115V		N
DIGIAC 3080	— Scientific, educational. SPA assembly. FORTRAN compiler.	\$1000-\$2000	\$19,500-\$30,000		100	N
EAI 640	— ASA, FORTRAN and an Operations interpreter.		\$27,700-\$150,000	1.7KVA	5	N
EAI 8400	\$12,000 — Scientific, real-time, hybrid applications. MACRO assembler. FORTRAN, Hytian operations interpreter, Hytian simulation language.	\$6000-\$14,000	\$250,000-\$600,000	25.21KVA	400	76,400 BTU
EEC 4-50	\$7800 — Scientific, real-time, business, multi-computer. Report program generator. COBOL, FORTRAN, ALGOL compilers.	\$7800-\$16,800	\$390,000-\$840,000	30-50KVA	1800	50KVA
EEC 4-70	\$15,700 — Scientific, real-time, business, multi-computer. Report program generator. COBOL, FORTRAN, ALGOL compilers.	\$15,700-\$42,000	\$784,000-\$2,100,000	50-90K	2500	60KVA
FACOM 212	\$800					
FACOM 222	— ALGOL, FAST, COBOL compilers.					
FACOM 230-10	\$500 — FORTRAN, COMPACT, COBOL compilers.					

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
FACOM 230-20	\$2000					
FACOM 230-30	\$3000					
FACOM 230-40	\$4000					
FACOM 230-50	\$7000					
FACOM 230-60	\$10,000					
FACOM 231	\$1600 — ALGOL, FASP, COBOL compilers.					
FACOM 241	— FASP compiler.					
FACOM 270-10	— Sale only.		\$28,000			
FACOM 270-20	\$2200					
FACOM 270-30	\$5600					
Friden 6010	\$750	\$600-\$900	\$19,750-\$29,750	115VAC		N
GE-115	\$2400 — Business, APS assembly, LOGEL, COBOL compiler. Up to 67 peripheral units.	\$1340-\$5100	\$64,320-\$244,000	120/208V	280	N
GE-205	\$2900 — Program and peripheral-compatible with GE-215, 225 and 235. Available in program library: Assembly, GECOM compiler, COBOL-61 WIZ scientific compiler, FORTRAN II and IV, Report Generator, Card Program Generator, Critical Path Methods and others.		\$140,000	10KVA	550	3
GE-210	\$16,000 — No longer in production.	\$10,800-\$19,000	\$575,000-\$1,000,000			
GE-215	\$6000 — Scientific, not real-time, banking, manufacturing. FORTRAN, ALGOL, GECOM, CMP, LP, BANKPAC compilers.	\$2500-\$10,000	\$110,000-\$440,000	120/208V	680	8-10
GE-225	\$8000 — See GE-215.	\$2500-\$10,000	\$110,000-\$1,150,000	120/208V	760	10-12
GE-235	\$6000 — See GE-215.	\$10,900-\$28,000	\$490,000-\$1,260,000	120/208V	760	10-12
GE-415	\$7300 — Program and peripheral-compatible with GE-425 and 435. Available in program library: Macro-Assembly Program, GE-400 COBOL, GE-400 FORTRAN, Report Program Generator, Sort/Merge Generator, GE-400 Operating System, I/O System, Simultaneous Media Conversion, service routines and others.		\$350,000	10KVA	500	3
GE-425	\$9600 — Program and peripheral-compatible with GE-415 and 435.		\$460,000	10KVA	600	3
GE-435	\$14,000 — Program and peripheral-compatible with GE-415 and 425.		\$670,000	12KVA	700	4
GE-625	\$41,000 — Program and peripheral-compatible with GE-635. Operates normally in multiprogramming mode. GECOS Executive Routine, Macro Assembly Program, FORTRAN IV, FORTRAN II to FORTRAN IV SIFT, COBOL-61 extended, with report writer and sort, application packages, utility and service routines, and others.		\$1,850,000	45KVA	1500	15
GE-635	\$45,000 — Program and peripheral-compatible with GE-625. Operates normally in multiprogramming mode.		\$2,000,000	45KVA	1500	15
GE DATANET-30	\$3000 — Real-time, business, time sharing. GAP and Comma-Communications assemblers.	\$1500-\$4500		9.6KVA	26	
General Precision LGP-21	\$750 — Scientific, business, engineering education applications.	\$695+	\$16,500-\$25,000	110V	desk	N
General Precision LGP-30	\$1300 — Business, engineering education, and scientific. Desk size.	\$1100	\$24,000-\$30,000	110V	desk	N
General Precision LGP-2010	— I/O units easily added; real-time, general purpose.		\$248,000/basic unit	750W	2 cu. ft.	N
General Precision L-3000	\$50,000 — Scientific, real-time, business, command and control operation, management information system. Assembly and compiler programs: ATCOM, BUS, COBOL (1963), LAP 3055.	\$25,000 and up	\$1,000,000 and up	25KW	1200	
General Precision RPC-4000	\$2100 — Business, education, scientific. ROAR assembler, COMPACT compiler, ACT IV compiler.	\$1865+	\$47,000-\$55,000	110V	desk	N

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
H-120	\$3000 — Real-time, business.	\$2500-\$5000	\$112,500-\$225,000	14KVA	385	37,700 BTU
H-200	\$6000 — Same as 120.	\$3000-\$10,000	\$135,000-\$450,000	18KVA	390	48,000 BTU
H-330	\$53,000 — Scientific, business and real-time applications.	\$45,000-\$75,000	\$1,500,000-\$2,000,000			
H-400	\$9000 — EASY Assembly. FORTRAN, COBOL compilers.	\$6000-\$14,000	\$270,000-\$630,000	22.4KVA	900	60,000 BTU
H-800	\$22,000 — Argus Assembly; FORTRAN, COBOL, FACT compilers.	\$16,000-\$30,000	\$720,000-\$1,400,000	58.8KVA	1633	120,000 BTU
H-1200	\$9000 — Scientific, real-time, business.	\$4000-\$20,000	\$180,000-\$900,000	19.6KVA	435	5000 BTU
H-1400	\$14,000 — Scientific, business and real-time applications. EASY 1400 assembler. Modular construction.	\$10,000-\$22,000	\$450,000-\$990,000	42KVA	945	96 BTU
H-1800	\$35,000 — Scientific, real-time, business applications.	\$27,000-\$60,000	\$1,575,000	71.7KVA	1880	13
H-2200	\$15,000 — Same as 1200.	\$5000-\$30,000	\$225,000-\$1,350,000	22.7KVA	505	61,800 BTU
H-4200	\$17,000 — Scientific, real-time, business applications.		\$1,250,000	57.5KVA	674	119,800 BTU
H-8200	\$36,575 — Scientific, real-time, business applications. Modular basis.	\$33,000-\$80,000	\$1,500,000-\$3,600,000			
HW-15K	\$475 — Scientific, real-time, business, process control applications.	\$355-\$600	\$19,750-\$24,000	110V	20	N
IBM Ramac 305	\$3600 — Business. Extra units easily added; computer built on a modular basis. Prices exclude tax.	\$2875 and up	\$167,850 and up	12.6KVA	370	4
IBM System/360		\$1600-\$115,000	\$80,000-\$5,500,000	72KVA* 8.3KVA**	1.7* 15**	
IBM 650	\$6000 — Scientific, business. SOAP assembly. Extra units easily added. Prices exclusive of tax.	\$3750-\$21,500	\$182,400-\$1,100,000	18KVA	150	5
IBM 704	\$35,000 — Scientific, real-time, business. Computer built on a modular basis; extra units easily added. UASAP and FORTRAN compilers. Prices exclude tax.		\$400,000 and up	118KVA	2200	45
IBM 705 III	\$42,000 — Business and limited scientific. COBOL, PRINT, Autocoder III compilers. extra units easily added. Prices exclude tax.	\$28,000-\$50,000	\$1,400,000-\$2,500,000	85KVA	1500-2000	15-20
IBM 709	\$55,200 — Scientific, real-time, business. Compilers: IBM SOS, SHARE, FAP, FORTRAN. extra units easily added. Prices exclude tax.		\$2,630,000 and up	150KVA	3000	50
IBM 1401	\$6500 — Scientific, business. SYMBOLIC, Autocoder assemblies; FORTRAN compiler. Extra units easily added.	\$1900 and up	\$125,150 and up	7-16KVA	450	3.5
IBM 1410	\$11,000 — Scientific, real-time, business. Basic Autocoder assembly; FORTRAN compiler. Extra units are easily added. Prices exclude tax.	\$5365 and up	\$244,550 and up	29KVA	500	.5
IBM 1440	\$2800 — Business. Autocoder, IOCS, File Organization, Utilities, Sort, RPG. Extra units provide upward growth to 1401, 1460, and 1410. Random access, low cost, processing system.	\$1540-\$5500	\$90,000 and up	208,230V	1441	
IBM 1460	\$9000 — Symbolic, Autocoder assemblies, FORTRAN compiler. Built on modular basis with extra units easily added.	\$4835 and up	\$236,000 and up	7-16KV	450	3.5
IBM 1620	\$1600 — Scientific, real-time. FORTRAN, GOTRAN compilers. Symbolic Assembly Program. Floor space refers to computer area only. Extra units easily added. Prices exclude tax.	\$1600-\$5000	\$74,500-\$200,000	15A,230V	22	N
IBM 1620 MODEL II	— Same as Model I.					

Digital Computers

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
IBM 701C	\$20,000	\$18,000-\$35,000	\$945,900	208V 230V	500	20K
	— Scientific, real-time, business. Autocoder, COBOL, FORTRAN. Built on module basis with extra units easily added.					
IBM 7030 (STRETCH)	\$160,000		\$5,000,000-\$7,000,000			
IBM 7040	\$11,850		\$625,600	13.9KVA	1220	2.5
	— Scientific, real-time, business. Assembly and compiler programs: FORTRAN, COBOL, 7090 simulator.					
IBM 7044	\$21,850		\$1,400,000	19KVA	1220	4
	— Scientific, real-time, business. Assembly and compiler programs: FORTRAN, COBOL, 7090 simulator.					
IBM 7070	\$24,000		\$1,077,400	45KVA	1200	6
	— Scientific and business. 7070 Basic AUTOCODER, AUTOCODER, Four-Tape AUTOCODER, Basic FORTRAN, IOCS compilers. Extra units easily added; computer built on modular basis. Program compatibility with 7072, 7074. Prices exclude tax.					
IBM 7072	\$19,825		\$860,550	45KVA	1200	6
	— Scientific, FORTRAN, Autocoder compilers. Program compatibility with 7070, 7074. Extra units are easily added; computer is built on a modular basis. Prices exclude tax.					
IBM 7074	\$29,300		\$1,284,350	45KVA	1200	6
	— Scientific, IOCS, FORTRAN, AUTOCODER compilers. Computer built on a modular basis; extra units easily added. Prices exclude tax. Program compatibility with 7070, 7072.					
IBM 7080	\$55,000	\$45,000-\$70,000	\$2,100,000-\$3,200,000	50KVA	1000-2000	7.5-10
	— Business and limited scientific. AUTOCODER III, FORTRAN compilers. Modular construction; extra units easily added. Prices exclusive of tax and off-line 1401.					
IBM 7090	\$64,000		\$2,898,000	35KVA	1400	25
	— Scientific, real-time, business, assembly and compiler programs: IBM SOS, SHARE, FORTRAN, FAP, and Commercial Translator. Prices exclude tax.					
IBM 7094 II	\$76,000		\$3,225,000	36KVA	1400	25
	— Scientific, real-time, business. Assembly and compiler programs: FORTRAN, COBOL, I/O, control system, Package, SORT, Simulators, Utility. 704/709/7090 compatibility.					
Mathatron 4280TD			\$6990-\$8990	120V	9.5	N
	— Scientific, engineering, statistics. Hard wired assembler and compute.					
Micro-LINC 300		\$900-\$1200	\$38,500-\$50,000			
	— LAP 4 and LAP 5, 2-pass symbolic assemblers.					
Monrobot XI	\$700		\$24,500	850W	2 desks	N
	— Business and scientific. Uses wall outlet. 375 lbs., 48" x 22" x 28".					
Myriad I/II			\$53,000-\$200,000	1.2-2.2K	18	N
	— Myriad I meets military standards. Myriad II industrial applications.					
NCR 304	\$14,760	\$12,500-\$19,000	\$750,000-\$1,140,000	53KVA	1200	30
	— Scientific, business. Extra units are easily added. NEAT compiler. COBOL compiler.					
NCR 310	\$2450	\$2450-\$2880	\$66,500-\$120,200	310-750W	525	N
	— Scientific, business. Control sorting of MICR documents. 6' x 30" computer area, with extra 3' front and back clearance. OSAP assembly. Extra units are easily added.					
NCR 315	\$6775	\$3945-\$30,000	\$203,750-\$1,440,000	17KVA	500	10
	— Scientific, real-time, business. Modular construction permits extra units to be easily added. NEAT and COBOL compilers. Assembler, FORTRAN II, Flexible Algebraic Translator, FORTRAN IV.					
NCR 315-100	\$4000	\$2200-\$9500	\$100,000-\$550,000	120V-60 cycle 3.5KVA 30 AMPS	26	12,000 BTUH
	— Business. Modular construction. NEAT assembler; NEAT COBOL, FORTRAN IV, BEST compilers.					
NCR 315-501 (RMC MARK I)	\$9775	\$8000-\$20,000	\$360,000-\$2,500,000	120V-60 cycle 2.5KVA 22 amps	15	8500 BTUH
	— Business. Modular construction. NEAT assembler; NEAT, COBOL, FORTRAN, BEST compilers.					
NCR 315-502 (RMC MARK II)	\$30,000	\$15,000-\$60,000	\$575,000-\$3,000,000	120V @ 60cps 2.5KVA 22 amps	15	8500 BTUH
	— Business. Modular construction. NEAT assembler; NEAT, COBOL, FORTRAN IV, BEST compilers.					
NCR 390	\$1270	\$995-\$1860	\$49,500-\$79,000	230V	247	N
	— Business, engineering.					
NCR 500	\$1435	\$765-\$2525	\$31,995-\$116,445	230V	450	
	— Modular construction.					

Digital Computers

COST AND USE						
NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
OKIMINITAC-7000			\$40,000-\$800,000 (domestic price)	5KVA or more	15 m ² or more	Yes
	— Control. Modular construction. OKIMPA VII assembler; FORTRAN IV compiler.					
PDP-1			\$120,000-\$350,000	115V	17	N
	— Scientific, real-time. Floor space refers to computer and console only. Modular construction, and units easily added. DECAL algebraic assembler and compiler.					
PDP-4			\$56,000-\$150,000	115V	20	N
	— Scientific, real-time. Modular construction, and units easily added. Symbolic Assembly Program, FORTRAN II.					
PDP-5			\$24,000-\$80,000	115V	10	N
	— Scientific, real-time. Symbolic assembler and FORTRAN II available.					
PDP-6			purchase only \$240,000-\$2,000,000	8-20KW	1000	N
	— Two special busses permit ease of expansion for I/O and memory. Built in time-sharing. Asynchronous operation permits large memories of different speeds. Directly addressable 2 ¹⁸ words of memory. Ultra-Fast memory, 15 index registers, 16 accumulators.					
PDP-7	\$1300		\$45,000-\$200,000	2.1KW	29	N
	— Scientific, real-time, business. FORTRAN incorporated for S-coding, mixing symbolic and FORTRAN statements.					
PDP-8	\$525		\$18,000-\$75,000	7.5 amp @ 110VAC	7	N
	— Scientific, real-time, process control, monitoring. Modular construction, most units added on plug-in basis. Macro-type assembler with assoc. on-line debugging.					
PDS-1020		\$600-\$850	\$26,950-\$35,750	110V	11	N
	— Scientific, not real-time, business. Engineering interpreter, business interpreter.					
Philco 102	\$12,000	\$8000-\$20,000	\$250,000-\$750,000	L3KVA	15	2/3
	— Real-time, communication oriented. SHAL-A assembler and INFORM. Modular basis with up to 6 computers.					
Philco 102M				1300VA	6.3	1/3
	— Same as Philco 102.					
Philco 1000	\$7000	\$6000-\$15,000	\$250,000-\$750,000	10KW	400	4-6
	— Scientific, real-time, business. Since built on modular basis, extra units easily added. OPAL program, utility routines, SORT, conversion programs, XMAS.					
Philco 2000-210	\$30,000	\$20,000-\$50,000	\$1,000,000-\$2,000,000	24KVA	800	10-12
	— Scientific, business, real-time. Computer is built on a modular basis and extra units are easily added. TAC, ALTAC, FORTRAN IV, COBOL, TOPS compilers.					
Philco 2000-211	\$35,000	\$25,000-\$55,000	\$1,500,000-\$2,900,000	24KVA	1300	10-12
	— Scientific, business, real-time. Computer built on a modular basis and extra units are easily added. TAC, ALTAC, FORTRAN IV, COBOL, TOPS compilers.					
Philco 2000-212	\$55,000	\$35,000-\$100,000	\$1,800,000-\$3,500,000	40KW	1300	10-12
	— Scientific, real-time, business. Extra units are easily added. TAC, ALTAC, FORTRAN IV, COBOL, TOPS compilers.					
Philco 213	\$78,000	\$55,000-\$180,000	\$3,000,000-\$6,000,000	50KW	1800	12-14
	— Scientific, real-time, business. Built on modular basis with extra units easily added. Multi-processing system, 240 KC tapes, fast drums and discs. FORTRAN IV, COBOL, etc.					
RCA 301	\$7000	\$4000-\$19,000	\$203,000-\$8,600,000	2.6KVA	400	4
	— Business, scientific. Assembly program, COBOL compiler, FORTRAN, File control processor.					
RCA 501	\$17,000	\$13,700-\$29,900	\$611,400-\$3,018,300	30KVA	1200	8
	— Business. Assembly and compiler programs. COBOL monitor.					
RCA 601	\$32,000	\$24,000-\$68,000	\$1,750,000	55KVA	900	12
	— Assembly program. File control processor, Executive system, Generalized sort and merge.					
RCA 3301	\$14,000		\$536,000	23.2KVA	900	5.3
	— Assembly, COBOL, FORTRAN IV, Executive Control system Sort/Merge, Report Program Generator available. Hardware and functional modularity. Units easily added.					
RCA Spectra 70/15	\$5000	\$2655 and up	\$125,350			
	— Assembly system and IOCS. Modular construction.					
RCA Spectra 70/25	\$8000	\$5820 and up	\$271,250			
	— Assembly system. Report program generator. Modular construction.					
RCA Spectra 70/35	\$8500	\$6940 and up	\$321,250			
	— Scientific, real-time, business, random access mass storage. COBOL, FORTRAN, Report program generation.					
RCA Spectra 70/45	\$14,000	\$8485 and up	\$394,000			
	— Scientific, real-time, business, random access mass storage systems. Same as Spectra 70/35.					

Digital Computers

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
RCA Spectra 70/46	\$26,000	\$18,900 and up	\$884,700			
— Scientific, real-time, business, time-sharing system and random access. COBOL, FORTRAN, Report program generator.						
RCA Spectra 70/55	\$20,000	\$13,900 and up	\$630,000			
— Scientific, real-time, business, random access mass storage systems. Same as Spectra 70/35.						
Raytheon 250		\$1200-\$1350	\$23,500+	115V	4	N
— Scientific, engineering. Floor space refers to computer and console only. Modular construction permits extra units to be added easily. SNAP assembly program, NELIAC compiler, FORTRAN II.						
Raytheon 520		\$2460+	\$94,000+	110V	24	N
— Scientific, real-time. Advanced Fortran I and II, assembler, monitor 1620 simulator.						
SCC 650	\$1500	\$1000-\$3000	\$15,000-\$25,000	110V	5	N
— Scientific, real-time. FORTRAN compiler. SPL 650 assembler.						
SCC 655	\$4000	\$2000-\$7000	\$30,000-\$100,000	115V	10	N
— Scientific, real-time. SPL 655 assembler. FORTRAN compiler.						
SCC 660	\$4000	\$2000-\$7000	\$30,000-\$100,000	115V	10	N
— Scientific, real-time. SPL 660 assembler, FORTRAN compiler.						
SCC 670	\$4000	\$2000-\$7000	\$30,000-\$100,000	115V	10	N
— Scientific, real-time. SPL 670 assembler. FORTRAN compiler.						
SDS-910	\$1790		\$53,000-\$83,000	.7KW	10	N
— Scientific, real-time. Assembler and FORTRAN II for either computer. ALGOL, Monarch Monitor Routine.						
SDS-920	\$2690		\$53,000-\$83,000	.9KW	10	N
— Same as SDS-910.						
SDS-930	\$5000	\$3200-\$10,000	\$100,000-\$250,000	4.7KVA	24	N
— Scientific, real-time, engineering applications. Symbol and Meta-symbol assembler, FORTRAN II, FORTRAN II routines.						
SDS-940	\$20,000	\$14,000-\$25,000	\$250,000-\$600,000	3KVA	22	N
— Macro assembler, symbol and Meta symbol. Modular basis. Conversational FORTRAN IV compiler.						
SDS-9300	\$7500	\$5000-\$12,000	\$150,000-\$300,000	4KVA	16	N
— Symbol and Meta symbol assembler, FORTRAN IV, FORTRAN II routines.						
SDS Sigma 2	\$2500	\$1500-\$4000	\$26,000-\$150,000	208VAC	14	N
— Scientific, real-time, on-line system control. Basic assembler, Math library. FORTRAN IV compiler. Modular basis.						
SDS Sigma 5	\$10,000	\$2500-\$20,000	\$100,000-\$800,000	208VAC	150-200	N
— Scientific, real-time, business applications. Basic assembler, Metasymbol assembler, Math library. FORTRAN, COBOL compilers.						
SDS Sigma 7	\$18,000	\$6000-\$30,000	\$250,000-\$1,250,000	208VAC	150-200	N
— Same as Sigma 2 plus universal time-sharing monitor.						
SEL 810A			\$23,950-\$300,000	115V	4.5	N
— Scientific, real-time, not real-time, process control.						
SEL 840A			\$54,500-\$500,000	3.5KW	12	N
— Scientific, real-time process control.						
SEMA 2000	\$700	\$550-\$1150	\$22,500-\$46,500	115V	4	N
— Real-time, business.						
SEMAC	\$1350	\$1200-\$2000	\$48,000-\$75,000	115V	16	
— Business. Built on modular basis with extra units easily added.						
Univac I	\$25,000	\$20,000-\$30,000				
— Scientific, real-time, business. Assembly programs: FLOW-MATIC, MATH-MATIC, FLEXI-MATIC, XI.						
Univac II	\$28,000	\$25,000-\$30,000	\$1,250,000-\$1,500,000	120KVA	2000	30
— Scientific, business. FLOW-MATIC, MATH-MATIC, XI assembly programs.						
Univac III	\$23,000	\$19,000-\$75,000	\$925,000-\$3,600,000	47KVA	750	127,500 BTU
— SALT assembly system, FORTRAN IV, COBOL compiler. Scientific, not real-time, business.						
Univac 490	\$25,000	\$18,000 and up	\$810,000 and up	61KVA	196	12
— Scientific, real-time, business. Extra units easily added. COBOL, SPURT, FORTRAN compilers. Floor space requirements refer to computer area.						
Univac 60/120	\$1350	\$740-\$1350	\$75,000-\$97,500	9KV	350	
— Scientific, business. Approx. 18 library routines available. Not built on modular basis, but minimum systems may be expanded by additional selection and program steps. Automatic verification.						

COST AND USE

NAME OF COMPUTER	Average Monthly Rental	Monthly Rental Range	One-Sum Price Range	Power	Floor Space — Sq. Ft.	Air Cond. — Tons
Univac 1004	\$1400	\$1150-\$1500	\$46,000-\$66,000	3KV 220V	190	8500 BTU output
	— Scientific, business. Basic card processor cabinet includes card reader, printer and processor. High-speed I/O devices.					
Univac 1050	\$5500	\$2500-\$15,000	\$100,800-\$600,000	10KVA	375	2000 cu.ft. min. air flow
	— Scientific, business, real-time. Memory capacity may be increased from 8K char. to 32K char. in increments of 4K char. The 1050 using IIIC tape units, is compatible with IBM 1410, 705, 7070, 7080, 7090 systems. PAL Assembly system COBOL and FORTRAN available. Modular and field expandable.					
Univac 1103A	\$35,000	\$21,500-\$45,000	\$922,000-\$1,900,000	82KVA	1800	20
	— Scientific. Extra units easily added. USE UNICODE compilers.					
Univac 1105	\$43,000	\$33,060-\$55,000	\$1,612,000-\$2,700,000	175KVA	3100	35
	— Scientific, real-time, business. AIMACO and UNICODE and USE compilers. Extra units easily added.					
Univac 1107	\$50,000	\$40,000-\$60,000	\$1,800,000-\$2,700,000	93KVA	1200	18
	— Scientific, real-time, business. ALGOL, FORTRAN compilers.					
Univac 1108	\$60,000	\$50,000-\$75,000	\$2,000,000-\$3,000,000	13KVA	1600	40,000 BTU
	— Scientific, real-time, non-real-time, business, time-sharing. COBOL, FORTRAN, ALGOL compilers.					
Univac 9200	\$1125	\$1040-\$2200	\$39,350-\$75,000	190-260V	240	70-75°
	— Not real-time, business. Modular basis.					
Univac 9300	\$3750	\$1565-\$9500	\$62,360-\$345,000	190-260V	240	70-75°
	— Assembler. RPG, FORTRAN, COBOL compilers.					
Univac File Computer I	\$15,000	\$8000-\$21,000	\$384,000-\$1,108,000	75KVA	1400	60
	— Scientific, real-time, business. FLAP assembly system.					
Univac File Computer II	— See Univac File Computer I.					
Univac Larc	\$135,000	\$135,000 and up	\$7,000,000 and up	350KVA	3000	90
	— Scientific, business, real-time. Second computer unit can be added. SAL assembly.					
Univac SS 80/90	\$8000			15KVA	800	4
	— Scientific and business. Extra units easily added. Assembly programs: COBOL, SOUP II, UNITRAN, PROGENY compilers. STEP is a modular version of the Solid State 80/90, for users not requiring a full system.					
Univac SS 80/90II	\$8500	\$6970-\$15,000	\$350,000-\$750,000	20-38KV	925	11
	— Scientific, business. S-4 assembly system. Up to 20 tape units may be employed through use of a second synchronizer.					
Z23				380V		N
	— Scientific, not real-time.					
Z25	— No information given.					
Z26	— No information given.					
Z31				380V		N
	— Scientific, not-real-time, business.					

ROSTER OF COLLEGE AND UNIVERSITY COMPUTER CENTERS

Following is a roster of college and university computer centers. Much of the information is based on returns from a current mailing and on information previously published in Computers and Automation.

In the following, each entry, if complete, contains: Name and address / Year information was checked / Purpose / Commercial Services (coml svc) / Equipment / Courses Offered / Remarks / Size of Staff (S) / Year established (E)

For computer identifications, see the survey of digital and analog and hybrid computers.

- Abraham Baldwin College, Center for Automation, Tifton, Ga. 31794 / *C 67
Academic program; administrative applications; community service / coml svc / Unit record equipment / 2-year terminal program with a degree / S 5 / E 63
- Academy of Aeronautics, La Guardia Airport, Flushing, N.Y. 11371 / *C 67
Educational / Burrough's E101 computer and flexowriter / Computer Concepts and Programming; Analysis of Circuitry / S 45 / E 32
- Akron, The Univ. of, The Computer Center, 302 E. Buchtel, Akron, O. 44304 / *C 67
Educational, research, and administrative support — data processing, computer and management sciences / coml svc / IBM 1620-60K, 2-magnetic tape and 3-disk drives; IBM 1401-4K, card-reader punch, and printer system; IBM 1130-8K, disk, card reader-punch, printer and plotter system / Computer-Science I and II, and Special Topics in Computer Science (by Math Dept.) / In fall of 1967, a 2-year associate degree program in Data Processing will be offered by the Community and Technical College; also an IBM 360/40, 256K system will be installed / S 45 / E 61
- Alabama, Univ. of, P.O. Box 2511, University, Ala. / *C 67
Education, research, service / Univac Solid-State 80; Univac 1004 with remote access to 1107; 5 remote access terminals for administrative computer; IBM 360/30 / Introduction to Computer Science; Programming; Numerical Analysis; Management and Marketing; Application courses / S 30 (all but 1 parttime) / E 61
- Alfred Univ., Computing Center, Alfred, N.Y. / *C 67
Research and education (undergraduate and graduate) / coml svc / IBM 1620/I, 40K, card, plus 1311 disk and printer; unit record equipment / Introduction to Computing Techniques / S 4 / E 63
- Amarillo College, Box 447, Amarillo, Tex. 79105 / *C 67
Education / Unit record equipment; IBM 1401 computer with disk and tape drives / Several data processing certificate and degree programs offered day and evening / S 6 / E 62
- Anderson College, Anderson, Ind. 46011 / *C 67
Education and administration / coml svc / IBM 1620 Model I with 1622 card reader-punch and 2 IBM 1311 disk drives, plus other peripheral equipment and punch card equipment / Introduction to Computers and Data Processing; Computers (Hardware Oriented); Numerical Analysis; Electronic Data Processing in Business / S 4 / E 65
- Angelo State College, Box 9308, San Angelo, Tex. 76901 / *C 67
Education; administration / IBM 1620 card I-O / Introduction to Computer Programming; Advanced Computer Programming; Machine Accounting; Electronic Data Processing; Statistics / Equipment speeded up; IBM 360 order postponed / S 5 / E 63
- Antelope Valley College, 3041 West Ave. K, Lancaster, Cal. 93534 / *C 67
Train computer programmers / IBM System 360/20, keypunches, sorter, MFCM, etc. / Data processing courses include: Electric Machine Accounting; Introduction to Computer Programming / S 2 / E 63
- Appalachian State Teachers College, Computer Center, Boone, N.C. 28607 / *C 67
Faculty and student research, administrative offices and coursework / IBM 1620 with peripheral and unit record equipment / FORTRAN Programming, Introduction to Computer Science, Technical Programming, Data Processing in Business / S 6 / E 63
- Arkansas, Univ. of, Computing Center, Fayetteville, Ark. 72701 / *C 67
Education and research / coml svc / IBM 7040, 7 tapes; IBM 1460, 2 tapes, 3 disk drives / Digital Computer Programming, Computer Organization and Programming, Numerical Methods, Introduction to Computers, Principles of Data Processing / S 15 / E 60
- Arlington State College - name changed to Univ. of Texas at Arlington, which see
- Atlanta Univ., P.O. Box 205, 223 Chestnut St., S.W., Atlanta, Ga. 30314 / *C 66
Registration and computing all finances / - / Intro. to Electronic Computers / S 3 / E 54
- Auburn Community College, Franklin St., Auburn, N.Y. / *C 67
Training data processing operators, programmers, systems and procedures personnel / coml svc / IBM 1401-8K, 8 keypunches, verifier, 2 sorters, reproducer, tab., collator, interpreter, computyper; 2 labs - Unit Record, Computer / Introduction to Data Processing Machines (Unit Record); Introduction to Computers; Systems & Procedures; Programming I & II; Computer Case Studies I & II; Math of Data Processing I & II; Numerical Methods and Fortran / S 4 / E 64
- Auburn Univ., Computer Center, Auburn, Ala. / *C 67
Research and education / coml svc / IBM 7040-1401; IBM 1620 / Programming Research and education / coml svc / IBM 7040-1401; IBM 1620 / Programming courses in Fortran and Cobol; Basic Computer Concepts / S 32 / E 58
- Augustana College, Rock Island, Ill. 61201 / *C 67
Education and administration / IBM 1130, IBM punched card equipment / Computer programming / S 5 / E 65
- Automation Institute of Philadelphia, 1622 Chestnut St., Philadelphia, Pa. 19103 / *C 67
Data Processing education on a post secondary level / IBM 1401; IBM unit record equipment / Computer Programming; Office Automation; Key punching / Formerly the Automation Div. of Pierce Junior College. September, 1967 delivery of IBM 360/20 / S 22 / E 59
- Bellarmino College, 2000 Noris Pl., Louisville, Ky. 40205 / *C 67
Education; preparation for CDP certificate / None but plan to use service bureau for supplementing course work / Accounting 405 Principles; Accounting 406 Systems and Programming / S 2 / E 62
- Beloit College Computing Center, Beloit, Wis. 53512 / *C 67
Acquaint Liberal Arts students with the versatile use of computers / coml svc / IBM 1802-16K, disk-card, remote capability / Programming for Engineers; FORTRAN Primer; Concepts of EDP; Languages / S 4 / E 62
- Bethany College, Box 232, Bethany, W. Va. 26032 / *C 67
Administrative and educational / IBM series 50; IBM 360-20 / Introduction to Data Processing / S 3 / E 63
- Bishop's Univ., Lennoxville, Quebec, Canada / *C 67
Research and teaching / IBM 1620-20K card input-output / Under revision / S no permanent / E 65
- Boise College, 1907 Campus Dr., Boise, Ida. / *C 67
All administrative and instructional areas / IBM 1401-1311 / 2-yr. programmer curriculum; FORTRAN for Math & Science Majors; Business Management Games / S 5 / E 66
- Bowdoin College, Computing Center, Brunswick, Me. 04011 / *C 67
Educational and administrative / coml svc / IBM 1620, 1622, 1623, 1443, 1311, Models 2 & 3 and 2 keypunches / FORTRAN Programming; Numerical Analysis; Mathematical Statistics; Linear Programming; Economical Statistics / S 3 / E 65
- Bradley University Computer Center, Holmes & Laura Aves., Peoria, Ill. / *C 67
Education for undergraduates and graduates / coml svc / IBM 1620-I; 1622-II; DPC 4620-II on-line printer; two IBM 1311 disk files; sorter and keypunches / Fortran Programming, Basic Assembler Programming; Graduate Program in Computer Science / S 5 / E 63
- Brigham Young Univ., Computer Research Center, Provo, Utah 84601 / *C 67
Student training, faculty and student research, administration data processing / coml svc / IBM 7040-tape; IBM 1401 / Computers and Their Use; Computer Program Languages; Algorithmic Languages and Compilers; Information Systems Analysis; and others / S 45 / E 58
- British Columbia, Univ. of, Computing Centre, Vancouver, B.C., Canada / *C 67
Education and research / coml svc / IBM 7040 / Undergraduate courses in Science and Engineering, M.S. in Computer Science / IBM 7044 on order for 1967; IBM 360-67 expected 1968 / S 35 / E 57
- Broome Technical Community College, Binghamton, N.Y. / *C 67
Education / IBM 1130 card I/O with disk cartridge and plotter / Introduction to Commercial Programming; Numerical Methods; Digital Computer Programming / S 3 / E 63
- Broward County, Junior College of, 3501 S.W. Davie Rd., Ft. Lauderdale, Fla.

College and University Computer Centers

- 33314 / *C 67
Education; institutional research; administrative applications / IBM 360/30; unit record equipment / Two-year technical degree and three-semester certificate program for programmers / S 12 / E 62
- Bucknell Univ., Freas-Rooke Computing Center, Lewisburg, Pa. 17837 / *C 67
Education / coml svc / IBM 1620 Model I with 2 Disks, plotter, printer, 60K, digital clock; 5-026's and 407 / Introduction to Computers; Programming; Numerical Analysis and Advanced Seminars / S 16 / E 61
- Calgary, Univ. of, Data Centre, Calgary, Alta, Canada / *C 67
University research, instruction and administration / IBM 360-Model 30F (64K) with 4 disk drives and 2 tape / Several computing science and extension courses / S 28 / E 60
- California at Riverside, Univ. of, Computing Center, Riverside, Cal. 92502 / *C 66
Academic research and education / coml svc / IBM 7040 with peripheral equipment / Computer Methodology and Programming Numerical Analysis; extension courses in Business and Scientific Programming / S 20 / E 63
- California State College at Hayward, 25800 Hillary St., Hayward, Cal. / *C 67
Instructional and research / IBM 1620-I, 1622-I; auxiliary equipment / some courses in Business & Economics; Physics & Chemistry use our facilities to a limited extent / S 3 / E 64
- California State Polytechnic College, San Luis Obispo, Cal. 93401 / *C 67
Undergraduate instruction and computational facilities for all departments / IBM 1620 Model I / Computer Science: Data Processing Programming, Systems Analysis, Systems Programming, Boolean Algebra, Numerical Analysis, etc. / S 5 / E 64
- California, Univ. of, Computer Center, Davis, Cal. 95616 / *C 67
Education and research on computer application and development / IBM 7044; Calcomp plotter, Model 750 / Introduction to FORTRAN IV Programming Language (non-credit) / S 22 / E 60
- Carleton College, Northfield, Minn. 55057 / *C 67
Education and administrative services / IBM 1620 card system; IBM 1401 card system; unit record equipment / FORTRAN, SPS and Numerical Analysis / S 4 / E 64
- Carroll College, Waukesha, Wis. 53186 / *C 67
Education / IBM 1620 Model I; 20K card system; 407; sorter, 2 key punches / Elementary Programming; Digital Computing; Numerical Analysis / S 4 / E 62
- Case Institute of Technology, University Circle, Cleveland, O. 44106 / *C 67
Education and research on software systems and languages / coml svc / Univac 1107 plus peripherals / Six, ranging from basic numerical methods to mathematical linguistics / S 15 / E 56
- Catholic Univ. of America, Computing Center, Washington, D.C. 20017 / *C 67
Instruction and research / coml svc / IBM 1620-60K with 2 disk drives and peripheral equipment / FORTRAN Programming / S 4 / E 61
- Central Connecticut State College, 1615 Stanley St., New Britain, Conn. / *C 67
Education and administration / IBM 1401 - 12K; two 1311's; 1403 printer; 1402 card read punch / FORTRAN, COBOL, Unit Record, Introduction to Computers / S 2 / E 66
- Central Florida Junior College, P.O. Box 1388, Ocala, Fla. 32670 / *C 67
Education, research, administration / IBM 1130, card read punch, disk, printer, IBM unit record / Basic Data Processing; Introduction to Programming / S 3 / E 63
- Central Missouri State College, Data Processing Center, Warrensburg, Mo. 64093 / *C 67
Teaching, research and administrative / IBM 1401-12K; IBM 1620-40K / Seven courses in data processing, ranging from Introduction to Unit Record Equipment to Data Processing Field Project; four computer courses in Business General Management; and three mathematics computer courses / S 9 / E 61
- Central Washington State College, Ellensburg, Wash. 98926 / *C 67
Administration and education / IBM 1620-1622, IBM 360/20 and peripheral equipment / Elementary Programming; Advanced Programming; Numerical Analysis; Automated Office Practice / S 11 / E 64
- Cerritos College, 11110 E. Alondra Blvd., Norwalk, Cal. 90651 / *C 67
Instructional, student records and administrative statistics / Honeywell H-200, IBM EAM, optical IBM 1230 data collection and analysis / Data processing "majors"; Assembly Language, FORTRAN / Adding COBOL Fall 1967 / S 6 / E 62
- Chaffey College, 5885 Haven Ave., Alta Loma, Cal. 91701 / *C 67
Education / IBM 1401 disk computer; keypunches, verifier, sorter, collator, interpreter, reproducing punch / Introduction to Data Processing; Computer Programming; Systems / S 4 / E 66
- Chicago State College, 6800 S. Stewart Ave., Chicago, Ill. 60621 / *C 67
Administration, education (teaching of 24 graduate hours in Data Processing), research / IBM 1401-16K with 4 tape drives; 1230 test scoring machine; unit record installation / Eight 3-hour graduate level courses; proposal pending for MBA in Data Processing / S 13 / E 1868-school; 1964-courses
- Chicago, Univ. of, Computation Center, Chicago, Ill. 60637 / *C 66
Research and education / 7094/7040 execution/peripheral processing system / Committee on Information Sciences offers S.M., Ph.D. program / CHAOS system for 7040 peripheral processing locally developed, also math subroutines for IBM 7000 series and System 360 / S 60 / E 62
- Cincinnati, Univ. of, Computing Center, Cincinnati, O. / *C 67
Computer services to the entire University / IBM 1620 with 40K core, 1311 disk; 1410, five 729-II tapes, 1403 printer; 7040(16K)-1401, nine 729 tapes, printer, etc.; System 360/40, 131K, 5 tapes, three 1311 disks / None / S 30 / E 66
- The Citadel, The Military College of South Carolina, Charleston, S.C. / *C 67
Education and administration / coml svc / IBM 1620 computer system with disk pack, FORTRAN on 1620; IBM 1401 card system, basic Auto-coder on 1401 / Basic programming to students at night on 1401; basic programming to day and night students / S 8 / E 64
- Clark Univ., 950 Main St., Worcester, Mass. 01610 / *C 67
Public Health Research / IBM 1620-40K, 407, sorter / 1620 FORTRAN, 1620 Machine Language, and SPS; Numerical Analysis / S 6 / E 63
- Clarke College, Dubuque, Ia. 52001 / *C 67
Education and research / IBM 1130 installed in May (replaces 1620) includes printer, paper-tape I/O, disk storage, 2 Friden Flexowriters and a Bi-Tran 6 computer trainer (Fabri-Tek) / Introduction to Computer Sciences; Information Science; Computer & Programming Systems; Theory of Automata; Systems Simulation; Heuristic Programming; Numerical Analysis I & II; Constructive Logic / Undergraduate minor in c.s. may be combined with any major; adult courses & special group seminars / S 6 / E 65
- Clarkson College, Potsdam, N.Y. 13676 / *C 67
Education and research / IBM 1620 Model I; IBM 360/44 / Fortran programming; Computer science / S 7 / E 60
- Clemson Univ. Computing Center, Clemson, S.C. / *C 67
Teaching and research / coml svc (limited) / IBM 360/40 / Computer Programming; Computer Principles, Numerical Methods, Formal Languages / S 10 / E 61
- Colorado School of Mines, Golden, Colo. 80401 / *C 67
Education and research / CDC 8090, LGP-30 / Programming for all students, computing taught as integral part of engineering education by most departments / S 7 / E 64
- Compton College, 1111 E. Artesia Blvd., Compton, Cal. 90221 / *C 67
Instructional (A.A. degree and Certificates in keypunching and programming); business (students records to accounting) / UNIVAC 1005-4K and Optical Scanning Punch Computer Laboratory / Introduction to Data Processing; Business Data Systems; External Computer Programming; Internal Computer Programming; Programming Techniques and Languages; Key punch Laboratory; Business Data Systems; Report Program Generator; Real-Time Systems; COBOL; FORTRAN; Management Reporting / Compton is a junior college / S 2 / E 65
- Concordia College, Moorhead, Minn. 56560 / *C 67
Introduction to electronic data processing and research / Coml Svc / IBM 1620-I, sorter, collator, 407 accounting machine / Elementary Programming (Fortran and SPS); Numerical Methods using computer; 3M Company course in data processing for Business, Education students / S 4 / E 63
- Connecticut, Univ. of, University Computer Center, Storrs, Conn. 06268 / *C 67
Computer facilities for all types of University research and education / IBM 7040 with 8 tapes, 1301 disk, 1401 I/O; IBM 1620 with disk and

College and University Computer Centers

- plotter; PACE 231R / FORTRAN programming workshops given 6 times a year / 50 courses using computers are taught per year; IBM 360/65-7 on order / S 11 / E 61
- Dalhousie Univ., Halifax, Canada / *C 67
Education / coml svc / IBM 1620; IBM 1800 / Numerical Analysis / S 10 / E 62
- Dartmouth College, Kiewit Computation Center, Hanover, N.H. / *C 67
Education and research / GE-625 time sharing system / No formal courses / S 20 / E 64
- Dayton, Univ. of, Computer Facility, Dayton, O. / *C 67
Instruction, research, administrative faculty, staff and students / Burroughs 220, NCR 304B / Undergraduate degree in Computer Science; graduate degree in Information Science / S 8 / E ?
- Delaware, Univ. of, Computing Center, Newark, Del. 19711 / *C 67
Education and research / coml svc / SDS 9300-DES-1; IBM 1620-II; EAI 231R-V, EAI TR-48; IBM 1401 / Undergraduate and graduate degree programs in computer science / S 25 / E 57
- Del Mar Technical Institute, Engineering Technology, Corpus Christi, Tex. 78404 / *C 67
Education of engineering technicians / Burroughs 205 Datatron; IBM 704; IBM 1401 (Fall 1967) / Computer Programming; Computer Circuit Applications / S 3 / E 61
- Denison Univ., Granville, O. / *C 67
Education; faculty and student research / IBM 1130 with card input and on-line printer; 8K memory / FORTRAN Programming; Elementary Numerical Methods; Numerical Analysis / S 3 / E 64
- Denver, Univ. of, Denver, Colo. 80210 / *C 67
Research and education / coml svc / Burroughs B5500; time sharing added in January 1967 / Programming; Numerical Analysis / Engineering and business courses use computer. Also, doing research in computer-aided instruction / S 14 / E 58
- De Paul Univ., 25 E. Jackson, Chicago, Ill. / *C 67
Administrative and student research / IBM 1401 - 1311 / Introduction and Computer Programming Courses / S 5 / E 64
- Detroit College of Business, 4801 Oakman Blvd., Dearborn, Mich. 48126 / *C 67
Education / Unit record equipment -- rent computer time / Fundamentals of Data Processing; Punch Card Accounting; Introduction to Electronic Computers; Computer Programming I & II; Advanced Computer Languages; Systems & Procedures I & II / S 3 / E 59
- Devry Technical Institute, 4141 W. Belmont Ave., Chicago, Ill. 60641 / *C 67
Student and educational use / Rem. Rand 409-2R; IBM 1401 / Digital and analog courses / S 6 / E 31
- East Tennessee State Univ. Computer Center, Johnson City, Tenn. 37601 / *C 67
Education, research and administration / IBM 1620-22-23; IBM 1230 w/ IBM 534; IBM 870; IBM 026 / Minor in Computer Science as of Fall, 1967, including programming courses for 3 languages; courses are offered in several disciplines that require computer use / IBM 1401 system on order / S 4 / E 62
- East Texas State Univ., Commerce, Tex. / *C 67
Education, research, administration / IBM 1401-16K tape-disk oriented system and unit record equipment / Introduction to Computer Science; Digital Computer Programming; Computer Languages; Numerical Analysis; Advanced Programming; Punch-Card Machines / S 10 / E 63
- Evansville College -- name changed to Univ. of Evansville, which see
Evansville, Univ. of, Evansville, Ind. 47704 / *C 67
Educational and institutional data processing / IBM 1620, 1622, 1443, and peripheral equipment; IBM 515 with Mark Sensing / Introduction to Programming; Digital Computing; Numerical Methods; 5-6 Data Processing courses / formerly Evansville College / S 3 / E 63
- Fayetteville State College, Fayetteville, N.C. / *C 67
Teaching device in statistics / Monroe computer, on loan; also use the computer at Fort Bragg and North Carolina State Univ. at Raleigh, N.C. / No-- taught in connection with a class--student-trainees teach other students to operate and the language / S 1 / E 64
- Flint Community Junior College, Computer Center, 1401-E. Court St., Flint, Mich. 48503 / *C 67
Instruction for students; faculty and student research / IBM 1620 and 1622; IBM unit record equipment / Eleven courses in Business Electronic Data Processing and two courses by the Science and Mathematics Department / S 2 / E 63
- Florida, Univ. of, Computing Center, Gainesville, Fla. / *C 67
Education and research / coml svc (limited) / IBM 360/50, IBM 709, IBM 1401, Calcomp 363 / FORTRAN Programming / S 40 / E 62
- Fort Hays Kansas State College, Hays, Kan. 67601 / *C 67
Process applications of registrar and business office / IBM 1620 and peripheral equipment / Vocational education courses in unit record operation; Computer Programming; Survey of Data Processing; Scientific Computer Programming / IBM 1401 System, 16K, 2 Disk drives due in Aug. 1967 to replace 1620 system / S 4 / E 63
- Franklin & Marshall College, Lancaster, Pa. 17604 / *C 67
Research and education / IBM 1130-8K, disc, cards / None / S 1 / E 64
- Fullerton Junior College, 321 E. Chapman Ave., Fullerton, Cal. / *C 67
Education and training for operators and programmers / IBM 1620 and peripheral equipment, use of Honeywell 200 / Survey of Data Processing, Introduction to Data Processing, Key punch training, Programming, Systems, Work Experience / S 10 / E 61
- Gallaudet College, Washington, D.C. 20002 / *C 67
Education; research on deafness and related subjects / IBM 1620 Model I and peripheral equipment / Programming courses / System 360, Model 30, 32K, 2 disk on order--scheduled for Nov. 1967 / S 4 / E 62
- General Motors Institute, 1700 W. Third Ave., Flint, Mich. 48502 / *C 67
Accredited engineering college / IBM 1620-II 40K card, 1 disk, 1627 graph plotter, 1402 tape punch; IBM 1401-12K, 3 disk drives, 1402 card reader/punch, 1403 printer; punched card equipment, 2 on-line teletypes; AD-40 & AD-64 analog computers / Introduction to Computing, for all students; Numerical Methods; Advanced Digital Computer Programming; most engineering courses use computers / S 12 / E 61
- Georgetown Univ., Computation Center, 37th and O Sts., N.W., Washington, D.C. 20007 / *C 67
Educational and research / IBM 1620 Model II computer with 60K core storage, IBM 1311 disk drives, peripheral equipment / Physics Dept. offers credit courses; informal, non-credit courses offered by Center / IBM 360/40 to be installed September 1967 -- will replace the 1620 and have tape and disk auxiliary storage capabilities / S 10 / E 63
- George Washington Univ., Computer Center, 2013 "G" St., N.W., Washington, D.C. 20006 / *C 67
Education and research / IBM 360 Model 40, 128K, Universal instruction set, 4 disk drives (2311), 4 tape drives (2400, 800 BPI), 1403 printer, 2540 card read-punch / Number of courses with computer labs / S 8 / E 63
- Georgia Institute of Technology, Atlanta, Ga. 30332 / *C 67
Education and research / coml svc / Burroughs 5500 (2); UNIVAC 1108 / Non-credit seminars; computation courses given in Schools of Information Science, Industrial Engineering, Industrial Management, and Electrical Engineering / S 75 / E 55
- Georgia State College, Computing Center, 33 Gilmer St., S.E., Atlanta, Ga. 30303 / *C 67
Instruction in computer science and assistance with faculty research / coml svc / IBM 7040 with 32K main memory; IBM 1301 disk storage unit; seven IBM 7330 tape drives; IBM 1402, 1403 / Introduction to Computer Programming and Logic; Computer Languages / S 21 / E 59
- Georgia, Univ. of, Computer Center, Athens, Ga. 30601 / *C 67
Education and research / coml svc / IBM 360/65, IBM 7094; two IBM 1401's; IBM 1620 / Five courses / S 80 / E 58
- Grays Harbor College, Aberdeen, Wash. 98520 / *C 67
Train programmers through a terminal, two-year vocational program / IBM 1620 card system with 1311 disk storage; IBM unit record equipment / Unit Record Operations & Wiring Computer Programming; Data Processing Applications; System Analysis; Systems Development & Design / S 2 / E 64
- Hawaii, Univ. of, Statistical and Computing Center, 2525 Correa Rd., Honolulu, Hawaii 96822 / *C 67
Academic research, teaching and administration / coml svc / IBM 1401, IBM 7040, IBM 360/50 / Short courses in several languages and credit courses - computer oriented / S 18 / E 60
- Heald College Automation Center, 1235 Van Ness Ave., San Francisco, Cal. 94109 / *C 67
Education / IBM 360, Model 20, 8K, 2 Disk; 17 keypunch machines; printing keypunch, verifier, accounting machine; reproducing punch; collator; sorter / Card Punch, Tabulating, Computer Operators and Computer

College and University Computer Centers

- Programmers; planning a Systems & Procedure course / Heald College was established 1863 / S 7 / E 59
 Hinds Junior College, Raymond, Miss. 39154 / *C 67
 Teaching and administrative work / IBM 1620; unit record equipment / Basic Data Processing; Basic Computer; Systems Design; etc. / S 7 / E 63
 Hofstra Univ., Computer Center, Hempstead, L.I., N.Y. 11550 / *C 67
 Serving the academic functions of the University / IBM 1130 system, 407, 7 keypunch machines, verifier, interpreter and reproducer / Given only by existing Academic Departments, such as Business, Engineering and Psychology / Student training and faculty research / S 6 / E 63
 Holy Cross, College of the, Data Processing Center, Worcester, Mass. 01610 / *C 67
 Undergraduate education, faculty research, administrative services / IBM 1620, 1622, 1311 (2), 1443, unit record equipment, burster, deleaver / Computer Programming and Languages (3 credit elective) / S 5 / E 65
 Humboldt State College, Computer Center, Arcata, Cal. 95521 / *C 67
 Education / IBM 1620 Model I-40K / Business, Mathematics, Extension Courses / S 2 / E 64
 Idaho, Univ. of, Computer Center, Moscow, Ida. 83843 / *C 67
 General university computing / IBM 1620-40K; two 1311 disk files; unit record equipment / Computer programming and applications / IBM System / 360/40, 65K, three 2311 disk drives will replace the above in November 1967 / S 11 / E 62
 Illinois Institute of Technology, 10 West 35th St., Chicago, Ill. 60616 / *C 67
 Education, research, administration / coml svc / IBM 360/40 with IBM 2702 / Seven undergraduate and six graduate courses in Information Science; very extensive secondary school Computer Science program / S 30 / E 60
 Illinois Teachers College (South) - name changed to Chicago State College, which see
 Illinois, Univ. of, Department of Computer Science, Urbana, Ill. 61801 / *C 67
 Education and research in design of computers and of their components, methods of computer use and related mathematical problems; research and instructional use by students and faculty / IBM 360/50; IBM 360/75; IBM 7094; Illiac II / Twenty-nine courses range from Introduction to Automatic Digital Computing; to Thesis Research for Master's and Doctoral candidates / Illiac III and Illiac IV under development / S 32 / E ?
 Indiana University of Pennsylvania, Clark Hall, Indiana, Pa. 15701 / *C 67
 Education, research, student and university administration / IBM 1620-1622; peripheral equipment / Computer Programming; Numerical Analysis; Automatic Data Processing (for certified teachers only) IBM 360 to be installed December 1967 / S 5 / E 63
 Indiana University Research Computing Center, HPER Bldg., Bloomington, Ind. 47401 / *C 67
 Research and education / CDC 3600-CDC 3400 with shared core-65K and peripheral equipment / 3600 Fortran; Introduction to Computing / courses are non-credit / S 30 / E 54
 Iowa, State College of, Cedar Falls, Ia. *C 67
 Service to the college on all phases / IBM 1401-16K and peripheral equipment; IBM 1620-20K / Basic machine (unit record) and computer programming, "Elements of Data Processing" / Center is used for production and some demonstrations / S 10 / E 49
 Iowa State Univ., Computation Center, 125 Service Bldg., Ames, Ia. 50010 / *C 67
 Scientific computing, computer science research, administrative data processing / coml svc / IBM 360 Model 40 & Model 50; IBM 1401; 2 SDS 910 and IBM 1401 in Ames Lab. / All academic levels of Computer Science / S 45 / E 62
 Iowa, Univ. of, University Computer Center, Iowa City, Ia. 52240 / *C 67
 Research and education / coml svc (limited) / IBM 7044-32K, nine 729 V & VI tape units (2 switchable), 1301 disk, 1622 card reader; IBM 1401, 1402 card reader, 1403 printer / Non-credit short courses, University courses especially Computer Science / Approx. 1200 projects with 10,000 runs/month. System 360-65, 262K bytes, to be installed in June replacing 360/40 / S 25 / E 58
 John Carroll Univ., University Heights, Cleveland, O. 44118 / *C 67
 Research, academic work, administrative systems / coml svc / GE-215-8K, four tapes, reader, punch, printer, console typewriter / Numerical Methods, FORTRAN, COBOL under continuing education / S 3 / E 67
 Johns Hopkins Univ., 34th & Charles Sts., Baltimore, Md. 21218 / *C 67
 Computer services for education and research / IBM 7094 - 1401 / Informal courses in FORTRAN IV, BASIC, other programming languages; courses are given by Academic Departments / Data link no longer used - 7094 and 1401 on Homewood Campus / S 20 / E 59
 Kalamazoo College, 1200 Academy, Kalamazoo, Mich. 49001 / *C 67
 Education and administrative / coml svc / IBM 1620 - II, 1311-1622-20K; IBM punch card equipment / Programming; Numerical Analysis / S 2 / E 64
 Kellogg Community College, Battle Creek, Mich. 49016 / *C 67
 Training programmers and unit record supervisors / IBM 1401 -12K, -1403, 1402, two 1311's / Autocoder, COBOL, RPG, FORTRAN / S 3 / E 63
 Kent State Univ., Computer Center, 202 Merrill Hall, Kent, O. 44240 / *C 67
 Education and research / IBM 1620, 1622, 40K; Honeywell 2200 -65K, 4 tapes, reader, printer, punch / Math; Industrial Production; Accounting / S 8 / E 63
 King's College, Wilkes-Barre, Pa. / *C 67
 Education / coml svc / IBM 1620-1311 and unit record equipment / Electronic Data Processing; FORTRAN Programming; Operations Research; Linear Programming / Major program (B.S. degree) offered in Data Processing / S 3 / E 61
 L. A. Harbor College, 1111 Figuena Pl., Wilmington, Cal. 90744 / *C 67
 Education / IBM 1620 card system / Programming-Scientific, beginning and advanced / S 4 / E 62
 Lansing Community College, 419 N. Capitol Ave., Lansing, Mich. 48914 / *C 67
 Administrative work and education / coml svc / IBM 1620 and peripheral equipment / Introduction to Data Processing; 1620 Programming; 1401 Autocoder; COBOL; FORTRAN; System Development / S 14 / E 64
 Lee College, Box 818, Baytown, Tex. 77520 / *C 67
 Instruction and administration / IBM 1401; punch card equipment / Introduction to Data Processing; Programming I and II; Unit Record Equipment Operations; Accounting Systems; etc. / S 4 / E 63
 Lehigh Univ., Bethlehem, Pa. / *C 67
 Education and research / GE 225 and remote sites by cooperative arrangement / Engineering, Math and Accounting Departments offer programming, languages, operating systems and information system courses / S 12 / E 57
 Lewis College, Educational Data Center, Route 53, Lockport, Ill. 60441 / *C 67
 Educational needs / coml svc / Honeywell 200 -20K, 5 tape computer, 500 points IBM tab equipment / Fundamentals of Data Processing; Business Data Processing (COBOL) / S 12 / E 64
 Loma Linda Univ., Scientific Computation Facility, Loma Linda, Cal. / *C 67
 Research, education, statistical computation / IBM 1620 Model II with peripheral equipment / Non credit programming course, 2-hr credit course in data processing / access to IBM 360 -75 at UCLA by means of Western Union Broadband / S 8-10 / E 64
 Long Beach City College, 4901 E. Carson St., Long Beach, Cal. 90808 / *C 67
 Education of college level students / IBM 1620, 1311 disks and punch card equipment; all items of educational accounting machines / Principles of Data Processing, Computer Programming, FORTRAN, COBOL S/5, 360 RPG, etc. / S 261 / E 27
 Louisiana Polytechnic Institute Computing Center, Box 2215 Tech. Sta., Ruston, La. 71270 / *C 67
 Instruction, research, administrative data processing / coml svc / IBM System 360-30, disks and tapes, IBM 1620 -60K, disk and peripheral equipment / Supports all undergraduate and graduate courses in programming and data processing; evening seminars in Computer Programming and Machine Operation / S 8 / E 61
 Lower Columbia College, Longview, Wash. / *C 67
 Educational data processing / IBM 1401-1311 disk system / 2-yr. curriculum leading to Assoc. Tech Arts in Data Processing / S 5 / E 64
 Loyola College, 7141 Sherbrooke St. W., Montreal, Que., Canada / *C 67
 Educational / IBM 1620, card 20K / Computing Science; FORTRAN Programming; Elementary Numerical Analysis / S 4 / E 64
 Lyons Township High School Dist 204, 100 S. Brainard Ave., La Grange, Ill. 60525 / *C 67
 Data Processing training for High School and Adult Evening; High School administration / IBM unit record (Series 50); Burroughs B283 / High School vocational courses, Unit Record & Computer; High School Math (FORTRAN); adult evening school / S 3 / E 65

College and University Computer Centers

- Manatee Junior College, 5840 26th St. W., Bradenton, Fla. 33505 / *C 67
Education (2 year Associate Degree & 1 year certificate); administrative for College and County School Board / IBM 360, Model 30; IBM 1620; peripheral equipment; unit record equipment / Introduction to Data Processing; Unit Record Equipment; Data Recording Machines; Data Processing Applications; Basic Computer Concepts; Computer Programming; Systems Development & Design; Advanced Programming / S 11 / E 62
- Manitoba, Univ. of, Winnipeg, Manitoba, Canada / *C 67
Research and education / coml svc / IBM 1620-disc; IBM 360-65, 4 disc, 2 tapes; PDP-9; communications facilities, etc. / M.S. (computer science); Undergrad electives: Programming, Numerical Analysis, Statistics / S 40 / E 64
- Mansfield State College, Mansfield, Pa. 16933 / *C 67
Administration and student class work / IBM 1620, 1622, 1443; unit record equipment / Computer Programming, Numerical Analysis & Programming / S 5 / E 62
- Marquette University Computing Center, 1515 W. Wisconsin Ave., Milwaukee, Wis. 53233 / *C 67
Research and education / coml svc (very limited) / IBM 7040; misc. / Various computer courses in several schools and colleges / S 11 / E 58
- Marshall Univ., Huntington, W. Va. 25701 / *C 67
Education, research, administration / coml svc (not actively) / IBM 1620-I with card I/O, 40K memory, three 1311 disk drives; 1443 printer; 1232 optical scanner / General Engineering, Business Applications of Data Processing; Computational Methods, FORTRAN & Math Methods / S 12 / E 64
- Maryland, Univ. of, Computer Science Center, College Park, Md. 20740 / *C 67
Computational facilities to education and research / IBM 7094; two 1401's - IBM 360-30 / 8 courses approved; approval being sought for 18 more / Developing curriculum in Computer Science Courses; M.S. degree soon / S100 / E 63
- Massachusetts Institute of Technology, Computation Center, Cambridge, Mass. / *C 67
Central educational and research facility / IBM 7094 with time sharing, IBM 360-65 / S 55 / E 56
- Massachusetts, Univ. of, Research Computing Center, Amherst, Mass. / *C 67
Provide computing facilities for the university / CDC 3600-32K, 2 drums, 4 tapes; DEC PDP-8-4K, 2 disk packs; 25 remote teletypes / none / future plans include time-sharing / S 18 / E 61
- Memphis State Univ., Memphis, Tenn. / *C 67
Research and instruction / coml svc / IBM 1620-1311, IBM 1401, four 7330's / two programming courses; Numerical Analysis; Engineering Analysis; Systems / S 6 / E 63
- Mesa College, Grand Junction, Colo. 81501 / *C 67
Student instruction; college accounting and records / coml svc / IBM 1620 with disk; tab equipment thru 407 with storage / 2-yr Data Processing Program; plus courses in Key-punching, Tabwiring, Operation, Programming, Data Processing Survey / June 1967 conversion to IBM 1401, 12K, 2 disk / S 5 / E 62
- Metropolitan Junior College, 560 Westport Rd., Kansas City, Mo. 64111 / *C 67
Educational and service for college / IBM 1401 tape-disc system; IBM 360-30 on order / Computer Programming; Programming Languages; Systems Design; FORTRAN; COBOL; RPG; ALGOL / S 6 / E 64
- Miami University Computer Center, Oxford, O. 45056 / *C 67
Computing services for instructional program and faculty-student research / IBM 1620, 1311 / Formal instruction by academic department of System Analysis; Computer Center offers seminars / IBM System 360 Model 40, August 1967 / S 9 / E 59
- Miami, Univ. of, Coral Gables, Fla. / *C 67
Education and research / coml svc / IBM 7040/1401 computing system/Numerical analysis, Computer Programming, Computer Applications, Computer Simulation Systems / Will receive delivery of IBM 360, Model 50 computer in December 1967 / S 15 / E 65
- Michigan State Univ., Computer Center, East Lansing, Mich. 48823 / *C 67
Service and research / coml svc / CDC 3600 / 3000 students in associated programming courses / S 75 / E 56
- Middle Tennessee State Univ., Murfreesboro, Tenn. 37130 / *C 67
Education, research, school administration and records / coml svc / Recomp II digital computer; Honeywell 1200; Geda analog; tab equipment / Four courses in programming and many computer-oriented courses in Math and Business / S 9 / E 62
- Minnesota, Univ. of, Duluth, Minn. 55812 / *C 67
Provide computer services for research and instruction / IBM 1620 with 60K core storage, 1311 disk storage drive, 1443 line printer; peripheral unit record equipment / Math; Computer Programming (3 cr/quarter); Bus & Econ; Accounting Systems & Data Processing; Ed. Psych.; Data Processing in Education / S 2 / E 65
- Missouri at Rolla, Univ. of, Rolla, Mo. 65401 / *C 67
Mathematical and scientific research; undergraduate and graduate instruction / coml svc / IBM 360 Model 40 digital computer system with 131,000 bytes, 4 disk storage drives, 2 magnetic tape units, 1000 cpm reader, 300 cpm punch, 1100 lpm printer and remote communications terminals with display and typewriter output / Numerical Analysis, Operations Research, Statistics, Matrix Computations, Linear Programming, Business Data Processing / B.S. and M.S. degrees in Computer Science / S 60 / E 60
- Monmouth College, 700 E. Broadway, Monmouth, Ill. 61462 / *C 67
Administrative registration, student accounting, alumni records / IBM unit record equipment / - / S 2 / E 66
- Monterey Peninsula College, 980 Fremont, Monterey, Cal. 93940 / *C 67
Education / coml svc / IBM 1620, 407 shop; IBM 1401, 1231 shop / EAM and programming instruction / S 10 / E 61
- Montreal, Université de, Case postale 6128, Montreal, Quebec, Canada / *C 67
Research and training / coml svc / CDC-3400; CDC-3100 and peripheral equipment / M.S. in Computer Sciences / S 36 / E 64
- Muhlenberg College, Allentown, Pa. 18104 / *C 67
Education / coml svc (some) / Burroughs 205 with magnetic tape; IBM sorter and keypunch; IBM line printer and collator / Fundamentals of Computer Programming / S 2 / E 65
- Nassau Community College, Stewart Ave., Garden City, N.Y. / *C 67
Educational / IBM unit record equipment and a 1401, 1402, 1403, 1406, 7330 (4), and a Digiac / Introduction to Computer Science; Scientific Programming; Punched Card Data Processing; Introduction to Computers; Computer Programming I and II; Advanced Computer Programming Systems / S 18 / E 66
- Naval Research Establishment, Grove Street, Dartmouth, Nova Scotia, Canada / *C 67
Computation and data reduction for research programming in hydrodynamics, acoustic signal processing, transducer design, oceanography / Ferranti Packard 6000 general purpose digital time sharing computer, 16K (24 bit word) core store, paper tape I/O, line printer, magnetic tape storage, A/D and D/A converters / - / Open shop - programming done by research scientists and technicians / S 5 / E 15
- Newark College of Engineering, Newark, N.J. 07102 / *C 67
Education and EDP services for college research / coml svc / IBM 1620-I; IBM 1620-II, 40K, 2 disks and printer / Programming and Numerical Analysis; FORTRAN Programming / S 8 / E 61
- New Hampshire, Univ. of, Computation Center, Kingsbury Hall, Durham, N.H. / *C 67
Research and education / IBM 1620 with 2 tape drives; IBM 360/40 / Numerical Methods and Computers, 16 other courses / S 16 / E 61
- New Haven College, 300 Orange Ave., West Haven, Conn. / *C 67
Education / Lease line to GE 235; Unit record IBM facilities / Programming; Introduction to Computers (Engineers); Business Games; B.S. in Industrial Administration - computer option / IBM 1130 (Fall 1967) / S 80 / E 20
- New Mexico State Univ., University Computer Center, University Park, N.M. 88001 / *C 67
Academic, instructional and research / coml svc / IBM 1130; CDC 3300 / Computer Programming I, II, III / S 30 / E 65
- New York at Albany, State Univ. of, Albany, N.Y. 12203 / *C 67
Education and research / CDC 3100 / Introduction to Computer Science; Computer Organization; Programming Languages; Systems Programming; Numerical Methods / S 30 / E 65
- New York at Alfred, State Univ. Of, Agricultural & Technical College Data Processing Dept., Alfred, N.Y. 14802 / *C 67
Education, business data courses / IBM 1620/1622; System 360 Model 20/2560/2203; peripheral equipment; unit record equipment / Unit Record, Computer Programming, Systems, Management / AAS degree in business data processing / S 10 / E 63

College and University Computer Centers

- New York at Bronx, State Univ. of, Maritime College, Ft. Schuyler, Bronx, N.Y. 10465 / *C 67
 Instructions in programming; research (staff and students) / IBM 1130 with disc, card reader, printer, key-punches, sorter / FORTRAN Programming (1 hr. a week, 1 semester) / S 4 (part-time) / E 61
- New York at Brooklyn, State Univ. of, Downstate Medical Center, 450 Clarkson Ave., Brooklyn, N.Y. 11203 / *C 67
 Hospital information system, student records, scientific computation / IBM 1620, 1410 coupled to 1440 real time system, 108 pieces of tele-processing equipment / Degree in Computer Science; staff (medical) on use of computers for Scientific problems / S 58 / E 63
- New York at Cobleskill, State Univ. of, Agricultural & Technical College, Cobleskill, N.Y. 12043 / *C 67
 Education, particularly in programming, and supervisory responsibilities operations / IBM 1401 with 1311 disk drive / The Introductory Course; 3 courses in Programming; Functional Wiring / S 4 / E 64-65
- New York at Morrisville, State Univ. of, Agricultural & Technical College, Morrisville, N.Y. / *C 67
 Training junior programmers for business; administration data processing / coml svc (educational institutions only) / IBM 1401-16K, 2 disk; standard unit record, IBM series 50 / Full curriculum in Unit Record; Autocoder; FORTRAN IV; COBOL; RPG / S 5 / E 66
- New York at Plattsburgh, State Univ. of, Plattsburgh, N.Y. / *C 67
 Instruction / IBM 1440 with 10 1050's / Computer Science / S 5 / E 65
- New York at Syracuse, State Univ. of, College of Forestry, Syracuse, N.Y. 13210 / *C 67
 Education and research / IBM 1620 Model II, 60K, 2 disk drives, hi-speed card I/O, 1627 plotter / Introduction to Computer Programming; Concepts & Applications / S 5 / E 62
- New York College at Oswego, State Univ. of, Piez Hall, Oswego, N.Y. 13126 / *C 67
 Instruction, research, administrative applications / IBM 1130, Model II, 8K, card and disk I/O; IBM 082 card sorter, 1132 on-line printer, four IBM 029 printing card punches / Mathematics and computer science programming for students with and without calculus background / S 4 / E 64
- New York Univ., Heights Academic Computing Facility, University Heights, New York, N.Y. 10453 / *C 67
 Education; unsponsored and academic research / IBM 360 Model 30, 64K; (2) 2311 disk files; 250 cps communication link, 5 typewriter terminals / Humanities; Data Processing; Scientific Computation courses / S 9 / E 61
- North Dakota State School of Science, Wahpeton, N.D. 48075 / *C 67
 Education of business oriented computer programmers / coml svc / IBM 1620 - 20K, card-1443; punch card equipment / Electromechanical Machines, Data Processing Applications & Systems, 5 terms of Computer Programming, FORTRAN, Key punch / S 3 / E ?
- North Dakota State Univ., Fargo, N.C. / *C 67
 Educational, research / coml svc / IBM 1620 - 40K, Card I/O; IBM 1311 magnetic disk drive / Beginning & Advanced FORTRAN Programming, Symbolic Programming, Analog & Digital Logic, Computer Systems / S 4 / E 61
- North Dakota, Univ. of, P.O. Box 8282, University Station, Grand Forks, N.D. / *C 67
 Administrative and scientific computing / coml svc / IBM 360 Model 30-E, 3 disk drives; IBM 1620; punch card equipment / Programming for Engineers; Numerical Analysis; Statistics / S 3 / E 61
- Northeast Louisiana State College, 4001 Desiard, Monroe, La. 71201 / *C 67
 Administrative, accounting and student records / IBM 1620-1622 with unit record system; IBM 1130 / Introduction, FORTRAN Programming, Systems Analysis, Business Programming / 1401 disc system to replace 1620 in June 1967 / S 6 / E 63
- Northeastern Oklahoma A&M College, Data Processing, Miami, Okla. / *C 67
 Instruction / IBM 1620, 1311 disk file and unit record equipment / Business data processing curriculum / S 3 / E 5
- North Texas State Univ., School of Business Administration, N. Texas Sta., Denton, Tex. 76203 / *C 67
 Education, research, administration / IBM 1620 with card and printer I-O and peripheral equipment; IBM 1401 with two disc packs and two tape drives and peripheral equipment / Digital Computer Programming; Numerical Analysis; Principles of Data Processing; Data Processing Systems Analysis; Problems in Electronic Data Processing / S 11 / E 57
- Northwestern Univ., Vogelback Computing Center, 2129 Sheridan Rd., Evanston, Ill. 60201 / *C 67
 Research and education / CDC 3400 computer system / Approx. 125 computer-oriented classes; non-credit FORTRAN classes / S 30 / E 57
- Norwich Univ., Northfield, Vt. 05663 / *C 67
 Education / coml svc / IBM 1620 with peripheral equipment / Introduction to EDP; Introduction to Computer Programming; Numerical Analysis; Advanced Computer Programming / S 3 / E 62
- Notre Dame Computing Center, Univ. of Notre Dame, Ind. 46556 / *C 67
 Administration, education and research / coml svc / Univac 1107 computer with on-line peripheral equipment; full complement of off-line peripheral equipment; CalComp Digital Incremental Plotter / Twenty courses given in conjunction with the center including: Introduction to Computers & Programming; Finite Mathematics; Design of Computer & Programming Systems; Numerical Methods and Conformal Mapping; and Linear and Non-Linear Programming / S 24 / E 61
- Occidental College, Los Angeles, Cal. 90041 / *C 67
 Education / IBM 1620 Model II, 1311, 1622, 20K memory / Computer Programming and Applications; Numerical Analysis; Econometrics / S 3 / E 63
- Ohio State Univ., 1314 Kinnear Rd., Columbus, O. 43212 / *C 67
 Provide computing facilities for instruction and research program of University / coml svc / IBM 7094; IBM 1620 / B.S., M.S. Computer Science through the Div. of Computer Science / S 85 / E 12
- Ohio Wesleyan Univ., Delaware, O. 43015 / *C 67
 Instruction (Math) / IBM 1620 Model I; 1622 / Non-credit programming; Numerical Analysis Courses / S 7 / E 63
- Oklahoma College of Liberal Arts, Chickasha, Okla. 73019 / *C 67
 Teaching / coml svc / IBM 1130 to be installed Sept. 1967 / Programming; Numerical Analysis; Statistics; Data Processing / Using Univ. of Okla.'s IBM 1620 and G-15 until own computer delivered / S 2 / E 65
- Oklahoma State Univ., Computer Center, Stillwater, Okla. 74074 / *C 67
 Education & research / coml svc / IBM 7040; peripheral equipment / Non-credit language courses / S 14 / E 56
- Old Dominion College, School of Engineering, Box 6173, Norfolk, Va. 23508 / *C 67
 Educational / IBM 1620; IBM 1622; IBM 407; IBM 082; IBM 026 / Introduction to Computer Programming; Intermediate Computer Programming; Introduction to Engineering; Introduction to Digital Computers; Methods of Engineering Analysis; Statistics and Quality Control / S 22 / E 64
- Oregon State University Computer Center, Corvallis, Ore. 97331 / *C 67
 Provide computing facilities for instruction, research, and administration / CDC 3300; IBM 1620; ALWAC IIIIE; NEBULA (University designed & constructed); PDP-8 / courses related to computing given in Mathematics, Statistics, Electrical Engineering, Business Administration / S 100 / E 66
- Ottawa, Univ. of, Computing Center, 700 King Edward, Ottawa 2, Ont., Canada / *C 67
 Providing computing facilities for the University and outside users / coml svc / IBM 360, Model 40, 128K core / Numerical Analysis; Computer Programming; Scientific Computation / Contemplated Equipment - 2311 disk drive / S 23 / E 58
- Pacific, Univ. of the, Dept. of Electrical Engineering, Stockton, Cal. 95204 / *C 67
 Teaching / LGP-30 with high speed read punch and off-line flexowriter / Computer Programming / S 1 / E 64
- Peirce Junior College Automation Div. - name changed to Automation Institute of Philadelphia, which see
- Pennsylvania, Univ. of, Computer Center, 3401 Market St., Philadelphia, Pa. / *C 67
 Education and research / Two IBM 7040's; two IBM 1401's; two IBM 1620's; RCP 4000; PDP-6; two PDP-9's; three PDP-8's and an IBM System 360 / 40 / Computing courses given / S 50 / E 56
- Polytechnic Institute of Brooklyn, Computer Center, 333 Jay St., Brooklyn, N.Y. 11201 / *C 67
 Education / coml svc / IBM 7040 with full options and channel B; IBM 1401, 1402, 1403; 8-729V tape drives; punch card equipment / 10 half-semester and 2 one week non-credit courses in FORTRAN IV and MAP languages (open to all registered students and to staff); credit courses by academic department / S 14 / E 60
- Pomona College Computer Center, Claremont,

College and University Computer Centers

- Cal. 91711 / *C 67
Educational and administrative / IBM 360 - 40, 32K, 1442 reader-punch, 1443 printer, 4 tapes, 1 disk drive, console typewriter, on-line CALCOMP plotter / Introduction to Computer Science, Numerical Analysis, Programming Languages / S 3 / E 65
- Prince George's Community College, 5000 Silver Hill Rd., Suitland, Md. 20028 / *C 67
Junior college / IBM 1401 computer / Two courses: Introduction to EDP; Basic Programming Concepts / S 4 / E 64
- Princeton University Computer Center, Princeton, N.J. 08540 / *C 67
Education and scientific research / IBM 7094-1410; 7044-1401; 1410; 1620; 360/50 / Junior level courses in mathematics; senior and graduate courses in Dept. of Electrical Engineering: Elementary Programming; lecture series on FORTRAN, SNOBOL, Numerical Analysis, etc. / S 35 / E 61
- Queensborough Community College, Bayside, N.Y. 11364 / *C 67
Education / DIGIAC 3080; IBM 1130, 360/30 / ET 52 Assembly & Machine Language Programming; FORTRAN Programming / S 5 / E 67
- Randolph-Macon College, Computer Center, Ashland, Va. 23005 / *C 67
Undergraduate liberal arts education for men / IBM 1620 Model I, card off-line 407 / Three semester sequence in Computer Science; Numerical Analysis; Linear Algebra / S 3 / E 63
- Reed College, Portland, Ore. 97202 / *C 67
Education and research for faculty and students / coml svc / IBM 1130 with disk, plus associated card equipment / Extensive use within a number of courses in natural and social sciences / S 2 / E 65
- Rhode Island College Computer Center, Mt. Pleasant Ave., Providence, R.I. 02908 / *C 67
Administration, education, R.I. State Test Scoring Service / coml svc / IBM 1401 disk with peripheral / FORTRAN IV for faculty and students / S 9 / E 65
- Rhode Island, Univ. of, Kingston, R.I. / *C 67
Research and education for entire university / IBM 360-40, 128K, 3 disks, 2 tape drives, 2260 and 1050 remote consoles / Computer Science; Introduction to Digital Computers; Scientific Applications of Digital Computers; Problems in Computer Science; Digital Computation / S 10 / E 59
- Richmond Professional Institute, 901 W. Franklin St., Richmond, Va. 23220 / *C 67
Educational state supported institution / Honeywell 200 computer, keypunch, sorter, reproducer, 403 accounting machine / Computer Programming, Functional Wiring / Associate Degree (2-yr. program) in Data Processing / S 10 / E 65
- Riverside City College, Riverside, Cal. / *C 67
Education / IBM 1620, 1622, 1311, 1443, and unit record equipment / Computer Programming I, II, III, Problems in Computer Data Processing / S 9 / E 63
- Rochester Institute of Technology, P.O. Box 3414, Rochester, N.Y. 14614 / *C 67
Education / IBM 1620 Model I / Programming and numerical methods / IBM System Model 30 on order / S 5 / E 63
- Rochester, Univ. of, Computing Center, Rochester, N.Y. 14627 / 716-244-0711 / *C 67
Education and research / coml svc / IBM 7074, 1401, 1620, 360/50, 1130 / S 25 / E 56
- Roosevelt University, 430 S. Michigan Ave., Chicago, Ill. 60605 / *C 67
Accounting, grade processing and research / 1401 (8K), 1402, 1403, unit record equipment / Systems Unit Record and Programming / S 10 / E 63
- Rose Polytechnic Institute, 5500 Wabash Ave., Terre Haute, Ind. 47803 / *C 67
Educational program; administrative and technical processing / CDC G-15 with DDA attachment; IBM 1130 computing system / Freshman FORTRAN programming / S 1 / E 60
- Rutgers, The State Univ., Center for Computer and Information Services, New Brunswick, N.J. / *C 67
Education and research / coml svc / IBM 7040; two 1401's; 1620 / Dept. of Computer Science offers ten courses ranging from Basic Computer Programming to Thesis in System Analysis / IBM System 360/67 on order / S 23 / E 58
- St. Cloud State College, St. Cloud, Minn. 56301 / *C 67
Educational / IBM 1620, 1622; IBM 1401, 1402, 1403; peripheral equipment: IBM unit record equipment / SPS, FORTRAN & Autocoder Programming; Math Problems; Numerical Analysis; Math for Scientists & Engineers; Data Processing for Business / S 2 / E 64
- St. Edward's Univ., Austin, Tex. 78704 / *C 67
Mainly educational; some administrative work / coml svc / IBM 1620-1622 Model I; O26 card punch; O82 sorter / Introduction to digital computer programming required of all science and business students; Numerical Analysis for science students / S 1 / E 64
- St. Francis Xavier Univ., P.O. Box 74, Antigonish, N.S., Canada / *C 67
Education and research / coml svc / IBM 1620-40K; off-line printer, sorter, two keypunch machines / Math, Introduction Numerical Analysis / S 4 / E 64
- St. Mary's Univ., 2700 Cincinnati Ave., San Antonio, Tex. 78228 / *C 67
Education, research and administrative support / coml svc / IBM 1401-12K, two 1311 disk drives, IBM 1620 card system / Introduction to Programming; Numerical Methods for Computers / S 4 / E 62
- St. Thomas, College of, 2115 Summit Ave., St. Paul, Minn. 55101 / *C 67
Education / coml svc / Control Data 160A, peripheral equipment and supporting tab equipment / Data Processing for Business; Numerical Analysis & Computer Programming; Applied Statistics; Computer Programming / S 13 / E 64
- St. Thomas, Univ. of, 3812 Montrose Blvd., Houston, Tex. 77006 / *C 67
Teaching programming and furnishing computing facility to students / coml svc / CDC G-15 computer; 2 magnetic tape unit / Algebra for computation; Elementary Statistics; Digital Computer Programming; Differential Equations; Numerical Analysis; Introduction to Math Statistics / Center to be abolished in 1969 / S 3 / E 61
- Samford Univ., 800 Lakeshore Dr., Birmingham, Ala. 35209 / *C 67
Educational and administration / IBM 1620 Model I, card system / Business' Data Processing, Introductory Programming / S 8 / E 64
- San Antonio College Computer Center, 1300 San Pedro, San Antonio, Tex. / *C 67
Education and administration / IBM 1440; IBM 1401; punch card equipment / Programming; Punch Card Accounting; Computer Concepts; Advanced Programming; Systems and Procedures; Advanced Systems & Procedures / S 13 / E 54
- San Jacinto College, 8060 Spencer Hwy., Pasadena, Tex. 77505 / *C 67
Teaching / IBM 1620 and unit record equipment / two in unit recording; two in programming; survey or introduction; systems & procedures; 2-yr. associate of arts in data processing / Replacement of computer under consideration / S 2 / E 60
- San Joaquin Delta College, Data Processing Dept., 3301 Kensington Way, Stockton, Cal. *C 67
Education in data processing / IBM 1620; IBM 1401; tab equipment, keypunch, sorter, interpreter, accounting machine, collator, reproducer / 1620-1401 FORTRAN; Fundamentals of Data Processing, Functional Wiring / S 3 / E 19
- San Mateo, College of, 1700 W. Hillsdale Blvd., San Mateo, Cal. / *C 67
Education and administration / IBM 1620 with 1 disk file, 600 lpm Data Products printer; Honeywell 200-24K, printer, reader-punch, typewriter console, 4-20KC tapes, 1 disk drive / Introduction to Data Processing; Electro-Mechanical Equipment; Data Processing Systems and Procedures; Basic Computer Programming; Computer Programming Systems; Advanced Computer Systems; COBOL Programming; Key Punch; Data Processing Field Projects; Introduction to Numerical Methods; FORTRAN Programming / S 10 / E 63
- Santa Ana College, 1530 W. Seventeenth St., Santa Ana, Cal. 92706 / *C 67
Instruction and record processing / Burroughs 2500 disk-tape system; peripheral equipment / AA degree in Business Data Processing, AA degree in Computer Science / B2500 third generation computer to be installed July 1967 / S 6 / E 64
- Scranton, Univ. of, Scranton, Pa. 18510 / *C 67
Educational, administrative and commercial / coml svc / Burroughs 205 cardatron & Datafile full system / Programming for 205 & Algol; Advance Programming & Numerical Analysis / New computer in Spring 1968 / S 7 / E 65
- Seton Hall Univ., Computer Center, S. Orange, N.J. / *C 67
Support of faculty and student research; educational program and computer science; administrative data processing / IBM 1620-20K card I/O disk file; 1443 Printer; unit record support equipment / Numerical Analysis, Numerical Methods in Matrix Algebra; Numerical Methods in Ordinary Differential Equations; Numerical Methods in Partial Differential Equations; Computer Programming & Numerical Methods; Introduction to Electronic Data Processing; Theory

College and University Computer Centers

- of Automata / Plans for program in Computer Science and for Introduction of Remote Terminals / S 10 / E 63
Shippensburg State College, Shippensburg, Pa. 17257 / *C 67
Education / coml svc / IBM 1620-20K, 1311 disk drive, 1443 printer, 1622 / Computer programming; graduate and undergraduate data processing / S 3 / E 63
- Siena College, Loudonville, N.Y. 12211 / *C 67
Education, administrative applications / IBM 1620 computer, UNIVAC 9200 computer and various auxiliary equipment / Introduction to Programming, Accounting Systems, Introduction to Data Processing, FORTRAN Programming / S 3 / E 63
- Sir George Williams Univ., 1435 Drummond St., Montreal 25, Quebec, Canada / *C 67
Provide central computer center for academic and administrative needs / coml svc / CDC 3300 with 65 K words core, time sharing, disks, tapes, console, etc.; IBM 1620, 40 K core and disks / Computer Programming; Computer Science; Quantitative Methods & EDP / S 20 / E 63
- Slippery Rock State College, Slippery Rock, Pa. 16057 / *C 67
Educational-administrative, some faculty research / Unit record equipment / - / Considering IBM 360-20. Courses may be offered after installation / S 5 / E 63
- Snow College, Ephraim, Utah 84627 / *C 67
Student records and library control / 402; 026; 082; will change over to 1130 as soon as one can be obtained / Key Punch / S 2 / E 65
- South Carolina, Univ. of, Computer Science Center, Columbia, S.C. 29208 / *C 67
Provide computer service, guidance and instruction for University community / coml svc / IBM 7040-32K, 8 tape; IBM 1401-8K, 4 tape; IBM 1401-8K, 1 tape / FORTRAN; COBOL; Computer Design; Systems Design; course work in Dept. of Computer Science / S 18 / E 57
- South Dakota State Univ., Brookings, S.D. 57006 / *C 67
Academic research, teaching and administrative / IBM 1620-40K with disk; IBM 1440-4K, 2 disks, printer / FORTRAN Programming, Machine Language Programming, Non-Machine Oriented Languages / Staff includes only programmers and computer operators / S 8 / E 61
- Southern Mississippi, Univ. of, Box 106 Southern Sta., Hattiesburg, Miss. / *C 67
Education and research / IBM 1620-II and peripheral equipment / Basic FORTRAN; Linear Programming Techniques; Digital Computer Programming-Symbolic, Machine & Computer Programming; Construction of Compilers; COBOL & ANALOG Techniques / S 5 / E 63
- Southern Univ., Computing Center, Baton Rouge, La. / *C 67
Education / IBM 1620, IBM 1440; IBM 1622, IBM 1443, IBM 1311 and other peripheral equipment / Theory and Use of Computing Machines; Introduction to Data Processing I & II; Automations and Computers; Numerical Analysis / S 1 / E 52
- Southwest Texas Junior College; P.O. Box 70; Uvalde, Tex. 78801 / *C 67
Education / Unit record equipment / Introduction to Data Processing; Card punch machines; Systems; Applications; Programming / IBM 360 Model 20, delivery September 1968 / S 1 / E 63
- Stanford Univ. Computation Center, Stanford, Cal. / *C 67
Education / IBM 360-67, IBM 7090-1401; Burroughs B5500 / Some "Quickie" courses offered by Center; University has large well-rounded Computer Science Dept. / S 100 / E 53
- State Teachers College, Kirksville, Mo. 63501 / *C 67
Administration of the college / coml svc / IBM 1401 system, 2 disk drives / Key punch, programming / S 5 / E 66
- State University College, Cortland, N.Y. 13045 / *C 67
Primarily administrative; moving toward higher usage in computer education and research / UNIVAC 1005-III, 2 tape drives read punch; UNIVAC 1001 card controller; IBM unit record equipment / Introduction to Digital Computing; Programming the UNIVAC 1005-III / S 8 / E 58
- Stephen F. Austin State College, Box 4607 SFA Sta., Nacogdoches, Tex. 75961 / *C 67
Administration, teaching, research / IBM 1401-16K, 2 tapes, 2 disks, 600 lpm printer, card reader-punch, console and other peripheral equipment / Business Administration, Math, Forestry / S 10 / E 59
- Syracuse Univ. Computing Center, Syracuse, N.Y. 13210 / *C 67
Education and research / IBM System /360 Model 50 / Computer Programming, Numerical Analysis, Computer Design, Topics in Programming / S 27 / E 56
- Teachers College Computer Center, 525 W. 120th St., New York, N.Y. 10027 / *C 67
Research, administration, and education / IBM 1620 Model II with disk and printer; Digitek optical scanner, EAM equipment / FORTRAN II / S 20 / E 64
- Tennessee Technical Univ., D.W. Mattson Computer Center, Box 21A TTU, Cookeville, Tenn. 38501 / *C 67
Education and information retrieval / coml svc / IBM 1710, 1620 and offline equipment / Courses offered by another department / S 7 / E 60
- Texas A & M Univ., Data Processing Center, College Station, Tex. / *C 67
Education and research / IBM 7094; three IBM 1401's / M.S. degree in Computer Science; expanding graduate program / S 75 / E 58
- Texas at Arlington, Univ. of, Arlington, Tex. 76010 / *C 67
Administrative procedures and academic instruction / coml svc / IBM 1620-60K card read punch; IBM 1620 II, 60K card read punch, 1311 disk; IBM 1401-16K 4 mag. tapes, 1311 disk; IBM 1401-8K, card system / Computer Science courses; Math courses / Formerly Arlington State College / S 14 / E 60
- Texas at El Paso Campus, Univ. of, Schellenger Research Labs., El Paso, Tex. / *C 67
Computational facilities for sponsored and unsponsored research and educational enhancement / coml svc / CDC 3100-16K, 4 tape units, fast printer A/D and D/A on-line, disk and plotter / Seminars by staff; various credit courses use equipment as well as the extension service / S 14 / E 67
- Toledo, Univ. of, Computation Center, 2801 Bancroft, Toledo, O. 43606 / *C 67
Academic, research / coml svc / IBM 1620 Model I 40K memory, 1311 disk file, 1627 plotter / Introduction to Computing Techniques; Digital Computing & Numerical Analysis; The Use of Computers in Engineering / S 4 / E 62
- Toronto, Univ. of, Institute of Computer Science, Toronto, Ont., Canada / *C 67
Education and research / coml svc / IBM 7094 II; IBM 360 Model 50; IBM 1800; four IBM 360's, Model 20; IBM 1130 / M.S. and Ph.D. Program in Computer Science, also diploma course / S 60 / E 48
- Trenton Junior College, 101 West State St., Trenton, N.J. / *C 67
Data processing instruction for students; prepare reports for administrators; prepare statistical reports for administrative & academic staffs / coml svc / IBM 1620; IBM 1401-1311 disk; IBM unit record equipment / Fifteen courses offered including: Introduction to Electronic Data Processing; Programming I & II; Basic Computer Systems I & II; Computer Systems & Applications I & II / S 4 / E 62
- Trinidad State Junior College, Trinidad, Colo. / *C 67
Education / IBM 1401 with a 1402 punch reader, 1403 printer; G-15 Control Data Computer with magnetic tape storage; IBM unit record equipment / Data Processing Department offers several computer related courses which award an Associate of Applied Science Degree upon completion of program / College is North Central Accredited / S 3 / E 64
- Trinity Univ., 715 Stadium Dr., San Antonio, Tex. 78212 / *C 67
Research and computer science instruction / coml svc / IBM 1800, 2 mag. tapes, disk file, card-read-punch, 1443 printer, plotter, A/D converter / FORTRAN, Numerical Analysis, Computer Languages / S 5 / E 66
- Tri State College, Angola, Ind. / *C 67
Education / coml svc / IBM 1620 and unit record equipment / Computer Programming, Principles of Data Processing / S 15 / E 63
- Tulsa, Univ. of, 600 S. College, Tulsa, Okla. 74104 / *C 67
Education for undergraduates and graduate research / coml svc / IBM 1620, 407, 5 keypunches / FORTRAN Programming for sophomore engineers / S 1 (part-time) / E 63
- Union College, Computer Center, Schenectady, N.Y. 12308 / *C 67
Computing and data-processing services to students, faculty, research and administration / coml svc / (selectively) / GE 415 computer system, 16K memory, 5 tapes, floating point hardware, 1200 lpm printer, 900 cpm reader, 300 cpm punch; IBM card equipment / 7 programming; system design; several computer logic, design, and circuits / S 7 / E 62
- U.S. Coast Guard Academy, New London, Conn. 06320 / *C 67
Education and research / IBM 1620-40K, peripheral equipment and punch card equipment / 1 semester required, 2 electives following on programming and computer science / S 3 / E 63
- U.S. Merchant Marine Academy, Kings' Point, L.I., N.Y. 11024 / *C 67
Education of Merchant Marine officers, deck and engineering / 2 EAI 231-R

College and University Computer Centers

- analog computers; 1 GE time sharing digital terminal / Elective courses for cadets / Planning to add more GE time sharing digital terminals / S 40 / E 63 analog; 67 digital
- U.S. Military Academy, West Point, N.Y. 10996 / *C 67
Computer instruction, computer-extended instruction, computer-assisted learning, educational research / GE-225, 6 tapes, high speed printer, card reader, card punch; DATANET-30 communications processor, 18M disc file; two satellite GE-225's with card reader (electrically connected to DATANET-30), high speed printer; 15 remote terminals for time-sharing / Computer programming and use integral to core curriculum starting with 40 classroom hours as part of Engineering Fundamentals in 1st semester freshman year, and extending through 4-year course. Elective courses in computer fundamentals & systems analysis, hardware, numeric methods, operations research, management engineering etc. / Business type data processing support for Academy in separate A.G. Data Processing Center / S 16 / E 59
- U.S. Naval Postgraduate School, Monterey, Cal. 93940 / *C 67
Education and research; scientific and engineering computing / IBM 360 Model 67, IBM 1401, CDC 160 / 30 different computer courses / S 23 / E 60
- Utah State Univ., Logan, Utah 84321 / *C 66
Education and research / coml svc / IBM 1620-I, 40k core, card I/O; Honeywell H-1200, 49K core, card tape I/O; Univac 1004 linked to an 1108 at the Univ. of Utah, Salt Lake City / Data Processing; Computer Programming; Programming Business Problems; Programming Scientific Problems; Advanced Programming; Compiler Languages; Monitors and Systems Designs; Techniques in Operations Research; offer degree program with emphasis in mathematics or in management science / S 10 / E 61
- Utah, Univ. of, Computer Center, Salt Lake City, Utah 84112 / *C 67
Research and education at university / coml svc / UNIVAC 1108-65K, 4 FH 432, FASTRAND II, 4 UNIVAC 1004's, 6 tapes, CDC 3200, IBM 1401, H-200, PDP-8 / Computer Science, Applications. B.S., M.S., PhD offered in Computer Science / S 4 / E 58
- Valparaiso Univ., Valparaiso, Ind. 46383 / *C 67
Inform liberal arts students of computer potentials; administrative uses / IBM 1620-1710 with 1311 control system (instructional use); IBM 360/20, tapes (administrative use); unit record equipment / Introduction to Programming; Numerical Analysis; non-credit language courses, e.g., FORTRAN / S 5 / E 61
- Vassar College, Poughkeepsie, N.Y. 12601 / *C 67
Faculty and student research; education; general college business / IBM 360, Model 30 E. - disks / Introductory programming (no credit); intermediate level semester course in Statistics; Numerical Analysis (full year) at advanced level in Math / S 8 / E 66
- Vincennes University Junior College, 1139 N. 4th St., Tech. Bldg., Vincennes, Ind. 47591 / *C 67
Education and administration / IBM 1620-20K with 1443, and IBM unit record equipment / Two-year secretarial data processing, two-year in Science Data Processing, two-year Industrial Data Processing / Use considerable student help (work-study) / S 4 / E 62
- Virginia Polytechnic Institute, Computing Center, Blacksburg, Va. / *C 67
Service center for scientific, administrative applications, and instruction / coml svc / IBM 7040, 2 IBM 1401 tape systems and unit record equipment / Introductory programming courses by academic departments / S 25 / E 58
- Virginia State College, Computer Center, Box 503, Petersburg, Va. 23803 / *C 67
Liberal arts and sciences, and teacher education / IBM 1620-60K; IBM unit record equipment / Basic Computer Concepts, Computer Programming in FORTRAN II and SPS / Computer science courses are now required in accounting courses / S 8 / E 64
- Washburn University of Topeka, Topeka, Kan. 66621 / *C 67
Education and research / coml svc / IBM 1620-1622-1623-1443 with supporting keypunches, verifiers, sorter, reproducer, collator and tabulator / Five digital computer programming courses and Numerical Methods / S ? / E 62
- Washington & Lee Univ., Lexington, Va. 24450 / *C 67
Educational tool and administrative processing / IBM 1620 w/1443 printer and IBM tab equipment / Computer Programming, FORTRAN & SPS / Planning adult evening classes; expected to up-grade to 3rd generation computer in 12 months / S 5 / E 62
- Washington State Univ., Computing Center & Program in Information Science, Pullman, Wash. 99163 / *C 67
Education and research / IBM 360-67 / Full graduate program in Information Science / S 50 / E 57
- Washington Univ., Skinker & Lindell Blvds., St. Louis, Mo. 63130 / *C 67
Research, education and training / coml svc / IBM 360-50; IBM 7072; two IBM 1401's; IBM 1710; PDP-5; four Lincs; six programmed consoles / Programming courses in several computer languages; the School of Engineering and Applied Science has programs leading to a M.S. and Sc.D / S 100 / E 56
- Washington, Univ. of, Computer Center, Seattle, Wash. 98105 / *C 67
Education, Research, Administration / IBM 7094-7040, Burroughs 5500 / M.S. and Ph.D. in Computer Science / S 100 / E 56
- Waterloo, Univ. of, Computing Center, University Ave., Waterloo, Ontario, Canada / *C 67
Research and education / coml svc, limited / IBM 7040 with on-line; IBM 1401; IBM 1710; IBM 1620 II; Pace Tr-48; IBM 1620; IBM System 360, Model 40; IBM System 360 Model 75; Benson-Lehner off-line plotter and supporting peripheral equipment / Analogue Computation; Numerical Methods; Digital Computer Programming; Numerical Analysis; Principles of Computer Science; Series of graduate courses in Numerical Analysis; Computer Programming; Advanced Computer Techniques; many more / S 35 / E 60
- Wayne State Univ., Computing & Data Processing Center, Detroit, Mich. 48202 / *C 67
Academically sponsored research; instruction in computer science; University administrative use / IBM 7074, IBM 1460, IBM System 360 Model 50 / 57 courses offered / S 155 / E 47
- Weber State College, 3750 Harrison, Ogden, Utah 84403 / *C 67
Two-year technician program for data processing / IBM 1401-8K, w/disk (1311 drives) / Several courses in 1401 and related programmer training / Converting to IBM 360 Model 30 in December 1967 / S 5 / E 63
- Westchester Community College Institutional Development, 75 Grasslands Rd., Valhalla, N.Y. 10595 / *C 67
Education / Burroughs 205 with magnetic tape key punch / Basic programming & FORTRAN / S 1 / E 64
- Western Reserve Univ., Documentation Center, 10831 Magnolia Dr., Cleveland, O. 44106 / *C 67
Basic research in techniques for organization and utilization of data in the information sciences / coml svc / GE-225 with card, paper tape, magnetic tape, random access capabilities; data-phone and minimal tab equipment / Information Processing, Self-Organizing Systems, Introduction to Computers, Introduction to Computer Programming / S 15 / E 55
- Western State College of Colorado, Gunnison, Colo. 81230 / *C 67
Education and administration / IBM 1620-1622 Model I; unit record equipment / Computer Programming / S 4 / E 63
- West Georgia College, Carrollton, Ga. 30117 / *C 67
Computational services for education and college administration / IBM 1620 model I-60K, 2 disk drives, on-line printer, peripheral equipment / Mathematics 200; Introduction to Computer Programming / S 7 / E 64
- Westminster College, Fulton, Mo. 65251 / *C 67
Education, student and faculty research, and school business / IBM 1620 Model I, disk drive tape input / Beginning and Advanced Programming / S 1 / E 63
- West Virginia Institute of Technology, Montgomery, W.Va. 25136 / *C 67
Education and administration / coml svc / 1130 / Computer Programming (engineering, science, business) / S 1 / E 66
- West Virginia Univ., Morgantown, W.Va. 26506 / *C 67
Provide computer service for research, instruction and administration / coml svc / IBM 7040-32K; IBM 1401-12K / Industrial Engineering; Mathematics / S 60 / E 63
- Wheaton College, 501 E. Seminary Ave., Wheaton, Ill. 60187 / *C 67
Education, research, and business management and registration applications / coml svc / IBM 1620-1622 and peripheral equipment / Basic programming course using SPS and FORTRAN / S 6 / E 58
- Wilkes College, Wilkes-Barre, Pa. 18703 / *C 67
Scientific computation in conjunction with graduate and undergraduate program / Burroughs 205, with magnetic tape units / Advanced student individual study / S 2 / E 65
- Windsor, Univ. of, Computer Centre, Windsor, Ont. Canada / *C 67

NEW



COMPUTER AND INFORMATION SCIENCES—II

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Proceedings of the Second Symposium on Computer and Information Sciences, 1966. Presents original, authoritative articles with an interdisciplinary approach to various aspects of computer and information sciences. Topics range from biological memory to feature extraction, from adaptive control to evolutionary systems, from stochastic automata to intelligent robot, and from pattern recognition to natural language processing. July 1967, 368 pp., \$16.00

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by DIMITRIS N. CHORAFAS

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VOLUME A: THEORY
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RUSSIAN-ENGLISH DICTIONARY AND READER IN THE CYBERNETICAL SCIENCES

by SAMUEL KOTZ

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1966, 214 pp., \$11.00

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111 FIFTH AVENUE, NEW YORK, N. Y. 10003

Colleges and Universities

Education and research, administrative work / coml svc / IBM 1620-II, 40K core memory, 2-1311 disc drives, card I/O, off-line 407 / Courses offered by departments of mathematics and electrical engineering; Computer Science option in Electrical Engineering / S 2 / E 64

Wisconsin at Milwaukee, Univ. of, Computer Center, Milwaukee, Wis. 53201 / *C 67

Instruction, research, administration / IBM 1401 and peripherals, IBM 1620 II and peripherals. unit record equipment / Engineering Applications, FORTRAN Programming, Systems Programming / S 30 / E 63

Wisconsin State Univ., La Crosse, Wis. / *C 67

Educational-administrative, teaching and research / IBM 1130, IBM 1401, sorter, collator, interpreter; both computers disk systems / Introduction to Computer Science, Computer Organization & Programming, Numerical Analysis by Computer / S 5 / E 66

Wisconsin State Univ., Schofield Hall, Eau Claire, Wis. 54701 / *C 67

Instructional, research and administrative use for faculty and staff / 2 offices, 2 rooms plus storage; IBM 1401, 1402, 1403, 1406 (16K), 1407, two 1311 discs and 7330 tape / Two mathematics courses, a business course, and some use in other areas (sociology, psychology) / Growing rapidly / S 6 / E 62

Wisconsin, Univ. of, Computing Center, 1210 W. Dayton St. & 3600 Sterling Hall, Madison, Wis. / *C 67

Education and research / coml svc / CDC 3600 with CDC 924 and link satellites; CDC 1604B/160; IBM 1460; Burroughs B5500 with terminals / Introduction to Programming (no credit); credit courses given by Computer Sciences Dept. / S 101 / E 64

Wooster, The College of, Wooster, O. 44691 / *C 67

Administrative services and educational facility / IBM 1620 computer, 1622 card reader-card punch and unit record equipment / Programming / S 4 / E 60

Yale Computer Center, 175 Whitney Ave., New Haven, Conn. / *C 67

Research and education for University / IBM 7094-7040 DCS, IBM 1401 / FORTRAN, MAD, SNOBOL / S 45 / E 57

York Junior College, Country Club Road, York, Pa. 17405 / *C 67

Educational and administrative / IBM 1620 with card reader and card punch / Introduction to Data Processing; Basic Computer Systems; Fortran Programming; 1440 Programming; Computer Systems Analysis / Beginning studies of a more modern data processing system / S 9 / E 62

Youngstown Univ., 410 Wick Ave., Youngstown, O. 44503 / *C 67

Education and research / coml svc / IBM 1620 with card input/output; IBM 403 as printer and related auxiliary equipment / Computer Techniques; Principles of Business Computer / IBM 360-20 and 360-40 on order / S 8 / E 63

Computer Program Design (Southern California)

HUGHES Guidance and Controls Division has several openings for qualified persons who have the ability to create complex digital computer programs—and the desire to do the job thoroughly and efficiently. Satisfaction of current commitments on such systems as: PHOENIX, IRAM, VATE and ASG-18 requires experience in the design of real-time command and control programs, or of software programs for execution on an IBM 7094 or GE 635 computer.

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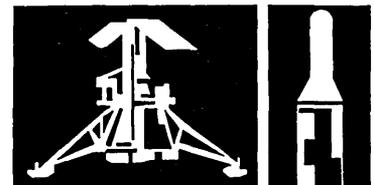
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ROSTER OF COMPUTER ASSOCIATIONS

Following is a roster of Computer Associations, not including "Users' Groups"; for these, see page 137.

I. INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING

A. Headquarters

International Federation for Information Processing
c/o The British Computer Society
23 Dorset Square
London, N.W.1, England

B. Members

ARGENTINA

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c/o Ing. H. R. Ciancaglini
Juan B. Justo 2418
Olivos (Pcia. Bs. As.), Argentina

AUSTRALIA

Australian National Committee on Computation & Automatic Control
c/o L. J. Cohn, F.F.A.
P. O. Box 1210 K
Melbourne, Australia

AUSTRIA

Austrian Productivity Centre (APC)-
Austrian Committee for Automatization
c/o Prof. Dr. H. Zemanek
IBM Laboratory Vienna
Parkring 10
Vienna 1, Austria

BELGIUM

Société Belge pour l'Application des Méthodes Scientifiques de Gestion
c/o Prof. M. Linsman
Centre de Calcul de l'Université de Liège
15 Avenue de Tilleuls
Liege, Belgium

BRAZIL

Brazilian Association of Electronic Computers (ABRACE)
c/o Jose Andrade
Rua Arauje Porto Alegre, 36-8º andar
Divisae Electronica
Rio de Janeiro, GB. -ZC 00, Brazil

BULGARIA

Bulgarian Academy of Sciences
c/o Prof. Dr. L. Iliev
1, "7th November" Street
Sofia, Bulgaria

CANADA

The Computing and Data Processing Society of Canada
c/o Prof. T. E. Hull
Dept. of Mathematics
University of Toronto
Toronto 5, Ontario, Canada

CZECHOSLOVAKIA

Czechoslovak National Committee for IFIP
c/o Ing. I. Plander
Institute for Technical Cybernetics
of the Slovak Academy of Sciences
Dubravska cesta
Bratislava Patronka, C.S.S.R.

DENMARK

The Danish Academy of Technical Sciences
c/o N. I. Bech
A/S Regnecentralen
Falkoner Alle 1
Copenhagen F, Denmark

FINLAND

The Finnish Association for Data Processing
c/o Prof. P. Laasonen
Finland Institute of Technology
Otaniemi (Helsinki), Finland

FRANCE

Association Francaise d'Informatique et de Recherche Opérationelle (AFIRO)
c/o J. Carteron
Directeur Général de la S.A.C.S.
35 Boulevard Brune
Paris 14^e, France

GERMANY

Deutsche Arbeitsgemeinschaft für Rechenanlagen (DARA)
c/o Prof. Dr. F. L. Bauer
Technische Hochschule München
Mathematisches Institut
Arcisstrasse 21
D8 München 2, Germany

HUNGARY

The Section for Information Processing, Cybernetics & Operation Research, Federation of Technical & Scientific Societies
c/o Prof. Dr. I. Kadar, Director
Computing Centre of Building Industry
Budapest XII
Alma u. 5, Hungary

ISRAEL

Information Processing Association of Israel (IPA)
c/o Dr. D. Chevion, Director
Office Mechanization Centre
Hakizya-Romema
P.O. Box 3016
Jerusalem, Israel

ITALY

Associazione Italiana per il Calcolo Automatico (A.I.C.A.)
c/o Prof. A. Ghizzetti
C.N.R.
Piazzale della Scienze 7
Rome, Italy

JAPAN

Information Processing Society of Japan
c/o Prof. Ziro Yamauti
Japan Electronic Industry Development Association
35 Kotohira-cho, Shiba
Minato-ku
Tokyo, Japan

MEXICO

Mexican Association for Computing & Information Processing
c/o Ing. S. F. Beltran, Director
Electronic Computing Center
National University of Mexico
Cuidad Universitaria
Mexico 20, D. F. Mexico

NETHERLANDS

Nederlands Rekenmachine Genootschap
c/o Prof. Dr. Ir. A. van Wijngaarden
Mathematisch Centrum
2^e Boerhaavestraat 49
Amsterdam-O, The Netherlands

NORWAY

Norwegian Society for Electronic Information Processing
c/o S. A. Øvergaard
Kjeller Computer Installation
P. O. Box 70
Kjeller, Norway

POLAND

Polish Academy of Sciences
c/o Prof. Dr. L. Lukaszewicz
Instytut Maszyn Matematycznych
Warszawa 2, ul. Koszykowa 79
Poland

SPAIN

Consejo Superior de Investigaciones Cientificas
c/o Prof. J. G. Santesmases, Director
Instituto de Electricidad y Automatica
Facultad de Ciencias Fisicas
Cuidad Universitaria
Madrid 3, Spain

SWEDEN

Swedish Society for Information Processing
c/o B. Langefors
The Institution for Information Processing - ADB
Royal Institute of Technology
Stockholm 70, Sweden

SWITZERLAND

Swiss Federation for Automatic Control
c/o Prof. Dr. A. P. Speiser
AG Brown Boveri & Co.
5401 Baden, Switzerland

Computer Associations

UNITED KINGDOM

The British Computer Society
c/o Prof. S. Gill
Centre for Computing & Automation
Imperial College of Science & Technology
Prince Consort Road
London, S.W.7., England

U.S.A.

American Federation of Information
Processing Societies (AFIPS)
c/o Dr. E. L. Harder, Sr. Consultant
Westinghouse Electric Corp.
1204 Milton Ave.
Pittsburgh, Pa. 15218
(See also III, page 135)

U.S.S.R.

The Computing Centre of the USSR Academy
of Sciences
c/o Prof. A. A. Dorodnicyn
1-Academicheskyy Proezd 28
Moscow B 312, USSR

II. ASSOCIATION FOR COMPUTING MACHINERY, INC.

A. Headquarters

Association for Computing Machinery, Inc.
c/o J. D. Madden, Exec. Director
211 East 43rd St.
New York, N.Y. 10017

B. Chapters

ALABAMA

Auburn University Student Chapter
c/o John Cope
Auburn University Computing Center
Auburn, Ala. 36830
Birmingham Area Chapter
c/o William G. Mylius, Jr.
The Rust Engineering Co.
1130 S. 22 St.
Birmingham, Ala. 35205
University of Alabama Student Chapter
c/o R. H. Worthy
64 Bellview Drive
Tuscaloosa, Ala. 35401

ARIZONA

University of Arizona Student Chapter
c/o Gordon Thompson
SU P.O. Box 10689
Tucson, Ariz. 85720

CALIFORNIA

Orange County Chapter
c/o F. W. Springe
Antonelics Dept. 345-1
Box 4171, Bldg. 222
Anaheim, Cal. 92803
University of California (Berkeley)
Student Chapter
c/o Charles Brombaugh
2521 Piedmont St.
Berkeley, Cal. 94704
Antelope Valley Chapter
c/o L. J. Runchey
30B Vieweg Circle
China Lake, Cal. 93555
Claremont College's Student Chapter
c/o Talbot Smith
Harvey Mudd Dorms, Claremont College
Claremont, Cal. 91716
San Fernando Valley Chapter
c/o Albert Deutsch
P.O. Box 11
Encino, Cal. 91316
California State College at Fullerton
Student Chapter
c/o Russ Utterberg

1718 Sunny Crest Dr.
Fullerton, Cal. 92632
San Francisco Bay Area Chapter
c/o M. H. Halstead
Lockheed Missiles & Space Co.
2070 Fallen Leaf Lane
Los Altos, Cal. 94022
Stanford University Student Chapter
c/o L. G. Tesler
106 Pine Lane
Los Altos, Cal. 94022
U. S. Naval Post Graduate School
Student Chapter
c/o Lt. D. L. McMichael
USN Post Graduate School
P.O. Box 1151
Monterey, Cal. 93940
Los Angeles Valley College Student
Chapter
c/o R. L. Hogue
8106 Bellingham
N. Hollywood, Cal. 91605
Los Angeles Chapter
c/o David F. Weinberg
TRW Systems
1 Space Park
Redondo Beach, Cal. 90278
Arrowhead (San Bernardino/Riverside)
Chapter

c/o W. L. Folsom
IBM Corp.
P.O. Box 567
Riverside, Cal. 92502
Sacramento Chapter
c/o R. D. Glauz
Aerojet General Corp., Dept. 2380
P. O. Box 1947
Sacramento, Cal. 95809
San Diego State College Student Chapter
c/o E. E. Holmerud
4208 Dakota Dr.
San Diego, Cal. 92115
San Diego Chapter
c/o Charles H. Gutzler
General Dynamics/Convair
P. O. Box 1128, Mail Zone 59500
San Diego, Cal. 92112
Santa Barbara Chapter
c/o Paul M. Krasno
G. E. Tempo
P.O. Drawer QQ
Santa Barbara, Cal. 93102

COLORADO

Pikes Peak Chapter
c/o Lt. Col. J. C. Baird
Dept. of Astronautics, USAF Academy
Colorado Springs, Colo.
Rocky Mountain Chapter
c/o W. T. Evans
G. E. Computer Dept.
P. O. Box 2331
Denver, Colo. 80201

CONNECTICUT

Hartford State Technical Institute
Student Chapter
c/o Ronald St. John
Hartford State Technical Institute
Hartford, Conn. 06106
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c/o R. F. Rosin
Computer Center, Yale University
175 Whitney Ave.
New Haven, Conn. 06520

DISTRICT OF COLUMBIA

Washington, D. C. Chapter
c/o Carl Hammer
Univac, Sperry Rand Corp.
2121 Wisconsin Ave., N.W.
Washington, D.C. 20007

FLORIDA

Northeast Florida Chapter
c/o H. Dinter

Dept. of Management
Gainesville, Fla. 32601
Central Florida Chapter
c/o L. B. Collins
P. O. Box 5144
Patrick AFB, Fla. 32925
Northwest Florida Chapter
c/o E. P. Miles, Jr.
Florida State University Computing
Center
Tallahassee, Fla. 32306
Palm Beach Chapter
c/o D. J. Beuttenmuller
243 Russlyn Drive
West Palm Beach, Fla.

GEORGIA

University of Georgia Student Chapter
c/o John T. Camp
Georgia University Sta. Box 2033
Athens, Ga. 30602
Georgia State Student Chapter
c/o E. Taylor Murray
Georgia State Student Chapter ACM
620 Amsterdam Ave., N.E.
Atlanta, Ga. 30303
Georgia Institute of Technology Student
Chapter
c/o E. L. Townsend
1971 Dunlap Ave.
East Point, Ga. 30044

IOWA

University of Iowa Student Chapter
c/o Morteza Rahimi
University of Iowa, N7A East Hall
Iowa City, Ia. 52240

ILLINOIS

Southern Illinois Student Chapter
c/o Lynn Donnell
Southern Illinois University Comput-
ing Center
Carbondale, Ill. 62901
University of Illinois Student Chapter
c/o L. K. McDowell
50 E. Healey St.
Champaign, Ill. 61820
Chicago Chapter
c/o Peter Lykos
Illinois Institute of Technology
Chemistry Bldg.
33rd & Dearborn Sts.
Chicago, Ill. 60616
University of Chicago Student Chapter
c/o R. J. Panos
University of Chicago Dept. of Edu-
cation
5835 Kimbark Ave.
Chicago, Ill. 60637

INDIANA

Indiana University Student Chapter
c/o William E. Riley
Wright Quad, Box 432
Indiana University
Bloomington, Ind.
Central Indiana Chapter
c/o James R. Reardon
RCA, Mail Location 10210
501 N. LaSalle St.
Indianapolis, Ind. 46201
Michiana (Michigan-Indiana) Chapter
c/o George I. Brown
Bendix Corp., Aerospace Div.
717 Bendix Dr., Plant 50
South Bend, Ind. 46620
Purdue University Student Chapter
c/o Thomas DeLutis
618 Crestview Pl.
W. Lafayette, Ind. 47906

KENTUCKY

Kentucky Chapter
c/o Martin B. Solomon, Jr.
University of Kentucky Computin

Computer Associations

Center
Lexington, Ky. 40506
University of Kentucky Student Chapter
c/o Leland E. Rogers
Computing Center, University of
Kentucky
Lexington, Ky. 40506

LOUISIANA

University of Southwestern Louisiana
Student Chapter
c/o S. S. Gayle
USL Computing Center, Univ. of
Southwestern Louisiana
Lafayette, La. 70501
Louisiana Polytechnic Institute Student
Chapter
c/o J. R. Herrington
2910 Milton St.
Shreveport, La. 71109
Shreveport, Louisiana Chapter
c/o G. G. Lewis
United Gas Corp.
Box 1407
Shreveport, La. 71102
Greater New Orleans Chapter
c/o S. A. Voorhies
Univac, Sperry Rand
520 Old Spanish Trail
Slidell, La. 70458

MARYLAND

University of Maryland Student Chapter
c/o James Ruddell
Counseling Center
University of Maryland
College Park, Md. 20740
Chesapeake Bay Area Chapter
c/o William Bicott
Control Data Corp.
11428 Rockville Pike
Rockville, Md. 20852

MASSACHUSETTS

University of Massachusetts Student
Chapter
c/o Kathleen H. Cowles
University of Massachusetts
Research Computer Center
Amherst, Mass. 01002
Greater Boston Chapter
c/o Richard C. Miller
Raytheon Co., Missile Systems Div.
Bedford, Mass. 01730

MICHIGAN

University of Michigan Student Chapter
c/o R. J. Srodawa
Computing Center
1000 N. University Bldg.
Ann Arbor, Mich. 48104
Metropolitan Detroit Chapter
c/o R. J. Sullivan
GM Manufacturing Staff
7-234 GM Bldg., 3044 W. Grand Blvd.
Detroit, Mich. 48204
Wayne State University Student Chapter
c/o A. A. Petrina
4077 N. Campbell
Detroit, Mich. 48210
Michigan State University Student Chapter
c/o Harvey D. Dahljelm
208 Computer Center
Michigan State University
East Lansing, Mich. 48823
Mid-Michigan Chapter
c/o Kenneth G. Day
IBM Corp.
608 S. Washington
Lansing, Mich. 48933

MINNESOTA

Twin Cities Chapter
c/o William R. Unke
P.O. Box 1054
Minneapolis, Minn. 55440

MISSISSIPPI

University of Southern Mississippi
Student Chapter
c/o C. L. Lewis
Univ. of So. Mississippi
Southern Sta. Box 1867
Hattiesburg, Miss. 39402

MISSOURI

Kansas City, Missouri Chapter
c/o R. C. Wyche
Gulf Oil Corp., Spencer Chemical Div.
1004 Baltimore
Kansas City, Mo. 64105
University of Missouri, Rolla Student
Chapter
c/o Henri J. Van Naerssen
Computer Science Center, University
of Missouri
Rolla, Mo. 65401
St. Louis, Missouri Chapter
c/o J. M. Cooper
Washington University Computing Center
200 Sever Hall
St. Louis, Mo. 63130
Washington University Student Chapter
c/o Carol S. Frankford
Box 3299, 6515 Wydown
St. Louis, Mo. 63165

NEBRASKA

Midlands, Nebraska Chapter
c/o William E. Walden
University Computing Center
University of Omaha
Omaha, Nebr. 68101

NEW JERSEY

Delaware Valley Chapter
c/o Ray Dash
RCA-EDP Bldg. 204-2
Cherry Hill, N. J. 08101
Stevens Institute of Technology Student
Chapter
c/o Lewis Goldklang
Stevens Inst. of Technology
Castle Point Station
Hoboken, N.J. 07030
NEW MEXICO
Greater Rio Grande Chapter
c/o J. L. Tishchauser, Jr.
Computing Programming, Sandia Corp.
P. O. Box 5800
Albuquerque, N. M. 87115

NEW YORK

Hudson-Mohawk Chapter
c/o C. E. Carlson
N. Y. State Dept. of Works
The State Campus
Albany, N. Y.
Manhattan College Student Chapter
c/o Frank P. Sansone
294 King St.
Armonk, N. Y. 10504
Long Island University Student Chapter
c/o Charles S. Isaacs
37 Hawthorne St.
Brooklyn, N. Y. 11225
New York University Student Chapter
c/o Matthew Pernick
265 Quentin Rd.
Brooklyn, N. Y. 11223
Polytechnic Institute of Brooklyn
Student Chapter
c/o S. M. Brick
Computing Center, Polytechnic
Institute of Brooklyn
333 Jay St.
Brooklyn, N. Y.
Niagara Frontier (Buffalo) Chapter
c/o D. Didising
SUNY at Buffalo
327 Riverside Ave.
Buffalo, N. Y. 14207

Suny at Buffalo Student Chapter
(State University of New York)
c/o James Callan
328 Hedstrom Dr.
Buffalo, N. Y. 14226
New York Southern Tier Chapter
c/o D. C. Gause
Endicott Product Test Lab.
IBM, Dept. 773
Endicott, N. Y.
Cornell University Student Chapter
c/o Thomas H. Horowitz
Cornell Computer Center, Cornell
University
Ithaca, N. Y. 14850
Kingston Chapter
c/o James L. Cleveland
IBM Corp., S.D. Div., Dept. 674
Kingston, N. Y. 12401
City College of New York Student Chapter
c/o Bruce P. Margolin
The City College Computer Center
Steinman Hall, Room 4
Convent Ave. at 140th St.
New York, N. Y. 10031
Long Island Chapter
c/o David Fox
Fox Computer Services Inc.
135 W. 50th St.
New York, N. Y. 10020
New York City Chapter
c/o Sam Matsa
IBM Corp.
590 Madison Ave.
New York, N. Y. 10022
New York Institute of Technology Student
Chapter
c/o Michael Pizzarelli
N. Y. Institute of Technology
135 W. 70th St.
New York, N. Y. 10023
Northern New Jersey Chapter
c/o Cecile Smolen
150 E. 61st St.
New York, N. Y. 10021
Westchester-Fairfield County Chapter
c/o Leon Davidson
Union Carbide Corp.
270 Park Ave.
New York, N. Y. 10017
Poughkeepsie Chapter
c/o James G. Monsma
Education Research Center, IBM Corp.
Poughkeepsie, N. Y. 12602
Vassar College Student Chapter
c/o Anne Lounsbury
Vassar College
344 Main St.
Poughkeepsie, N. Y. 12601
Rochester, New York Chapter
c/o R. C. Hastings
IBM Corp.
540 Main St., East
Rochester, N. Y. 14604
Rome-Utica Chapter
c/o Patricia M. Langendorf
Box 545
Rome, N. Y. 13440
Syracuse Chapter
c/o Otway O. Pardee
Syracuse University Computing Center
Rm. 122, Machinery Hall
Syracuse, N. Y. 13210
Queensborough Community College Student
Chapter
c/o R. W. McManus
89-38 86th St.
Woodhaven, N. Y. 11421
NORTH CAROLINA
Central Carolina Chapter
c/o J. W. Hanson
University of North Carolina
Computation Center
Chapel Hill, N. C. 27707
Winston-Salem Chapter

Computer Associations

- c/o J. W. Timko
Bell Telephone Labs.
3300 Lexington Rd., S.E.
Winston-Salem, N.C. 27102
- OHIO
Cincinnati-Dayton Area Chapter
c/o J. P. Kollin
U.S. Public Health Service
1055 Laidlaw Ave.
Cincinnati, O. 45237
Kavir University Student Chapter
c/o P.J. Albers
3323 Muddy Creek Rd.
Cincinnati, O.
Cleveland Chapter
c/o William Stieger
P.O. Box 4741
Cleveland, O. 44126
University of Dayton Student Chapter
c/o Stephen A. Mahrt
University of Dayton Computer Science
Dept.
Dayton, O. 45410
- OKLAHOMA
Bartlesville, Oklahoma Chapter
c/o H. W. Curley
Cities Service Oil Co.
Cities Service Bldg.
Bartlesville, Okla.
Oklahoma State University Student Chapter
c/o T. M. Jurgensen
Route 1
Stillwater, Okla. 74075
Tulsa, Oklahoma Chapter
c/o Vincent F. Jennemann
Pan American Petroleum
P.O. Box 591
Tulsa, Okla. 74102
- OREGON
Willamette Valle, Oregon Chapter
c/o L. N. Stone
Oregon State University
Dept. Elec. & Electronic Eng.
Corvallis, Ore. 97331
- PENNSYLVANIA
Bucknell University Student Chapter
c/o R. A. Metzger
Bucknell University
Box B-432
Lewisburg, Pa. 17837
University of Pennsylvania Student
Chapter
c/o G. A. Miller
3312 Arch St.
Philadelphia, Pa. 19104
Carnegie Institute of Technology Student
Chapter
c/o J. E. Earley
Carnegie Inst. of Tech. Computation
Center
Schenley Park
Pittsburgh, Pa. 15213
Pittsburgh Chapter
c/o R. B. Smith
Westinghouse Electric Corp.
Bettis Atomic Plt., P.O. Box 79
West Mifflin, Pa. 15122
- RHODE ISLAND
Rhode Island Chapter
c/o Robert H. Bowerman
Design Approval Dept.
Naval Underwater Res. & Eng. Sta.
Newport, R.I. 02840
Brown University Student Chapter
c/o James Michener
Brown University Applied Mathematics
Dept.
Providence, R.I. 02912
Providence College Student Chapter
c/o Paul A. Thomas
P.O. Box 891, Friar Station
- Providence, R.I. 02918
- SOUTH CAROLINA
Clemson University Student Chapter
c/o R. E. Jorger
Box 4471
Clemson, S.C. 29631
- TENNESSEE
Mid-Southeast Chapter
c/o G.R. Sherman
University of Tennessee Computer
Center
Knoxville, Tenn. 37916
University of Tennessee Student Chapter
c/o I. F. Burns
University of Tennessee Computing
Center
Glocker Bus. Admin. Bldg. Rm. 67
Knoxville, Tenn. 37916
Memphis Chapter
c/o James Ziegler
Union Carbide Nuclear
P.O. Box P
Oak Ridge, Tenn. 37830
- TEXAS
Arlington State College Student Chapter
c/o C. G. Peadon
108 W. 2nd St.
Arlington, Tex. 76010
Texas A & M Student Chapter
c/o Paul M. Briggs
Data Processing Center, Texas A&M
University
College Station, Tex. 77843
Dallas-Fort Worth Chapter
c/o William Mack Usher
Texas Instrument, Inc.
P.O. Box 5474, MS #311
Dallas, Tex. 75222
Houston, Texas Chapter
c/o W.E. Farley
M. D. Anderson Hospital Biomathematics
Dept.
Texas Medical Center
Houston, Tex. 77005
Manned Spacecraft Chapter
c/o E. G. Kusik
16915 El Camino Real
Houston, Tex. 77058
Rice University Student Chapter
c/o F. Baskett III
Computer Project, Rice University
Houston, Tex. 77027
Sabine-Port Arthur, Texas Chapter
c/o G. R. Holton
Texaco, Inc.
P.O. Box 712
Port Arthur, Tex. 77640
- UTAH
Brigham Young University Student Chapter
c/o Lynn A. McKell
D53 Wyview Village
Provo, Utah 84601
Utah Chapter
c/o L. J. Gardner
79 S. State St., Rm. 433
Salt Lake City, Utah 84111
- VIRGINIA
Tidewater, Virginia Chapter
c/o R. L. Van Tilburg
ITT Data Systems Div.
Dam Neck, Va. 23456
Virginia Peninsula Chapter
c/o J. N. Shoosmith
501 Bridge St.
Hampton, Va. 23369
- WASHINGTON
Washington State University
- Student Chapter
c/o Fred Ives
Washington State University Computing
Center
Pullman, Wash. 99163
Columbia River Basin Chapter
c/o Wayne R. Hamilton
P.O. Box 605
Richland, Wash. 99352
Puget Sound (Seattle-Tacoma) Chapter
c/o George G. Town
Computing Center, Seattle University
Seattle, Wash. 98104
Inland Empire-Spokane Chapter
c/o Ronald R. Rector
6020 S. Martin
Spokane, Wash. 99204
- WEST VIRGINIA
West Virginia University Student Chapter
c/o Gary E. Schubert
1428 Anderson Ave.
Morgantown, W. Va.
- WISCONSIN
Madison Area Wisconsin Chapter
c/o Homer Vick
Wisconsin Power & Light Co.
122 W. Washington Ave.
Madison, Wis. 53704
Metropolitan-Milwaukee Student Chapter
c/o Andrei Glasberg
Computer Center
3203 N. Downer Ave.
Milwaukee, Wis. 53211
Milwaukee, Wisconsin Chapter
c/o Ivan E. Winslow
First Wisconsin National Bank
743 N. Water St.
Milwaukee, Wis. 53202
- CANADA
University of Western Ontario Student
Chapter
c/o S. C. Biggs
University of Western Ontario Compu-
ter Science Dept.
London, Ont., Canada
University of Alberta Student Chapter
c/o Mrs. Wilma McKinney
11131 77th Ave.
Edmonton, Alb., Canada
University of Toronto Student Chapter
c/o N. F. Stewart
277 St. George St.
Toronto 5, Ont., Canada
- VENEZUELA
Venezuelan Chapter
c/o F. Rodriguez Gil
Box 4151 Chacao
Miranda, Venezuela
- III. OTHER COMPUTER ASSOCIATIONS
AND SYMPOSIUMS
- American Federation of Information
Processing Societies
c/o H. G. Asmus, Exec. Sec'y.
9th Floor, 345 E. 47th St.
New York, N. Y. 10017
Annual Computer Applications Symposium
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Illinois Institute of Technology
Research Institute
10 W. 35 St.
Chicago, Ill. 60616
Association for Educational Data Systems
c/o James J. Fast, Jr., Executive
Secretary
1201 16th St., N.W.
Washington, D. C. 20036
Association for Machine Translation &
Computational Linguistics
c/o Harry H. Josselson, Secretary-

Treasurer
c/o Slavic Dept., Wayne State Univ.
151 A.S.B. 1
Detroit, Mich. 48202

Association Internationale pour le Calcul
Analytique
50 Ave. Franklin D. Roosevelt
Bruxelles, Belgium

Association of Data Processing Service
Organizations (ADAPSO)
c/o W. H. Evans, Executive V.P.
947 Old York Rd.
Abington, Pa. 19001

BioInstrumentation Advisory Council (BIAC)
c/o Lloyd E. Slater, Secretary
Case Institute of Technology
Cleveland, O.

Business Equipment Manufacturers Assoc-
iation
c/o Harry C. Anderson, President
235 E. 42nd St.
New York, N.Y. 10017

Data Processing Cards & Forms Manufac-
turers Association
211 E. 43rd St.
New York, N.Y. 10017

Data Processing Management Association
c/o R. Calvin Elliott, Executive
Director
505 Busse Highway
Park Ridge, Ill. 60068

Data Processing Supplies Association
c/o C. A. Greathouse, Executive
Director
211 E. 43rd St.
New York, N.Y. 10017

European Computer Manufacturers Assoc-
iation (ECMA)
Rue du Rhône 114
1204-Geneva, Switzerland

IEEE Computer Group
c/o Keith W. Uncapher, Chairman
The RAND Corp.
1700 Main St.
Santa Monica, Cal. 90406

Institute of Electrical & Electronics
Engineers (IEEE)
Box A, Lenox Hill Station
One E. 79th St.
New York 21, N. Y.

Institute of Information Storage &
Retrieval
c/o Marvin M. Wofsey
Center for Technology & Administration
The American University
Washington 6, D.C.

Instrument Society of America
c/o Herbert S. Kindler, Exec. Director
530 William Penn Place
Pittsburgh, Pa. 15219

International Association for Cybernetics
Palais des Expositions
Place Andr  Rijckmans
Namur, Belgium

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Exposition
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933 Ridge Ave.
Pittsburgh 12, Pa.

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Processing Societies
211 E. 43rd St.

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c/o Mary Ann DeVries, Admin. Sec'y.
44 Nassau St.
Princeton, N.J. 08540

Schweizersiche Gesellschaft fur Automatik
c/o Dr. A. von Schulthess
Wasserwerkstrasse 53
8006 Zurich, Switzerland

SHARE Design Automation Project
c/o J. Behar
IBM Corp.
425 Park Ave.
New York, N.Y. 10022

Simulation Councils, Inc.
c/o Stanley Rogers, Secretary
P.O. Box 2228
La Jolla, Cal. 92037

Systems & Procedures Association
c/o Richard L. Irwin, Executive
Director
24587 Bagley Rd.
Cleveland, O. 44138

Applications

(Continued from page 86)

Diplomatic records — implications
re prevailing attitudes: analy-
sis, summaries

Election statistics — implica-
tions: analysis, summaries

Ship sailing records — historical
and economic implications: anal-
ysis, summaries

8. Languages

Ambiguity determinations

Dead languages: deciphering,
translating

Language analysis

Syntax pattern analysis

Translation from one language to
another

Verification of translations

Vocabulary trends: analysis

Word classification: analysis,
summaries

Word frequency counts, analysis

9. Literature

Author determination via key func-
tion words

Author determination via style
analysis

Automatic abstracting

Bibliography construction

Concordance construction

Index construction

Poetry style: analysis

Proofreading

"Quik-index" by keyword of titles
in context

10. Music

Composition

Composition features such as range,
phrases, patterns, refrains, ca-
dences, etc.: analysis, syn-
thesis, simulation

Harmonies: analysis

Musical information: analysis,
retrieval, storage

Music printing

Simulation and models

Sounds: analysis, synthesis

Statistical analysis of style

Following is the index of advertisements.
Each item contains: Name and address of
the advertiser / page number where the
advertisement appears / name of agency

Academic Press, 111 Fifth Ave., New York,
N.Y. 10003 / Page 131 / Flamm Adverti-
sing

American Telephone & Telegraph Co., 195
Broadway, New York, N.Y. 10007 / Page
2 / N. W. Ayer & Son

Auerbach Corp., 121 N. Broad St., Phil-
adelphia, Pa. 19107 / Page 77 / --

Berkeley Enterprises, Inc., 815 Washing-
ton St., Newtonville, Mass. 02160 /
Pages 38, 39 / --

Burroughs Corporation, 6071 Second Blvd.,
Detroit, Mich. 48232 / Page 78 / Camp-
bell-Ewald Co.

CALMA Company, 346 Mathew St., Santa
Clara, Calif. 95050 / Page 71 / Sara-
toga Advertising

California Computer Products, 305 Muller
Ave., Anaheim, Calif. / Page 90 / Camp-
bell-Mithun, Inc.

Computer Sciences Corp., 650 N. Sepulveda
Blvd., El Segundo, Calif. 90245 / Page
4 / Jay Chiat & Associates, Inc.

Consolidated Electrodynamics Corp. (Data-
tape Div.), 360 Sierra Madre Villa,
Pasadena, Calif. 91109 / Page 82 /
Hixson & Jorgensen, Inc.

Data Machines, 1590 Monrovia Ave., New-
port Beach, Calif. / Page 57 / Durel
Advertising

Digital Equipment Corp., 146 Main St.,
Maynard, Mass. 01743 / Page 3 / Kalb
& Schneider Inc.

Graham Magnetics Inc., Graham, Texas
76046 / Page 139 / Witherspoon and
Associates

Houston Omnigraphic Corp., 4950 Terminal
Ave., Bellaire, Texas 77401 / Page 140 /
Ray Cooley & Associates, Inc.

Hughes Aircraft Co., 11940 W. Jefferson
Blvd., Culver City, Calif. 90230 / Page
131 / Foote, Cone & Belding

International Business Machines Corp.,
Data Processing Div., White Plains, N.Y.
/ Pages 59a, 59b / Marst ller Inc.

Melpar Inc., 7762 Arlington Blvd., Falls
Church, Va. 22046 / Page 40 / Arthur J.
Lamb, Inc.

Randolph Computer Corp., 200 Park Ave.,
New York, N.Y. 10017 / Page 137 / Albert
A. Kohler Co., Inc.

Scientific Data Systems, 1649 17th St.,
Santa Monica, Calif. / Page 79b / Doyle,
Dane Bernbach, Inc.

Sedgwick Printout Systems Corp., 410 East
Sixty-Second St., New York, N.Y. 10021
/ Page 40 / Dowden & Solovitz

Time Share Corporation, Lyme Rd., Box 301,
Hanover, N.H. 03755 / Page 67 / Allied
Advertising Agency Inc.

URS Corporation, 1811 Trousdale, Burlin-
game, Calif. / Page 76 / Hal Lawrence
Inc.

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ROSTER OF COMPUTER USERS' GROUPS

Abbreviations: S - size / E - year established

ACUTE (Accountants Computer Users for Technical Exchange)
R. S. McCarthy, P.O. Box 4076, Grand Central Station, New York, N.Y. / S ? / E ?

CEPA (Civil Engineering Program Applications)
Dr. A. K. Spalding, Tibbetts, Abbett, McCarthy & Stratton, 375 Park Ave., New York, N.Y. / S ? / E ?

COMMON (formerly 1620 Users Group) IBM 1130, 1620/1710, 1800, 360 systems
Int'l Sec'y-Treas., Charles E. Mauldin, Jr., COMMON, Computer and EDP Labs., Univ. of Oklahoma, Norman, Okla. 73069 / S 1100 / E 59

CO-OP / Control data 3400, 3600, 3800 and 6000 series
Exec. Sec'y, Robert G. Tantzen, CO-OP, c/o Air Force Missile Development Center, Computation Div. (MDRCD), Holloman AFB, N.M. 88330 / S 96 / E 59

CUBE / Burroughs computers: B100, B200 (B260, B270, B280), B300, B5000, B5500, B220, B205
Sec'y, Thomas Favello, CUBE, c/o Cle-vite Corp., 200 Smith St., Waltham, Mass. 02154 / S ? / E ?

DECUS / PDP-1, PDP-4, PDP-5, PDP-6, PDP-7, PDP-8, PDP-8/s, PDP-9, PDP-10, LINC-8
Exec. Sec'y-Editor, Mrs. Angela J. Cossette, DECUS, Digital Equipment Corp., Maynard, Mass. 01754 / S 1060 / E 61

ECHO (Electronic Computing - Hospital Oriented)
William Isaacs, Michael Reese Hospital & Medical Ctr., 29th St., & Ellis Ave., Chicago, Ill. / S ? / E 66

G-15 Users Exchange Organization / Control Data G-15
Sec'y, Peter O. Cioffi, Control Data G-15 Users Exchange Organization, Con-Data Corp., 8100 34th Ave., So., Minneapolis, Minn. 55440 / S ? / E ?

General Electric 225 Computers Users Association / GE 210, 215, 225, 235
Sec'y, Forrest L. Garrison, Jr., GE 225, c/o General Electric Co., P.O. Box 8555, Philadelphia 1, Pa. / S ? / E ?

GUIDE International / IBM 360, Model 40 or higher; 7000 series, 1410, or 700 series with 20,000 positions of high-speed memory and 6 tape drives on-line (or direct access equivalents)
Sec'y, Miss Lois E. Mecham, c/o United Services Automobile Assoc., 4119 Broadway, San Antonio, Tex. 78215 / S 660 installations / E 56

H-400 Users Group / H-400 and H-1400 computers
Sec'y-Treas., T. S. Ansel, H-400 Users Group, c/o Beech Aircraft Corp., 9709 E. Central, Wichita, Kan. 67201 / S approx. 110 organizations / E 62

H-800 Users Association / Honeywell 800/1800
Sec'y, Joseph Callahan, H-800 Users Assoc., c/o American Mutual Liability Ins. Co., Wakefield, Mass. / S 72 / E 61

HEEP (Highway Engineers Exchange Programs)
A. J. Landry, Louisiana Dept. of Highways, Baton Rouge, La. / S ? / E ?

IBM 1620 Users Group - name changed to COMMON, which see

JUG / Joint Users Group
Sec'y, Robert E. Rountree, Jr., JUG, c/o National Bureau of Standards, Conn. & Van Ness St., N.W., Rm. 414-South Bldg., Washington, D.C. 20234 / S 14 / E 60

NCR 304 Users Organization / NCR 304
Sec'y, E. N. Barrett, NCR 304 Users Organization, c/o National Cash Register Co., Main and K Sts., Dayton 59, O. / S ? / E ?

NCR 390 Users Organization / NCR 390
Chrmn., C. Richard Fruth, NCR 390 Users Organization, c/o Professional Bldg., Fostoria, O. / S ? / E 62

OPUS / OPCON Users
Sec'y, W. Spence Filleman, OPUS / c/o Datatrol Corp., 8115 Fenton St., Silver Spring, Md. / S ? / E ?

Raytheon Users Group / Raytheon PB250
Sec'y, E. David Phillips, Raytheon Users Group, Raytheon Computer, 2700 S. Fairview St., Santa Ana, Cal. / S ? / E ?

SDS Users Group / SDS 92, 910, 920, 925, 930, 940, 9300; Sigma 2, Sigma 5, Sigma 7
Sec'y, Ken Brown, Scientific Data Systems, 1649 17th St., Santa Monica, Cal. 90404 / S 620 / E 63

SHARE / IBM computers
Sec'y, David J. Farber, SHARE, c/o Bell Telephone Laboratories, Inc., Whippany, N.J. / S ? / E 62

SNUG / NCR 315 100 and NCR 315 RMC
Vice Chrmn., N. Spillson, Management Sciences, EDP Products, NCR, Dayton, O. / S 100 / E 64

SWAP / Control Data 160, 160-A, 8090, 924, 3100, 3200, 3300
Exec. Sec'y, Carl L. Hill, SWAP, c/o System Development Corp., 2500 Colorado Ave., Santa Monica, Cal. 90406 / S 200 / E 62

TUG / Philco 2000 series
Sec'y, Omar Phillips, TUG, c/o Western Development Lab., 3875 Fabian Way, Palo Alto, Cal. / S ? / E ?

UAIDE (Users of Automatic Information Display Equipment)
Stromberg-Carlson Corp., P.O. Box 2449, San Diego, Cal. 92112 / S ? / E ?

UNIVAC, Div. of Sperry Rand Corp. / Univac Solid State, Univac I, II, III, Univac 1050, Univac 490, Univac 418, Univac 1107 and 1108
Sec'y, Murray F. Hepple, c/o UNIVAC, 503 West Sunset Rd., Mt. Prospect, Ill. 60057 / S 500 / E 55

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Analog and Hybrid Computers

(Continued from page 79a)

checking / SALE: \$15,000 to \$50,000;
RENTAL: \$500 to \$1700 (on 3-yr. lease/
purchase non-cancelable) / RMKS: dig-
ital and analog modules are inter-
changeable in patchbay, REP-OP mode
and removable problem board are stand-
ard features, ± 100 volt operating
range / Systron-Donner Corp., *a /
*C 67

SD 3300 Analog Computer / DESCR: low
cost educational analog computer /
APPLICS: scientific, specifically
designed for teaching and classroom
work / ACCUR: analog, 3 signif. fig-
ures / CAPAC: none / LRGST INSTL:
5 amplifiers, 2 multipliers, 5 inte-
grators, 2 DFGs, 15 pots / PRGMG:
no automatic prgm / IN-OUT: analog
voltages and resistance levels /
RELIAB: no automatic checking / SALE:
\$2250 to \$4000 / RMKS: educational
simulation tool; has REP-OP mode and
removable problem board as standard
features / Systron-Donner Corp., *a
/ *C 67

SK5 / APPLICS: scientific; real-time or
not / ACCUR: 4 signif. figures /
CAPAC: modules / LRGST INSTL: 70
adders, 20 multipliers, 70 integrators,
function filters / PRGMG: no autom-
atic programming / IN-OUT: decade
switches -- readout on multi-channel
self-calibrating oscilloscope / RELIAB:
no automatic checking, operg ratio,
99% / SALE: - / Philbrick Researches,
Inc., 34 Allied Drive at Route 128,
Dedham, Mass. / *C 66

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The Magazine Editor's Argument
The Rule About Semicolons and Commas
The Farnsworth Car Pool

GAME-PLAYING MACHINES

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Black Match
Nim
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—to convert from decimal to other scales of notation
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Guessing Helen's Age
Geography Quiz
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Solving Right Triangles

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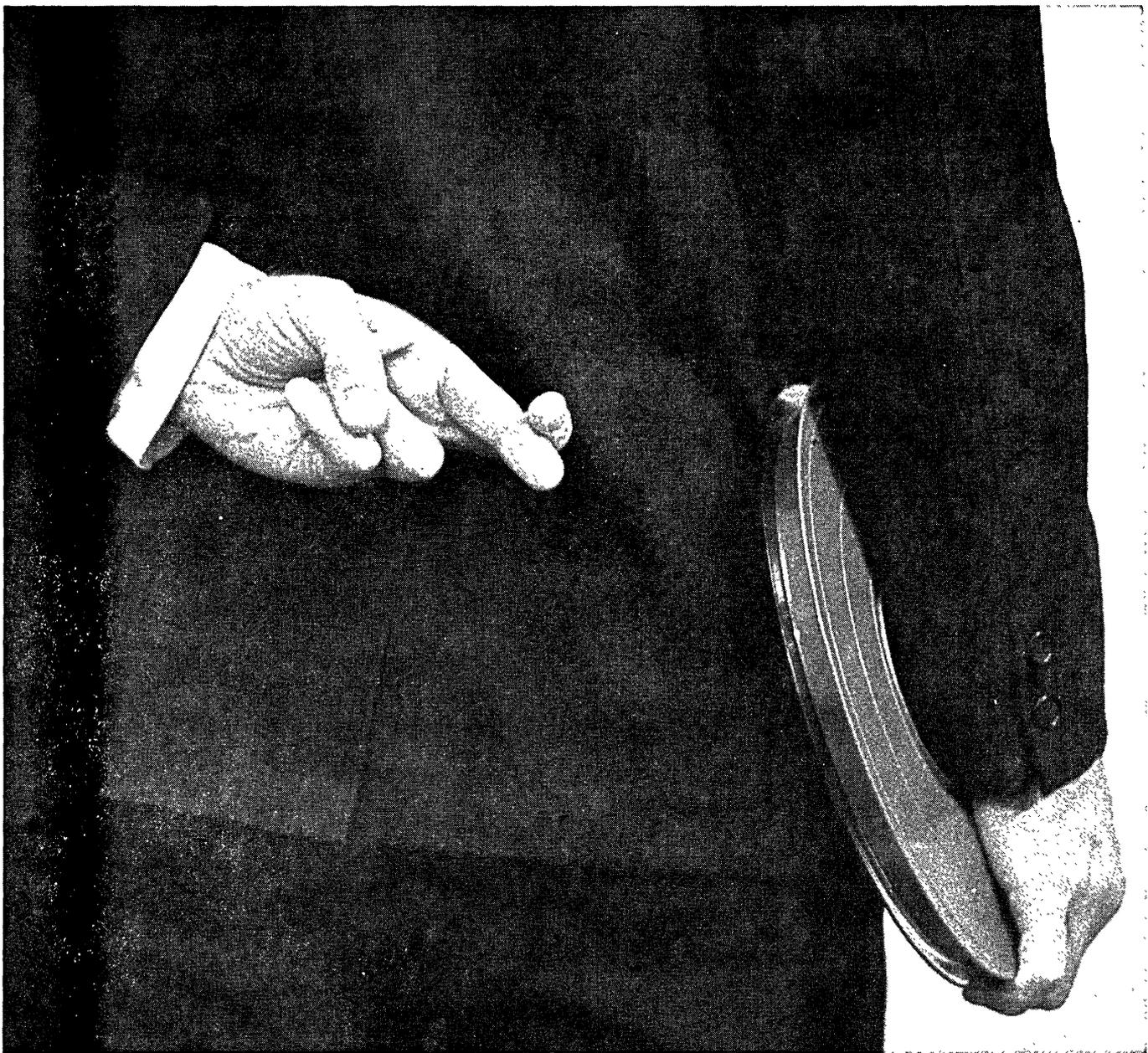
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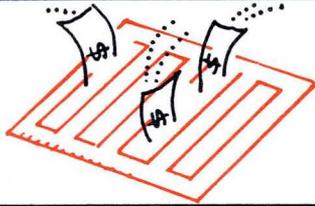
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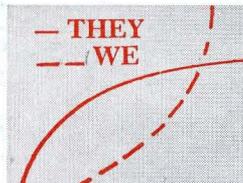
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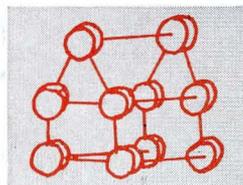
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