THE COMPUTER DIRECTORY
AND BUYERS' GUIDE, 1962

the June 1962 issue of
"Computers and Automation"

Roster of Organizations in the Computer Field
Buyers' Guide for the Computer Field: Products and Services for Sale or Rent
Surveys of Computing and Consulting Services
Descriptions of Computers: Digital, Analog, Special Purpose
Over 500 Areas of Application of Computers

and more besides
How? With Bell System DATA-PHONE service. It lets you send business data over telephone lines at speeds up to 2500 words per minute at regular telephone rates. All kinds of data—payrolls, waybills, sales orders, inventories, even drawings. Saves time, cuts cost, speeds customer services. Questions? Just call your Bell Telephone Business Office and ask for one of our Communications Consultants. He'll gladly explain how DATA-PHONE service can extend your business machines to where they're needed, and how it broadens your control of operations for savings and profit.

BELL TELEPHONE SYSTEM
Blending a powerful, high-speed central processor with a uniquely flexible communications system, the Bendix G-20 is systems engineered for more scientific management control...maximum productivity per dollar invested. • The self-organizing, self-monitoring capabilities of the G-20—achieved under executive programmed control—permit dynamic re-scheduling to meet the swift-paced demands of modern management decision making. Multiprocessing—the concurrent handling of business and scientific programs—becomes a practical reality with the Bendix G-20 computer system. • Thanks to complete automatic control of memory allocation and designation of multiple communications channels and input-output accessories, the G-20 represents the most effective operational configuration for every kind of computational workload. The result: the elimination of piecemeal data processing...a truly balanced system, without sacrificing speed, as reflected in the G-20's magnetic tape transfer rate of 240,000 digits per second. • And don't overlook the nationwide support provided by Bendix—systems support in depth...from preliminary evaluation through systems analysis, automatic programming and installation to maximum “uptime” performance. Your nearby Bendix Computer representative will be glad to introduce you to the cost reducing capabilities of the proven, systems engineered Bendix G-20. Or write, Bendix Computer Division, 5630 Arbor Vitae Street, Los Angeles 45, California. Dept. D-40.

Bendix Computer Division

THE BENDIX G-20 COMPUTING SYSTEM

NOW IN OPERATION—Carnegie Institute of Technology, Pittsburgh, Pennsylvania
YOU'RE READING THE ONLY LANGUAGE YOU NEED TO KNOW TO PROGRAM THE NEW BURROUGHS B 5000 EDP SYSTEM FOR BUSINESS DATA PROCESSING

Finally! Here is a system specifically designed for programming in simple English language statements called Cobol. And from these easily written English statements, the new B 5000 automatically creates its own machine language program; a program unique in its operating efficiency. What's more, if you have scientific or engineering problems to solve, the B 5000 will just as efficiently accept programs written in common algebraic terms. This new Burroughs B 5000 is a truly advanced electronic data processing system. It understands you perfectly. Your language. Your problems. Your concern for costs. A skilled Burroughs data processing team is ready to help you save the time and trouble and expense a computer system is supposed to save you. Write to us at Detroit 32, Michigan. Burroughs—TM

Burroughs Corporation
WHAT GOES INTO A SUPERIOR COMPUTER TAPE?

Many things, tangible and intangible, go into the making of EP Computer Audiotape. On the tangible side, only the finest materials and equipment—meticulously selected and constantly tested—are used in producing this extra precision computer tape. In addition, every reel is 100% checked on specially-designed Automatic Certifiers to insure that each of the 112 million test pulses (161 million on high density tapes) reproduce properly . . . Less tangible but just as important are our years of experience in this exacting field. Experience that tells you Extra Precision Computer Audiotape consistently lives up to its name. Once you try this superior computer tape, we're certain that you'll agree.

EP COMPUTER AUDIOTAPE/AUDIO DEVICES INC., 444 MADISON AVE., N. Y.
Outstanding Features of the EAI Series 3100 DATAPLOTTER include:

- System accuracy up to 0.175% of full scale.
- Punched card, tape or keyboard input.
- Plotting speeds up to 80 points per minute.
- Provisions for "off-board" origin.
- Compact, self-contained single cabinet design. Punched card reader external.
- Adaptable to any computer system.
- Accepts analog as well as digital inputs.
- Automatic off-scale point rejection.

The full potential usefulness of digital computer calculations is seldom fully realized. Because of the excessive cost of hand plotting, the benefits of graphic displays of digital data are usually sacrificed. Now, with the DATAPLOTTER 3100, this lost dividend can be recovered. The quickest and easiest way to analyze the voluminous output of digital computers is in the form of easy-to-read x-y charts. With graphs plotted on the EAI Series 3100 [11"x 17"] DATAPLOTTER, digital information achieves new accessibility and convenience for computer data users. This new low-cost digital plotter enables project groups to set up independent data interpretation operations utilizing information obtained from central computer services. Experience shows that this equipment will deliver plots more rapidly and accurately and free valuable man-hours for engineering and management.

Some of the applications in which the EAI Series 3100 DATAPLOTTER is extremely valuable include Frequency Response Curves • Fluid Flow Charts • Stress Analysis • Aerodynamic Studies • Chemical Reaction Rates • Missile Trajectories and Orbits • Thrust Studies • Flight Data • Sales and Market Analyses.

EAI Series 3100 DATAPLOTTER® can save you money and improve your engineering and computer services. For information on this new equipment, write to Department CA-22.
THE COMPUTER DIRECTORY  
AND BUYERS' GUIDE, 1962

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ADVERTISING INDEX

Following is the index of advertisements. Each item contains: Name and address of the advertiser / page number where the advertisement appears / name of agency if any.

Aeronutronic Div., Ford Motor Co., Newport Beach, Calif. / Page 9 / Honig-Cooper & Harrington
Bendix Computer Division, 5630 Arbor Vitae St., Los Angeles 45, Calif. / Page 3 / John B. Shaw Co., Inc.
Berkeley Enterprises, Inc., 815 Washington St., Newtonville 60, Mass. / Pages 71, 129 / ---
California Computer Products, Inc., 8714 Cleta St., Downey, Calif. / Page 79 / Hal Stebbins, Inc.
Dataman Associates, 120 Boylston St., Boston, Mass. / Page 160 / Larcom Randall Advertising, Inc.
Dialight Corp., 54 Stewart Ave., Brooklyn 37, N. Y. / Page 75 / H. J. Gold Co.
The Electrada Corp., Electronics Div., 11244 Playa St., Culver City, Calif. / Page 92 / ---
Honeywell Electronic Data Processing, Wellesley Hills 81, Mass. / Pages 118, 119 / Batten, Barton, Durstine & Osborn, Inc.
Hughes Aircraft Co., Fullerton 1, Calif. / Page 89 / Foote, Cone & Belding
Laboratory For Electronics, Inc. 305 Webster St., Monterey, Calif. / Page 43 / Fred L. Diefendorf Agency
Midwestern Instruments, Inc. P.O. Box 7509, Tulsa 35, Okla. / Page 77 / Paul Locke Advertising, Inc.
The Mitre Corp., Box 208, Bedford, Mass. / Pages 83, 85, 87 / The Bresnick Co., Inc.
The National Cash Register Co., Dayton 9, Ohio / Pages 91, 158 / McCann-Erickson, Inc.
Packard Bell Computer, 1905 Armacost Ave., Los Angeles 25, Calif. / Page 71 / Bertrand Classified Advertising Agency
Princeton University Press, Princeton, N. J. / Page 93 / Franklin Spier, Inc.
Scientific Data Systems, Inc. 1542 15th St., Santa Monica, Calif. / Page 157 / Faust/Day Advertising
Space Technology Laboratories, Div. of Thompson Ramo Wooldridge, 1 Space Park, Redondo Beach, Calif. / Page 90 / Fuller & Smith & Ross, Inc.

COMPUTERS and AUTOMATION for June, 1962
Aeronutronic is now delivering the highest speed instruction memories for
general use. Proved systems are available in standard line, built to
special requirements or packaged for larger memories or aerospace installations.

BIAX memories improve the performance of ground-based and aerospace data systems that must operate reliably at very fast repetitive read cycling rates. BIAX memories also enhance reliability in applications in which non-destructive readout, low power level, and operation over extended temperature ranges are significant design factors.

BIAX memories find ready usage in—Program, instruction, and statistics storage • Micro-programming techniques • Associative memories • Automatic check-out equipment • Digital simulators and training devices • Display and character generators.

The standard line of BIAX instruction memories offers modules ranging in size from 128 up to 1024 words for ground equipment. BIAX memories can also be customized to fit individual system design requirements not only in the area of speed performance but in capacity and packaging concepts as well.

Miniaturized aerospace BIAX memories are designed to withstand extreme shock, vibration and temperature environments. In this field, non-destructive readout, guaranteed security of stored data and low operating power levels are vital characteristics BIAX memories can add to your system. For technical brochure, specific application information, or for price and delivery details contact: BIAX Memories Department MX.

Typical Specifications for Standard BIAX memories

- Up to 1024 words
- Up to 36 bits per word
- Random Access—Non-destructive Readout
- Read Cycle time—1 µsec
- Access Time—0.3 to 0.4 µsec
- Operating Temperature—0°C to 50°C
- Loading—from manual entry to on-line operation up to 200 KC
- Power—less than 50 watts
ROSTER OF ORGANIZATIONS
IN THE COMPUTER FIELD

(Cumulative, information as of May 1, 1962)

The purpose of this Roster is to report organizations (all that are known to us) in the computer field: organizations making or developing computing machinery or data-processing machinery; organizations supplying services in the computer field; and organizations supplying components used in the computer field if related to the field (for example, magnetic drums would be such a component).

Entries. Each Roster entry if complete contains: Name of the organization, its address / Telephone number / Description of its main activities, main products in the field, any comments / Types of activities it engages in, size (expressed in number of employees), year established, nature of its interest in the computer field. In cases where we do not have complete information, we put down what we have.

Accuracy. We have tried to make each entry accurate to the extent of information in our possession. We shall be grateful for any more information or additions or corrections that anyone is kind enough to send us. Although we have tried to be accurate and complete, we assume no liability for any statements expressed or implied.

Abbreviations

The key to the abbreviations follows:

Activities
Ma Manufacturing activity
Sa Selling activity
Ra Research and development
Ca Consulting
Ga Government activity
Pa Problem-solving
Ba Buying activity
(Used also in combinations as in RMSa "research, manufacturing and selling activity")

Size
Ls Large size, over 500 employees
Ms Medium size, 50 to 600 employees
Ss Small size, under 50 employees
(no. in parentheses is approx. no. of employees)

When Established
Le Long established organization (1930 or earlier)
Me Organization established a "medium" time ago (1931 to 1950)

Interest in Computers and Automation
Dc Digital computing machinery
Ac Analog computing machinery
Ic Incidental interests in computing machinery
Sc Servomechanisms
Cc Automatic control machinery
Mc Automatic materials handling machinery

*C This organization has kindly furnished us with information expressly for the purpose of the Roster and therefore our report is likely to be more complete and accurate than otherwise might be the case. (C for Checking) / 62: information furnished in 1962 / 61: information furnished in 1961 / etc.

Organization Entry Form

The form to be completed for an entry in the Roster of Organizations follows:

1. Your organization's correct name?

2. Street address?

3. City, zone state?
   Telephone number?

4. Types of computers, data processors, accessories, components, services, etc., that you produce or offer?

5. Types of activity that you engage in:
   ( ) Research
   ( ) Manufacturing
   ( ) Selling
   ( ) Consulting
   ( ) Other (please explain)

6. Approximate number of your employees?

7. Year organization was established?

8. Listings for two of your executives:
   Name & Title
   Name & Title
   This data supplied by
   Title
   Date

COMPUTERS and AUTOMATION for June, 1962
Roster of Organizations

A

Accurate Electronics Corp., P.O. Box 935A, Elyria, Ohio / Endicott 5-1211 / º61
Plug and strip type plotting boards, connectors, jacks, jack panels, and terminals / RMA Ms(50) Se(1952) Ic

Ace Electronics Associates, Inc., 99 Dover St., Somerville 44, Mass. / S0mseriet 6-5130 / º61
Potentiometers, linear, non-linear, precision, subminiature, micro-miniature; trimmers, conductive plastic / RMA Ms(160) Se(1954) Ic

ACF Electronics Div., ACF Industries Inc., 40 Lafayette St., Riverdale, N. J. / Warfield 7-4444 / º62
Special purpose analog computers, test equipment computers, magnetic clutches, simulators, digital data transmission equipment / RMA Ls(1300) Le(ACF, 1959) Alc

Dispersions of colloidal graphite, molybdenum disulfide, and other solids used for surface and conductive coatings / RMA Ms(100) Le(1900) Ic

Actuarial Computing Service, Inc., 1309 Peachtree St., N.E., Atlanta 9, Ga. / TR 5-6727 / º60
Specializing in computer applications for the insurance industry, job shop computing / Ca Ss(7) Se(1956) Dc

Adage, Inc., 292 Main St., Cambridge 42, Mass. / Unicersity 4-6620 / º61
Special purpose analogical (i.e., combining analog operations and digital logic) computers; high speed, all semiconductor analog-digital converters / MsA Ms(125) Se(1957) Da/ic

ADB Institutet (Scandinavian Automatic Data Processing Institute), Chalmers University of Technology, Gibraltargatan 5, Gothenburg S, Sweden / º61

Addox, Inc., 300 Park Ave., New York 22, N.Y. / Plaza 5-5420 / º62
Tape punches and readers; posting machines with read-in and read-out, intercouplers / Stsole distributor for Swedish Parent Co.,ja Ms(70) Me(1957) Ic

Addressograph-Multigraph Corp., 1200 Bubbitt Rd., Cleveland 17, Ohio / RE 1-8000 / º60
Small, medium and large scale, multi and special purpose electronic data processing systems; card readers, file processor, multi-line serial printer and high speed line printers; electronic facsimile printers; transfer printers; bar code scanners / RMA Ls(000) Le(1903) Ic

Advanced Information Systems Co. (AIS), 3002 Midvale Ave., Los Angeles 34, Calif. / GR 8-9001 / º61
Consulting services, applications, program management, and research / Rca Ss(12) Se(1960) Dic

Advanced Scientific Instruments, Inc., 5249 Hanson Court, Minneapolis 22, Minn. / KE 3-2501 / º62
General purpose computers / RMA, developing programs for computers (ASI only) / Ms(65) Se(1960) Da/ic

AEC Computing and Applied Mathematics Center, Institute of Mathematical Sciences, 4 Washington Place, New York 3, N.Y. / Obregon 7-0200 / º60
Research and computing service for the Atomic Energy Commission. IBM 7014 with peripheral equipment / RCPa Ms(100) Se(1952) Dc

Aemco, Div. of Telex, name changed to Telex/Aemco, a Div. of Telex, Inc., which see

Aeronutronic, a Div. of Ford Motor Co., Ford Rd., Newport Beach, Calif. / Oriloe 5-1234 / º61
Complete BIAX memory systems; family of message entry and display systems; magnetic drum memory systems; large high-speed random access units; solid state printed circuit boards; complete military systems for command and control; airborne digital computers / RMA Ls(2200) Se(1956) Dic

Aerovox Corp., Bellville Ave., New Bedford, Mass. / Wyman 4-9601 / º61
Capacitors — all types, resistors, jacks, switches / RMA Ls(3000) Le(1922) Ic

Air Aircraft Armaments, Inc., Industry Lane, Cockeyville, Md. / Normandy 6-1400 / º62
Special purpose computers, simulators, training systems, telemetering systems, and test equipment for land, sea, and air based on custom specifications / RMA Ms(100) Me(1950) Da/ic

All Research Mg, Co. of Arizona (a div. of The Garrett Corp.), 402 S. 36th St., Phoenix 34, Ariz. / BR 5-6311 / º62
Pneumatic analog computers / RMA Ls(3500) Me(1950) Ac

Airflute Electronics Co., 535 Avenue A, Bayonne, N.J. / HEmlock 6-2230 / º61
Analog-digital converters, commuting devices for sampling, programming, etc. / RMA Ms(75) Me(1940) Da/ic

Airpax Electronics, Inc., 6601 N.W. 19th St., Fort Lauderdale, Fla. / Lladelow 3-4160 / º62
Differential, analog computer type magnetic amplifiers; complete line of servo, data logging and control systems; choppers, circuit breakers, transformers and telemetry equipment / RMA Ms(500) Me(1947) Ic

High frequency transformers; pulse, wide-band, duralcad. Ferrite-cored inductors. I.F. transformers. Micromodular and microelement components / RMA Ls(700) Le(1900) Ic

Alden Products Co., 1140 N. Main St., Brockton, Mass. / JuniPer 3-0160 / º62
Data processing applications, digital computer programming, computer simulation, multicolor light and switch indicators for annunciating color coded information on monitored panels or consoles / RMA Ms(100) Le(1900) Dic

Allard Instrument Corp., 146 E. Second St., Mineola, L.I., N.Y. / Pionineer 6-5005 / º60
Visual indicators / RMA Ms(20) Se(1952) Ic

Allegany Instrument Co., Inc., 1091 Wills Mountain, Cumberland, Md. / Parkview 4-1200 / º60
Data recording and computing systems for ballistic measurements / RMA Ms(250) Se(1952) Dic
Roster of Organizations

Allied Control Company, Inc., 2 East End Ave., New York 21, N.Y. / Butterfield 8-7403 / °C 62
Relays, subminiature toggle and push button switches, solenoid valves / RMSa Ls(955) Ms(1930) 1c

Service on IBM 1620 digital computer and a GPS high-speed analog computer; general research and development in the physical sciences / RMCa Ms(230) Me(1951) DAc

Allies' Products Corp., P.O. Box 108, Kendall 56, Fla. / CEdar 5-5424 / °C 61
Precision carbon-deposited resistors / RSAa Sa(10) Se(1951) 1c

Allvac Computer Div., El-Tronics, Inc., 1304o S. Cerise Ave., Hawthorne, Calif. / Osborne 5-0311 / °C 61
General purpose digital computer (ALNAC III-E and IV), computer component parts, card converters, universal tester, magnetic tape transport, magnetic tape buffer, magnetic drums, paper tape console, data reduction and input-output equipment / RMSc Ms(100) Se(1952) Dlc

amber & Amber, 19925 Schaefer Rd., Detroit 35, Mich. / Area code 313, 864-1613 / °C 62
Automation systems, creative writing in science and engineering / Ca As Yc 1c

American Bosch Arma Corp., Roosevelt Field, Garden City, N.Y. / °C 62
Digital and analog computers, packaged computer circuits, high-speed printers, photoelectric readers, computer test equipment and fire control equipment / RSAa Ls(20) Le(1919) DAlCc

American Data Machines, Inc., 7 Commercial St., Hicksville, N.Y. / °C 62
Portable card punch; converter, card to paper tape; data recording and collating equipment / RMSc Ms(75) Se(1961) 1c

American Data Services, Inc., 2221 S.W. Fifth Ave., Portland 1, Ore. / Capitol 6-6851 / °C 62
System design, programming, data processing and machine services provided business, governmental and scientific groups. Computers used are Burroughs 205 and IBM 1401 / Ca Sa(20) Sc(1960) 1c

American Hydromath Corp., 24-20 Jackson Ave., Long Island City 1, N.Y. / EX 2-4242 / °C 62
Mechanical and electro-mechanical analog computers; special purpose slide rules, quality control computers, mechanical monographs / RMSc Sa(10) Me(1940) Ac

American Lava Corp., Manufacturers Rd., Chattanooga 5, Tenn. / AMHerst 5-3411 / °C 62
Technical ceramics, substrates, metal ceramic assemblies. Special capacitors, with or without encapsulation or leads / Ma Ls(1200) Le(1902) 1c

American Research and Manufacturing Corp., 920 Halpine Ave., Rockville, Md. / HA 7-7116 / °C 62
Electronic components, preparation of manuals and training aids, electromechanical design services / RSAa Ms(75) Se(1954) 1c

American Systems Inc., 1125 East 126th St., Hawthorne, Calif. / PL 6-1301 / °C 61
Design, production of digital systems, sub-systems, and peripheral equipment; information processing research and service; application of modern analytical techniques to problems of government, science and industry / RMSc(1950) Ms(100) Se(1960) DAIsc

American Telephone and Telegraph Co. and Associated Bell System Telephone Companies, (Hq.) 195 Broadway, New York 7, N.Y. / °C 62
Complete communications services for data processing systems / (service) Ls Le 1c

The American University - EDPL, 1901 F St. N.W., Washington 6, D.C. / Sterling 3-4940 / °C 62
Research; teaching; training; consulting, LGP-30; RPC-1000; RPC-9000 / FTC(research and training) Sa(8) Se(1960) 1c

AMP, Inc., Harrisburg, Pa. / Jordan 4-0101 / °C 62
Solderless terminals, connectors, patchcord programming systems and pinboards, computer power supplies / Ma Ls(3000) Me(1941) 1c

Ampex Electronic Corp., 230 Duffy Ave., Hicksville, L.I., N.Y. / WEils 1-6200 / °C 62
Electron tubes, semiconductors, circuit blocks / RSAa Ls(600) Le(1927) 1c

Ampex Computer Products Co., 9937 Jefferson Blvd., Culver City, Calif. / Upton 0-0571 / °C 62
Tape handlers, ferrite magnetic cores, wired core arrays and stacks, core buffer memories, solid state memory systems / RMSc Ls(570) Me(1948) 1c

Ampex Corp., Data Products Co., 934 Charter St., Redwood City, Calif. / EMerson 9-7111 / °C 62
Magnetic tape recorder-reproducers and readers; magnetic tape systems for programming computers; memory systems; input-output devices; digital and analog magnetic storage devices; data recording equipment; facsimile equipment; information retrieval devices / RMSc Ls(2000) Me(1947) 1c

Ampex Magnetic Tape Products, a Div. of Ampex Corp., Opelia, Ala. / SH 5-7643 / °C 61
Ampex computer tape, accessories, storage containers, reels, and shipping material / RMSc Ls(275) Me(1946) 1c

Amphenol-Borg Electronics Corp., Broadview, Ill. / Connectors and potentiometers for computer applications; all types / RMSc Ls Se(1958) 1c

Amphenol Connector Div., Amphenol-Borg Electronics Corp., 1030 S. 54th Ave., Chicago 50, Ill. / Bishop 2-1000 / °C 62
Standard, miniature, and microminiature connectors. Intercon printed circuitry. Cable assemblies / RMSc Ls(2500) Le(1932 as American Phenolic) 1c

Amplifier Corp. of America, 396 Broadway, New York 13, N.Y. / WOrth 6-2929 / °C 62
Tape recorders, tape decks, transistorized electronic modules and plug-in boards, transistorized power supplies, transistorized amplifiers, flutter meters, demagnetizers; instruments to order / RMCPa Sa(25) as an affiliate of Keystone Camera Co., Inc., additional personnel and facilities readily available / Mc(1950) 1c

ANADEX INSTRUMENTS INC., 7617 Hayvenhurst Ave., Van Nuys, Calif. / °C 62
Tape perforating punches, digital displays, digital counters and data-processing equipment / RMSc Sa(25) 1c

Analog Control, Inc., 200 Frank Rd., Hicksville, L.I., N.Y. / Overbrook 1-7300 / °C 62
Precision potentiometers to 0.002% linearity, linear and functional; single and multiple turn; single and multi-gang; 1/2" diameter / RMSc Ms(110) Se(1954) 1c

Computers and Automation for June, 1962
Andersen Laboratories Inc., 501 New Park Ave., West Hartford 10, Conn. / / / / Amons 6-1201 / / / / 06
Digital delay lines, transistorized memory devices, magnetostrictive delay lines, ultrasonic delay lines, electromagnetic delay lines / RMA Sm(140) Me(1951) DSc
ANelec Corp., 150 Causeway St., Boston 14, Mass. / / / / Richmond 2-1720 / / / / 06
High-speed printers: ANelec Series 4 Print Station, airborn printer, special purpose and militarized printers. ANelec printer training program / RMA Sm(450) Se(1952) Ic
Consulting and programming on all electronic digital computing systems / RCPa St(30) Se(1959) Ic
Applied Dynamics, Inc., 2275 Platt Rd., Box 612, Ann Arbor, Mich. / / / / NO 5-4493 / / / / 06
Analog computers, general and special purpose, and associated components / RMA Sm(15) Se(1956) AI(S)
ARCO Div. of All American Engineering Co., 135 Main St., Belleville 9, N.J. / / / / / / 06
Custom designed test equipment, instrumentation, controls, power supplies, pulse amplifiers, special purpose analog computers / RMA Sm(15) Se(1956) AICe
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass. / / / / Jamaica 2-8640 / / / / 06
Ultrasonic delay lines, ultrasonic test equipment / RMA Sm(25) Me(1960) Ic

ARIES CORP., 7722 Morgan Ave. South, Minneapolis 23, Minn. / / / / / / 06
Automatic programming techniques, systems engineering, operations analysis, reliability / Ca Sm(10) Se(1962) Ic

Arken Engineering, Inc., 11000 W. Olympic Blvd., Los Angeles 64, Calif. / / / / / / 06
Engineering and consulting services. Experienced in designing and shipping hardware. Semiconductor circuits, data systems, automatic checkout and control, complete computers, telemetry, instruments, value analysis, proposals / Ca Sm(12) Me(1949) Ic
Arma Division, American Bosch Arma Corp., Old Country Rd., Garden City, N.Y. / / Pioneer 2-2000 / / / / 06
Analog, digital, transistorized and miniaturized computers for application in ships, manned aircraft, missiles and ground environment / RMA Sm(6000) Le(1919), corporation) AICe
Armour Research Foundation of Illinois Inst. of Technology, 10 W. 35th St., Chicago 10, Ill. / / Calumet 5-9600 / / / / 06
Univac 1105 research computation facility, computer applications and operations research, information systems studies, mathematical programming, design and development of digital systems / RCPa Sm(1350) Me(1937) DA/SCc
Arnold Ceramics Inc., Chicago East 57th St., New York 22, N.Y. / / / / Plaza 5-0213 / / / / 06
Long-life, high-stability, carbon-film resistors; high speed compacting presses for memory cores / Sa Sm(6) Me(1940) Ic
The Arnold Engineering Co., Railroad Ave. E West St., Arena, Ill. / / / / 4-5030 / / / / 06
Magnetic materials / RMA Sm(650) Me(1936) Ic
Aasbjorn Hubberstad A/S, Konowsgt. 8, Oslo, Norway / / / / Oslo 67-47-00 / / / / 06
AICe

management science and all problems of data processing with punch card machines or electronic computers / Ca Sm(70) Me(1940) DAc
Assembly Producers, Inc., 75 Wilson Mills Rd., Chesterland, Ohio / / HA 3-3131 / / / / 06
Contact meter relays, panel meters, "packaged controls", special electronic controls, electrically actuated controls, automatic control equipment / RMA Sm(330) Me(1945) DAc
Associated Sales Analysts, Inc., 220 West 42nd St., New York 36, N.Y. / / / / / / 06
Punched card and magnetic tape electronic data processing / C(data processing) Ma Sm(200) Me(1952) Ic
Association of Data Processing Service Organizations, 1000 Highland Ave., Abington, Pa. / / / / 215-659-4300 / / / / 06
A non-profit association; symposium, literature. General association services to owners and managers of data processing service centers / Ca Sm(10) Se(1960) Ic
Astrometries, Inc., 1100 Santa Barbara St., Santa Barbara, Calif. / / / / Woodland 5-0931 & 965-0406 / / / / 06
Electronic computer manufacturers, decommutators, FM receivers (telemetry), low-level switches and choppers, multiplexers, demultiplexers, Servo-controlled high-fidelity audio systems, Attenuator audio system (intelligence improving receiving equipment), no-moving parts recorder and playback system, low-level amplifiers, etc., automatic data processing systems, telemetry systems, amplitude probability-density analyzer system / RMA Sm(12) Se(1957) DAc
Astron Corp., 255 Grant Ave., E. Newark, N.J. / / Humboldt 2-7600 / / / / 06
Various types of paper capacitors, electrolytic capacitors, solid tantalum capacitors and fixed dielectric and R.F. interference noise suppression filters / Ma Sm(450) Me(1950) Ic
Mechanical analog computers for fire control, radar, etc.; geared mechanisms, servos, etc.; analog-to-digital converters, sub-assemblies; precision gears, differentials, bearings / Mo Sm(200) Me(1929) AIc
Audio Devices, Inc., 444 Madison Ave., New York 22, N.Y. / / Plaza 1-6640 / / / / 06
Magnetic recording tape for use in computers, telemetry, seismography, automation / RMA Sm(330) Me(1937) Ic
Audio Instrument Co., Inc., 135 West 14 St., New York 11, N.Y. / / / / Oregano 5-7820 / / / / 06
Analog time delay devices; logarithmic converters / RMA Sm(9) Me(1949) Ic
Auerbach Corporation, 1634 Arch Philadelphia 3, Pa. / / Locust 3-7797 / / / / 06
Consulting services in systems engineering, computer programming, business information systems, product and market planning, programmed teaching, computer analysis (standard EDP reports) / Ca Sm(100) Se(1957) DAc
Automated Accounting Center of Connecticut, 7 Field St., Waterbury, Conn. / / / / PL 6-8389 / / / / 06
Data processing services. Equipment: Bendix G-15 computer, NCR sorter-reader, sorter-coupler, adding machine punches, magnetic tape accessories, Flexowriters / Sm(10) Ic
Automated Precedures Corp., 306 Park Ave. S., New York, N.Y. / / / / MU 5-7216 / / / / 06
IBM 1401 - 1410; Univac file computer; Friden; all peripheral equipment. Subsidiaries: Cyber-
Babcock Electronics Corporation, 1640 Monrovia Ave., Costa Mesa, Calif. / Liberty 8-7705 / °C 61
Remote control systems, receivers, transmitters, encoders, decoders and signal generators / RMSa
Ls(8000) Me(1947) Ic

Baird Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio / GL 1-4600 / °C 62
Automatic control equipment, special purpose computers, data processing equipment, analog and
digital information systems / RMSa
Ls(2000) Le(1916) DACc

Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass. / University 4-7420 / °C 61
Spectrochemical, electronic and radiotisotope instrumentation for analysis and control;
electron tubes, proportional counters, electronic counters, sorting and counting controls,
scientific instruments, analog devices, servomechanisms, transistors, print readers / RMSa
Ls(700) Me(1956) Ic

Ballastan, Div. of Telcon Inc., 1701 N. Calhoun St., Ft. Wayne 7, Ind. / E-9602 / °C 61
Pulse transformers, specialty transformers / Ma
Ms(150) Me(1946) Ic

Battelle Memorial Institute, 505 King Ave., Columbus 1, Ohio / - / °C 62
Digital and analog research in systems engineering, servomechanism, automatic control
machinery, and automatic materials handling machinery / Ha
Ls(2200) Le(1929) DASCc

Beckman Instruments, Inc., Berkeley Div., 2200
Wright Ave., Richmond, Calif.; Helipot Div.,
2500 Harbor Blvd., Fullerton, Calif.; Systems
and Systems Div. -- TRajac I-8400 / °C 62
Instruments, systems and components for analysis,
measurement and control: amplifiers; automatic
test and control equipment; printed circuit boards;
printed circuits, including arithmetical, logical and plug-in types; ana­
log computers and computer components and services; all types of information converters;
electronic counters; high-speed multi-channel
data processing systems, recording and re­
duction equipment; delay lines, dials, poten­
tiometers; Hall Effect devices; high-speed
printers; servomechanisms; telemetering sys­
tems; test equipment, translating equipment;
systems components; missile checkout systems;
and military study contracts in areas of com­
puting instrumentation and data processing / RMSa
Ls(5000) Me(1935) DASCc

Bell Aerosystems Co., P.O. Box 1, Buffalo 5, N.Y. / - / °C 62
IBM 607, 1401, 704 and 7090 / RMSa
Se(1960) DAC

Bendix Computer Div., 5630 Arbor Vitae St., Los
Angeles 45, Calif. / ORRitch 0-3640 / °C 62
G-15 and G-20 general purpose computing sys­
tems; G-21 special purpose military system / RMSa
Ls Se(1952) DACc

Bendix Corp., Bendix-Pacific Division, 7250 Laurel
Canyon, N. Hollywood, Calif. / PDPiars 5-1200 / °C 61
T/M ground stations, data acquisition, area
monitoring, computer buffering and digital
transmission systems; analog-digital convert­
ers, data processing, format, conversion and
transmission equipment; input transducers with
digital outputs for temperature, pressure,
time, date, speed, direction and frequency;
logic modules / RMSa Ls(3550) Le(1915, com­
pny; 1937, this division) DACc

The Bendix Corp., Eclipse-Pioneer Div., Teterboro,
N.J. / Atlas 8-2000 / °C 62
Synchrons, servo motors and motor generators,
gyros and related components for servo-mech­
anism; automatic controls, analog-to-digital
converters, electronic and mechanical integra­
tors, resolvers, Airborne Digital Computer,
analog and digital modules, memory storage
devices, data processing equipment, visual
output indicators, automatic check out sys­
tems / RMSa Ls(10,000) Le(1916) DACc

Bendix Corp., Industrial Controls Section, 21820
Wyoming Ave., Detroit 37, Mich. / J0 6-9600 / °C 62
Numerical control systems for machine tools,
circuit cards, card testers, servo drives / MSa
Ms(300) Se(1957) Ic
BENDIX CORP., RESEARCH LABORATORIES DIV., Southfield (Detroit), Mich. / KEmwood 7-3300 / °C 62
Research in analog, digital, and hybrid techniques; special purpose analog and digital computing and control systems / RCA Ls(700) Le(1929) DAScC

Benson-Lehner Corp., 1860 Franklin St., Santa Monica, Calif. / EBrook 3-9291 / °C 62
Data reduction, handling, and translating equipment; record readers; oscilloscopes, film, etc.; data storage and retrieval machines; data display devices including line drawing plotters, point and symbol plotters, high precision digital plotters, analog plotters, special readers including map and blue plotter, digital microscopes and comparators; shaft rotation-to-digital converters; inventory and memory systems; electrically controlled typewriters, photo instrument equipment including high speed cameras, tracking and strike cameras, take-off cameras and associate equipment. Plotting equipment with inputs from computers, magnetic tape readers, film and oscillograph readers with computer compatible output; service bureau on all the above / RMSca Ms(250) Se(1950) DAc

Berkeley Division of Beckman Instruments, Inc., 2200 Wright Ave., Richmond, Calif. / LA 6-7750 / °C 62
General purpose, electronic analog computers, as well as operational amplifiers, function generators, computing resistors and capacitors in oven, electronic multipliers and resonators, patchbays and patchboard and digital control systems / RMSca Ls(600) Me(1946) DAIc

Edmund C. Berkeley and Associates, 815 Washington St., Newtonville 60, Mass. / DEmcator 2-5453 or 2-3928 / °C 62
Courses by mail in automatic computing machinery, mathematics, and other scientific subjects / PCA Ss(5) Me(1940) Dc(affiliated with Berkeley Enterprises, Inc.)

Berkeley Enterprises, Inc., 815 Washington St., Newtonville 60, Mass. / DEmcator 2-5453 or 2-3928 / °C 62
Electric brain construction kit for educational purposes; Brainiac. Publisher of "Computers and Automation" and other publications. Small robots; robot show-stoppers; delay line (tilt-toe machine) / RMSa Ss(10) Se(1954) Dc(affiliated with Edmund C. Berkeley & Associates)

Tape 1401 and complete IBM data processing unit / C(service bureau for data processing) a Me(75) Se(1955) Dc

Bonner & Moore Associates, Inc., 6910 Famin St., Houston 25, Tex. / - / °C 62
Consulting and research in operations research, economics, systems engineering, process control, computer applications and programming (proprietary linear programming and general data reduction packages for several machines) / RCPa Ss(20) Se(1956) DASc

Technical consulting in operations research; research and development in reliability, applied statistics, electromechanisms, instrumentation, systems analysis, electronics and communications and physics / RCA Ss Ss / °C 61

Booz, Allen & Hamilton, 135 S. LaSalle St., Chicago 3, Ill. (offices also in New York, Washington, D.C., Cleveland, Detroit, San Francisco, Los Angeles, and Seattle) / Financial 6-1900 / °C 61
Management consultants; technical services in electronic and automatic data processing for totally integrated management controls systems for industry, commerce, government, and institutions / CPa Ls Le(1914) Dc

Borg-Warner Controls, Div. of Borg-Warner Corp. (formerly BJ Electronics, Inc.), 3300 Newport Blvd., Santa Ana, Calif. / Kimberly 5-5501 / °C 61
Miniature magnetic tape recorders; radio frequency test instrumentation; variable reluctance transducers and accelerometers / RMSa Ms(330) Me(1945) Dc

Bourns, Inc., Trimpot Div., 1200 Columbia Ave., Riverside, Calif. / - / °C 62
Trimpot potentiometers, adjustment and precision types as well as relays / Ma Ls(1300) Me(1948) Dc

Precision servo components and assemblies, counters, electronic devices, measurement and test instruments / RMSa Ls(1000, including subsidiaries) Me(1951) Dc

Brand - Rex Division, American Enka Corp., 31 Sudbury Rd., Concord, Mass. / EMerson 9-9630 / °C 62
Wire, cable, electrical insulating materials / RMSa Ls(1000) Le(1920) Dc

William Brand - Rex Division, American Enka Corp. - name changed to Brand - Rex Division American Enka Corp., which see

Delay lines: lumped constant, distributed constant, ultrasonic. High voltage pulse cable connectors, environmental test service / RMSa Ms(150) Me(1945) Dc

The Bristol Co., P.O. Box 1790 CAG, Waterbury 20, Conn. / Plaza 6-4451 / °C 62
Electronic and potentiometric recording, indicating, controlling, signalling; alarm and telemetering instruments for standard and special functions; components including choppers, high speed relays, capsular elements, remote positioners, pressure switches and transducers; miniature standard and special socket screws; recording papers; data logging equipment / RMSa Ls(1000) Le(1909) Dc

Broadview Research Corp., 117 Trousdale Dr., Burlingame, Calif. / Diamond 4-7625 / °C 61
Data systems and intelligence systems analysis; scientific and business programming services; assembly routines and compilers; systems simulation; operations research techniques / RCPa Ms(100) Se(1951) DAIc

BRYANT COMPUTER PRODUCTS, DIV. OF EX-CELL-O CORP., 650 Ladd Rd., Walled Lake, Mich. / Market 4-4571 / °C 62
Manufacture magnetic drums and disc files, complete memory systems, and related circuits / RMa Ms(250) Se(1952) Dc

Budd Electronics, 43-22 Queens St., Long Island City 1, N.Y. / - / °C 62
Data retrieval systems, data display systems, special purpose computers, custom designing of logic circuits, data encoders and decoders, storage systems, cathode ray tube displays and print-out units. Specialists in weather radar data processing / Re: Ms (906) Se (1960) as a division of The Budd Co.) DAC.

Jull Corp. of America, 521 5th Ave., New York 17, N.Y. / UKon 6-9966 / °C 61
Punched card equipment, data processing systems, electronic gamma computers / WA 75 Se (1960) 1c

J. H. Bunnell & Co., 81 Prospect St., Brooklyn 1, N.Y. / ULster 8-0100 / °C 62
Electronic tape winders, punched tape readers / Ma Ms (60) Le (1978) 1c

The Bureau of National Affairs, Inc., 1231 24th St., NW, Washington 7, D.C. / FE (300) Me (1933) 1c

Bruline Associates, Ltd., 510 S. Fulton Ave., Mt. Vernon, N.Y. / NO 4-7450 / °C 61
Analog computers, computing amplifiers and power supplies, analog recorders, analog to digital converters, digital voltmeters / Sa Sa (35) Le (1920) ADic

Burdnys Corp., Norwalk, Conn., TeMple 8-4444 / °C 62
Electrical and electronic connectors, printed circuit connectors / RMSa La (2000) Le (1924) 1c

Jurr and Company, P.O. Box 122, Wellesley Hills 81, Mass. / °C 61
Equity capital for small firms in the digital computer industry / Sa (2) Se (1959) 1c

Burroughs Corp., 6071 Second Ave., Detroit 32, Mich. / TMinity 5-2260 / °C 62
Burroughs 5000, 205 and 2200 series (250, 260, 270, 280) electronic data processing systems and digital computer components; also the E101 and E103 desk-size electronic digital computers for scientific and general business usages, respectively; specialized punched card input-output systems; card-to-paper-tape conversion equipment; magnetic tape storage systems; tape handlers, keyboards, magnetic tape filing systems and tape recorders, paper tape and card readers and punches. Adding machines, bookkeeping machines, multiple tape listers, high speed printers, photo readers, etc. / RMSa Ls (300, 900) Le (1965) Dic

Burroughs Corp., Electronic Components Div., Plainfield, N.J. / PL 7-5000 / °C 61
Digital components and instruments / RSA Ms (200) Se (1956) Dic

Burroughs Corp., Electronic Tube Div., Mt. Bethel Rd., Mt. Bethel, N.J. / P.O. Box 1226, Plainfield, N.J. / PL 7-5000 / °C 60
Beam switching tubes, NIXIE® indicator tubes, PIXIE position indicator tubes, BEAM-X switch, TRIXIE drive module for NIXIE pulse control instruments, electronic counters, and visual output devices / RSA Ms (135) Se (1954) 1c

Business Automation, 208 Park Ave. W., Elmhurst, Ill. / DEEarbon 2-3206 / °C 62
Monthly magazine devoted to business automation and data processing for corporate and middle management. Covers systems, machine accounting, communications and use of business forms for management in all types of industry, commerce, institutions and the government / MS (publishing) a Ms (40) So (1958) 1c

Home study courses in computer programming. Courses include programming technology and systems design in terms of business applications. General programming techniques and specific training for IBM 1401 Data Processing System / Education Ss (10) So (1955) 1c

Bytrends Corp., 50 Hunt St., Newton 50, Mass. / WA 66-9960 / °C 62
Multi-channel strain gage data loggers, digital recording systems, electronic weighing and measuring systems, transducers / Ma So (30) Se (1950) 1c

Cadle Industries Corp., 20 Valley St., Endwell, N.Y. / PL 8-3375 / °C 62
Cable harnesses, cable assemblies, wiring harnesses, custom manufacturing: amplifiers, plug-in modules and panels, test equipment, communications equipment and systems / RSA Ls (1400) Me (1950) 1c

California Computer Products, Inc., 6714 Cleta St., Downey, Calif. / SPruce 3-4921 / °C 61
Digital incremental X-Y recorders; magnetic tape plotting systems; digital computer development work / RMSa Ms (50) Se (1951) Dic

California Instruments Corp., 3511 Midway Drive, San Diego 10, Calif. / - / °C 62
DC amplifiers, automatic oscilloscopes, analog voltage comparators / RSA Ms (30) Se (1957) 1c

California Technical Industries Div. of Textron Inc., 1421 Old County Rd., Belmont, Calif. / Lxell 3-8466 / °C 60
Automatic test equipment, cable assemblies, computer test equipment, paper tape readers, paper tape punches, paper tape duplicators, punched card readers / RMSa Ms (125) Me (1940) 1c

Calvert Electronics Inc., 220 E. 23rd St., New York 10, N.Y. / Canal 6-7400 / °C 62
Microwave tubes, power tubes, cold cathode tubes, semi-conductors, storage oscilloscope which permits storage of signal for one week and permits comparison of 10 traces / So Sa (25) Me (1949) 1c

Cambridge Communications Corp., 238 Main St., Cambridge 42, Mass. / KI 7-1997 / °C 62
Abstracting articles and reports on cards / RSA Ms (9) Se (1957) 1c

Miniature transistorized digital modules including flip-flops, inverter-nor logic, gates, buffer amplifiers and level triggers / RMSa Ms (275) Me (1941) 1c

Canadian Applied Research Ltd., 750 Lawrence Ave. W., Toronto 19, Ont., Canada / Russell 1-1571 / °C 61
Instrumentation equipment using electronics, mechanics, optics, for application in fields of aviation, photography, aerial survey; automatic film processors, data recording cameras, analog computers, computer test equipment, automatic controls, fire control equipment, geophysical apparatus / RSA Ms (400) Se (1951) ACic

Canadian Westinghouse Co., Ltd., P.O. Box 510, Hamilton, Ont., Canada / Jackson 9-0011 / °C 60
A management for solving problems concerned with the simulation of transport delays and problems requiring information storage in analog form / RMSa Ls (1000) Se (1951) ALC

Canning, Sisson & Assoc., Inc. -- name changed to Data Processing Digest, Inc., which see
C BTS, a Div. of Columbia Broadcasting System, Inc., 227 High Ridge Rd., Stamford, Conn. / DAvis 5-4321 / °C 62

VIDIAC Model 356-10 solid-state character generator / RMsCa Ms(250) Me(1966) Ic

C-E-I-R, Inc., One Farragut Square, Washington, D.C. / OT 4-6377 / °C 61

Linear programming; operations research; market research; econometrics; sampling and forecasting; systems design; computer programming; sales & distribution studies; PER; mathematical model building; weapons systems analysis; war and business gaming; economic planning; reliability & quality control; production scheduling; inventory control; electronic data processing; mathematical statistics / RC(computing service) / Ls(750) Se(1954) DAIC

C-E-I-R, Inc., 1200 Jefferson Davis Highway, Arlington 2, Va. (also: New York City; Los Angeles; Houston; Hartford; San Francisco; Palo Alto; Boston; Dugway, Utah; Fort Huachuca, Ariz.; London; England; Paris, France) / OTIs 4-6377 / °C 61

Computing and consulting services. Offer IBM 704, IBM 7090 and peripheral equipment; programming / Bcpa Ms(320) Se(1954) Ic

Celco, 70 Island Ave., Mahwah, N.J. / DAvis 7-1123 / °C 60

Deflection yokes, magnetic amplifiers, transformers / Rm(development) Ms(125) Sc(1950) Ic

Centralab (The Electronics Div. of Globe-Union Inc.), 900 E. Keefe Ave., Milwaukee 1, Wis. / WO 2-9200 / °C 62

Packaged circuits, potentiometers, switches, capacitors, engineering ceramics and precision resistors / Ms Ls(2600) Le(1922) Ic

Century Electronics & Instruments, Inc., 1353 N. Utica St., Tulsa 4, Okla. / °C 61

Multi-channel recording oscillographs of direct writing, electrophotographic, and conventional photographic type; vibration and stress analysis systems; data recording equipment and cameras; input-output devices; galvanometers; null balance recording potentiometers, UV direct writing oscillograph / Rmns Ms(250) Me(1945) Ic

C G Electronics Corp., 15000 Central, E., Albuquerque, New Mexico / AT&Tel 9-7601 / °C 60

Digital data acquisition and reduction systems, data reduction services, digital telemetry systems. Plug-in, printed circuit boards, analog and digital computers; digital computing services; consulting services; geophysical apparatus, information retrieval devices, input-output devices, electronic integrators, inventory systems, memory systems, transmitting equipment, visual output devices / Hmmsca Ms(110) Se(1954) DAIC

CGS Laboratories, Inc. -- name changed to Trak Electronics Co., Inc., which see

Chadwick-Helmuth Co., 472 E. Duarte Rd., Monrovia, Calif. / ElEliot 8-4567 / °C 61

Electronic multiplier, oscilloscope sweep control, pulse camera, slow motion sampling / RmsCa Ss(12) Se(1953) Ac

Chrono-log Corp., 2563 West Chester Pike, Broomall, Pa. / Hilltop 6-1016 / °C 62

Real-time reference systems for digital computers, including time and date. Digital clocks, calendars, counters. Consultants in process control, computer control, industrial and military / RmsCa Ss(10) Se(1956) Dc

Cinch Manufacturing Co., 1026 S. Homun Ave., Chicago 24, Ill. / °C 62

Components for computers; tube sockets, connectors, printed wiring boards, terminal boards, etc. / RmsCa Ls(1400) Le(1924) Ic

Circuit Engineering, 102 Ellis Rd., Weston 93, Mass. / Twinbrook 4-6071 / °C 60

Consultants. Transistor, magnetic, electronic, conductive, and other information handling circuits / Cs Sc(1954) Ic

Civil Engineering Systems Laboratory, Rm. 1-090, M.I.T., Cambridge 39, Mass. / UniveRsity 4-6900, Ext. 3881 / °C 62

Research and development on the uses of analog and digital computers in engineering. Instrumentation design and prototype development. Research on information systems / Ra Ss(20) Se(1958) DAIC

C. P. Clare & Co., 3101 N. Pratt Blvd., Chicago 45, Ill. / AM 2-7700 / °C 62

Sealed contact reed relays, mercury wetted contact relays, telemetering relays, stepping switches / Rmsns Ls(1600) Me(1957) Ic

Clarkson Press Inc., 169 Van Rensselaer St., Buffalo 10, N.Y. / TL 3-7500 / °C 62

GC data processing forms; GC panelLOGIC, GC forms-handling equipment / RmsCa Ms(125) Sc(1947) Ic


Precision potentiometers (wirewound and composition element), switches, wirewound power resistors / RmsCa Ls(1400) Le(1922) Ic

Clary Corp., 406 Junipero St., San Gabriel, Calif. / Clumberland 3-2724 / °C 62

Solid state digital computers, arithmetic center, high-speed line printers and tape perforating equipment / Rmsns Ls(1400) Me(1939) DiC

Clevite Transistor, 200 Smith St., Waltham 54, Mass. / Twinbrook 4-7780 / °C 62

Gold bonded germanium diodes, silicon alloy diodes, silicon mesa diodes, milliminiature germanium diodes, silicon diffused rectifiers, germanium alloy power transistors, silicon planar epitaxial transistor, encapsulated modules / Ms Ls(1800) Sc(1953) Ic

Clifton Precision Products Co., Inc., Marlpe at Broadway, Clifton Heights, Pa. / Madison 2-1000 (Area Code 215) / °C 62

Synchros, rotary components, miniature servo assemblies / Rmns Ms(1400)+ Me(1947) DAIC


Magnetic storage units, compact memory units, read/write circuitry and associated digital electronics / Rmns Ss(26) Se(1961) Ic

Collins Radio Co., Information Science Center, 19700 San Joaquin Rd., Newport Beach, Calif. / Kimberley 9-2911 / °C 62

Collins Kineplex data communications systems for transmission of punched card, magnetic tape and other digital information over telephone line, radio circuit or other voice channels. Commercial and military communication and data processing systems and equipment including airborne data systems, teletype and other message

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Direct analog computer, specialists in complex structural analysis / RMSa Ms(65) Se(1956) Dlc
Computer Equipment Corporation, 11612 W. Olympic Blvd., Los Angeles 64, Calif. / GR 9-4131 / °C 62
Digital data acquisition systems; range instrumentation; time sequencing systems; time-to-digital converters. Computer-formulating systems / RMSa Ms(60) Se(1956) Dlc
Computer Logic Corp., 11600 W. Olympic Blvd., Los Angeles 64, Calif. / / / °C 62
Logic cards and all system accessories. Special digital computer and custom systems. Circuit and system design consulting. Digital relay timer / RMSa Se(15) Se(1961) Dlc
Digital frequency counting, timing, controlling and recording instruments. Motion picture film processing equipment / Msa Ms(140) Me(1949) Dlc
Professional services, including: logical design, mathematical analysis, computer programming, data reduction, computer systems analysis, design and evaluation / C(programming; systems design & analysis) Sa(8) Se(1960) Dlc
Complete computing services; small to large-scale computers available. Data processing (both commercial and scientific). Consulting; including analysis, programming, training, machine processing, feasibility studies, systems programming / RCPa Sa(42) Se(1959) Dlc
Computer Services, Inc., 270 Park Ave., New York 17, N.Y. / WI 7-0583 / °C 60
Digital design and development; systems analysis; programming; computer installation and operation; service bureau operation on two general purpose computers and 40 electromechanical computers, one high-speed printer and miscellaneous IBM equipment / RCPa Ms(30) Se(1958) Dlc
Computer Systems Consultants, P.O. Box 3352, Kansas City, Mo. / / / °C 62
Consulting services; systems and programming service for small and medium sized businesses. Assembler, compiler and simulator development / Ca Sa(5) Se(1962) Ic
General purpose analog computers, DFG's, multipliers, servos, plotting boards, and rental of computing services / RMSa Ms(15) Se(1961) Ic
Programming services, computer efficiency studies, machine translations / Ca Sa(35) Se(1961) Ic
Special purpose data handling and control systems. Also electronic and electromechanical components, including memory systems and packaged circuitry for computational, control and data handling applications / RMSa Ms(350) Se(1952) Dlc
Computer Engineering Associates, an affiliate of Susquehanna Sciences, Inc., 350 N. Halstead St., Pasadena, Calif. / Elgin 5-7121 / °C 62
Direct analog computer, specialists in complex structural analysis / RMSa Ms(75) Se(1952) Ac
Colorado Technical Corp., 34-36 Brooklyn-Queens Expressway, West, Woodside 77, N.Y. / Yellowstone 2-0500 / °C 61
Delay lines, wide-band RF transformers, protective coatings / RMSa Ms(70) Se(1950) Ic
Comar Electric Co., 3349 Addison St., Chicago 10, III. / Juniper 6-2410 / °C 60
Relays, including hermetically sealed and subminiature, solenoids, coils and switches / Msa Ms(430) Me(1942) Ic
COMCOR, Inc., 430 S. Navajo, Denver 23, Colo. / Skyline 6-3608 / °C 62
Special purpose analog computer systems and components, computer facility maintenance / Msa Ms(40) Se(1959) Ic
Commercial Computers Inc., 36 Pleasant St., Watertown 72, Mass. / WA 6-0335 / °C 61
Small desk top computers, digital modules / Msa Ms(6) Se(1961) Dlc
Comptometer Corp., 3500 W. Jarvis Ave., Chicago 48, Ill. / Niles 7-5000 / °C 61
Duplex and Simplex Comptometer adding-calculating machines, Comptograph 10-key adding machines, Electrowriter written communications equipment, telegraphic word counter, tape winding equipment, data conversion equipment / RMSa Ls(2000) Lt(1800) Ic
Comput-Center Corporation, 136 West 52nd St., New York 19, N.Y. / CI 5-6006 / °C 60
Consulting, analysis, training, programming, and programmers on a contractual basis, as well as assisting in, or assuming complete responsibility for a short or long-term computer effort / Rca Sa(5) Se(1960) Ic
Compumatrix, Inc., 440 S. Brentwood Blvd., St. Louis 5, Mo. / PA 6-2770 / °C 62
Consultants on all computers including systems and procedures, data processing on the LGP-30, IBM 650, IBM 702, IBM 709, IBM 1401 / Rca Sa(10) Se(1956) Dlc
Computer Associates, Inc., 44 Winn St., Woburn, Mass. / Woburn 5-2121 / °C 62
Research, development, production, and consulting activities in digital computer programming, including: utility programs and packages, compilers and assemblers, programming and operating systems, command and control systems, information storage and retrieval systems, artificial intelligence, and scientific and commercial applications / RMCpa Sa(15) Se(1961) Ic
Programming services, computer efficiency studies, machine translations / Ca Sa(35) Se(1961) Ic
Special purpose data handling and control systems. Also electronic and electromechanical components, including memory systems and packaged circuitry for computational, control and data handling applications / RMSa Ms(350) Se(1952) Dlc
Computer Engineering Associates, an affiliate of Susquehanna Sciences, Inc., 350 N. Halstead St., Pasadena, Calif. / Elgin 5-7121 / °C 62
Direct analog computer, specialists in complex structural analysis / RMSa Ms(75) Se(1952) Ac
Computer Equipment Corporation, 11612 W. Olympic Blvd., Los Angeles 64, Calif. / GR 9-4131 / °C 62
Digital data acquisition systems; range instrumentation; time sequencing systems; time-to-digital converters. Computer-formulating systems / RMSa Ms(60) Se(1956) Dlc
Computer Logic Corp., 11600 W. Olympic Blvd., Los Angeles 64, Calif. / / / °C 62
Logic cards and all system accessories. Special digital computer and custom systems. Circuit and system design consulting. Digital relay timer / RMSa Se(15) Se(1961) Dlc
Digital frequency counting, timing, controlling and recording instruments. Motion picture film processing equipment / Msa Ms(140) Me(1949) Dlc
Professional services, including: logical design, mathematical analysis, computer programming, data reduction, computer systems analysis, design and evaluation / C(programming; systems design & analysis) Sa(8) Se(1960) Dlc
Complete computing services; small to large-scale computers available. Data processing (both commercial and scientific). Consulting; including analysis, programming, training, machine processing, feasibility studies, systems programming / RCPa Sa(42) Se(1959) Dlc
Computer Services, Inc., 270 Park Ave., New York 17, N.Y. / WI 7-0583 / °C 60
Digital design and development; systems analysis; programming; computer installation and operation; service bureau operation on two general purpose electronic computers, one high-speed printer and miscellaneous IBM equipment / RCPa Ms(30) Se(1958) Dlc
Computer Systems Consultants, P.O. Box 3352, Kansas City, Mo. / / / °C 62
Consulting services; systems and programming service for small and medium sized businesses. Assembler, compiler and simulator development / Ca Sa(5) Se(1962) Ic
General purpose analog computers, DFG's, multipliers, servos, plotting boards, and rental of computing services / RMSa Ms(15) Se(1960) Mid Century Instrumatic Corp.) Ic
Analytical and programming services, both scientific and data processing; computer time by the hour / RSCa Ms(140) Se(1955) Ic
Computers and Automation, 815 Washington St., Newtonville 60, Mass. / DEcatur 2-5453 or 2-3928 / °C 62
Magazine dealing with computers and data processors, and their construction, applications, and implications including automation; published monthly by Berkeley Enterprises, Inc. / Msa Ms(10) Se(1951) Ic
Computing Devices of Canada Ltd., P.O. Box 500 (Bay, 15, Bells Corners), Ottawa 4, Ont., Canada / TA 0-2711 / °C 61

Marketing in Canada of the Bendix G-20 and G-15 digital computers and accessories, Benson-Lehner data reduction equipment, glory computer and printers, and those products manufactured by the Systems Division of Epsco, Inc. / RMSca Ls(1000) Me(1911) Dlc

Computor Inc., 122 Calvary St., Waltham, Mass. / TN 9-0080 / °C 62

Computer and instrumentation magnetic tape, Research and development in magnetic recording media / RMSca Ms(52) Se(1960) 1c

Computronics, Inc. -- name changed to CONCOR, Inc., which see

Condenser Products Co., P.O. Box 1046, Brooksville, Fla. / 796-8562 and 796-4411 / °C 62

Capacitors (trademark copyright "Plasticom" and "Glassmike"), power supplies, pulse forming networks / RMSa Ss(36) Le(1910) 1c

Condenser Products Div., New Haven Clock & Watch Co. -- name changed to Condenser Products Co., which see

Consolidated Avionics Corp., 000 Shamie Dr., Westbury, N.Y. / ED 4-0400 / °C 62

Transistorized power supplies, automatic test equipment, digital systems, logic modules / RMSa Ms(150) Se(1955) Dlc

Consolidated Controls Corp., 16 Durant Ave., Bethel, Conn. / Pioneers N.H. / °C 62

Magnetic storage and memory systems, automatic controls, digital automation, magnetic drums, switches, robots, transducers / RMSa Ms(225) Se(1957) DAlcSnc

Consolidated Electrodynamics Corp., 360 Sierra Madre Villa, Pasadena, Calif. / Murray 1-8421 or SYcamore 6-9361 / °C 62

Electronic instruments for measurement, analysis, and control; instrumentation for dynamic testing; amplifiers; automatic control equipment, data processing and data recording equipment, information retrieval devices, input-output devices, regulated power supplies, magnetic tape recorders, magnetic storage systems, tape handlers, connectors, recording papers, transducers / RMSa Ls(3000) Me(1957) Dlc

Consolidated Systems Corp., 1500 S. Shamrock Ave., Monrovia, Calif. / °C 62

A wide range of electronic and electro-mechanical systems for data handling, ground and space support, checkout, industrial control, and analog and flight instrumentation. Also analog to digital conversion and recording systems; printed circuit boards; military cameras, optics and electro-optical systems / RMSca Ls(700) Se(1954) Dlc

Continental Connector Corp., 34-63 56th St., Woodside 77, N.Y. / / °C 62

Complete line of printed circuit, micro-miniature, miniature, center screwlock, power, special designs and crimp-type removable contact plug and socket precision electronic connectors for computer, guided missile, aircraft and communication applications / RMSa Ms(500) Se(1952) 1c

Control Data Corp., 1000 34th Avenue South, Minneap­olis 20, Minn. / 8-9555 / °C 62

Digital computers, systems, and devices; gyros, accelerometers, magnetic amplifiers, guidance and communications systems; converters; data processing equipment; resolvers, synchros, translating equipment; visual output devices; peripheral equipment; source data collectors; magnetic tape units; digital control equipment; control equipment / RMSa Ls(1400) Se(1957) DAc

Control Electronics, Inc. -- name changed to Paradynamics Inc., which see

Control Logic Inc., 11 Mercer Rd., Natick, Mass. / OL 5-1170 / °C 62

Welded circuit modules, real-time and digital control systems / RMSca Ss(20) Se(1961) Dlc

Control Switch Div., Controls Co. of America, 1420 Delmar Bv., Fcstoa, Pa. / LU 3-2100 / °C 62

Switches, lighted panel components, complete electromechanical subassemblies / RMSa Ls(6000) Se(1960) merger) 1c

Control Technology, Inc., 1232 Belmont Ave., Long Beach 4, Calif.; P.O. Box 1163, Atlantic City, N.J. / GE 3-3360 (Calif.) / °C 62

Consulting, research and development studies, analysis, programming, training, systems engineering; on-line computer control, data processing, simulation, scientific computation / RCpa Ss(20) Se(1960) DAc

Convair-Astronautics Electronics Dept., a Div. of General Dynamics -- name changed to General Dynamics/Astronautics a Div. of General Dynamics Corp., which see

Convair, a Div. of General Dynamics Corp., Fort Worth, Tex., P.O. Box 740, Fort Worth 16, Tex. / PE 6-7311 / °C 60

Radar and electronic countermeasures simulators, Flight simulators with/without human factors environment. Analog computing support equipment, including patch board verifiers, electronic multipliers, and diode function generators. Special purpose digital computing systems, including input/output devices, real time coordinate rotation computer (CORDIC), and zing direct analogy passive element computer (DANAC). Three axis flight table, real time and repetitive electronic differential analyzers, active element heat flow analyzer, and IBM 704 with off-line peripheral equipment / RMSca(design)a Ls(700) Me(1942) DAc

Convair Electronics, a Div. of General Dynamics Corp., P.O. Box 1950, San Diego 12, Calif. / Cypress 6-6611 / °C 60

High-speed automatic daa-acquisition and interpretation systems. Special purpose analog computing systems and equipment including photoformers; memories for functions of one and two variables; magnetic-tape memories. Special purpose digital equipment, real time coordinate transformation computers, tape-to-plot systems, format transistors. Analog-computer test equipment. Computing services on IBM 704 and 650 computers / RMSca(design)a Ls(5000) Me(1942) DAc

Convair, Nuclear Research & Development Section, Fort Worth, Tex. / PE 6-7311, Ext. 3577 / °C 61

Data Handling and processing equipment / RMSca Ms(200) Se(1950, department) 1c

Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill. / Dlversey 8-6700 / °C 61

Automatic controls and equipment, data recording cameras and equipment; consulting services and Univac solid state computing services, electrical and information converters; geophysical apparatus; magnetic and tape tape readers and recording heads; relays, stepping switches, magnetic tape recorders; telemetering systems / RMSca Ls(4800) Lo(1897) DAc

Cornell-Dubilier Electronics, Div. of Federal Pacific Electric Co., 50 Paris St., Newark 1, N.J. / Market 4-7500 / °C 62

Capacitors, relays, pulse networks, filters,
converters, semiconductors, delay lines, vibrators, antenna rotors, inverters, test instruments, packaged circuits and systems / RMA Ls(4000) Le(1910) Ic

Corning Electronic Components, Corning Glass Works, 550 High St., Bradford, Pa. / Forest 2-5571 / °C 62
Electronic components, capacitors, printed circuit boards, ultrasonic delay lines, resistors, trimmers, metallized glass components / RMA Ls(6000) Le(1851) I DAc

Creed Co., Ltd. (assoc. of ITT Corp.), Telegraph House, Croydon, Surrey, England / NMunicipal 2424 / °C 62
Wide range of teleprinters and punched tape equipment for communications, data processing, automation. Product range includes 300 characters per second punch -- Model 3000; and 100 characters per second printer -- Model 1000, for computer output recording / RMA Ls(2000) Le(1909) Dic

Cresmont Electronics, a Div. of Crestmont Consolidated Corp., 2201 W. Barbook Blvd., Burbank, Calif. / Victoria 9-6401 / °C 61
Manufacture perforated tape, programmed controllers, paper tape readers, solid state commutator simulators, solid state commutators, solid state commutators, as well as data acquisition systems and supervisory control systems / RMA Sa(6) Se(1960) Ic

Cubic Corporation, San Diego 11, Calif. / BRowning 7-6790 / °C 61
Transistorized playback system; transistorized digital recording system; digital computers, analog to digital converters, data processing and translating equipment / RMA Ms(500) Se(1950) DAc

Cybertronics, Inc., 132 Calvary St., Waltham 54, Mass. / TW 9-0012 / °C 62
Magnetic tape tester, magnetic tape cleaner, digital system for controls, consulting services / RMA Sa(12) Se(1960) ICc

Dataman Associates, 120 Boylston St., Boston 16, Mass. / - / °C 62
Personnel consulting / Ca Sa(0) Se(1959) Ic

Datamation Inc., 1500 Tryon Ave., W. Englewood, N.J. / TC 3-1350 / °C 62
Data processing, electronics, service, IBM-1620 computer, IBM 407, 604 / Ca Sa(41) Se(1959) Ic

Datamec Corp., 345 Middlefield Rd., Mountain View, Calif. / - / °C 62
Digital magnetic tape units; low-cost electromechanical computer peripherals including input/output devices / RMA Sa(25) Se(1961) Ic

Datamatics, Inc., 7010 Burnet Ave., Van Nuys, Calif. / TR 3-5370; Los Angeles sales office, DU 8-0431 / °C 61
Source data recorders (off-line) which punch IBM cards for EDP input as a by-product of source transactions / RMA Ms(50) Se(1958) Ic

Data Processing Corp., 311 S. Sharp St., Baltimore 1, Md. / - / °C 62
Data processing, systems analysis and programming assistance for business applications, operations research forecasting. 1410, 7070 available at reasonable hourly rates. / RC(data processing services) a Ms(200) Le(1929) Dic

Data Processing Corporation of America, 375 Park Ave., New York 22, N.Y. / Plaza 3-4260 / °C 61
Management and operation of data processing systems service centers, including programming and electronic computer services / RCP a Sa(1956) Dic

Data Processing Digest, Inc., 1140 S. Robertson Blvd., Los Angeles 35, Calif. / BBadshaw 2-0425 / °C 62
Publishers of "Data Processing Digest" / Sa Sa(5) Se(1954) Ic

Data Processing, Inc., 1334 Main St., Waltham 54, Mass. / Twinbrook 9-2000 / °C 61
Analytical and programming services for digital computer applications / Ca Sa(16) Se(1957) Dac

Datapulse Inc., 509 Hindry Ave., Inglewood 1, Calif. / OlChard 1-7713, Oregon 6-3903 / °C 62
Test instrumentation; pulse generators, data simulators / RMA Sa(30) Se(1961) Ic

Data Sciences, Inc., 230 Middle Neck Rd., Great Neck, N.Y.; Boston office: Hickory Drive, Waltham 54, Mass. / Hanter 7-0220 (N.Y.); Twinbrook 9-2400 (Mass.); / °C 62
Data Processing, information handling, information management training, systems design, programming / Ca Sa(10) Se(1960) Dic

Data-Service, Inc., 230 Main St., Cambridge 42, Mass. / KI 7-5407 / °C 62
Data-processing service for business and industrial needs (programming and production) / RS(service) a Sa(15) Se(1961) Ic


Data Systems Division (formerly PDP Division), American Electronics, Inc., 10 E. 40th St., New York 16, N.Y. / LExington 2-3494 / °C 60
Data collecting systems; Data Integrator for data collecting and integration which combines pre-punched, variable, and measurable information into a tape; Mex-a-Punch, portable card punch for commercial and industrial use / RMA Ms(30) Me(1930) Dic

Data Tech, 230 Main St., Cambridge 42, Mass. / University 8-6018, O127 / °C 61
Digital shaft position encoders, direct-reading and incremental, function generators / RMA Sa(0) Se(1960) Ic

D
Roster of Organizations

Datatrol Corp., 0113A Fenton St., Silver Spring, Md. / Juniper 7-9715 / *C* 62
Digital computer systems; scientific programming; data processing; information retrieval systems; life sciences research / RC(computer systems & programming services)a Ss(40)
Se(1959) Dic

Datex Corp., 1307 S. Myrtle Ave., Monrovia, Calif. / El Litt 9-539 / *C* 62
Analog-to-digital shaft position encoders; automatic controls; complete data recording and control systems, including card readers and printers; input-output devices, pressure scanners / RMSca Ms(250) So(1952) DACc

The Daven Co., Route 10, Livingston, N.J. / WYman 2-4300 / *C* 61
AC summing amplifier networks (RC); AC and DC resistance networks; integrating networks; differentiating networks; phase shifters; voltage ratio standards; plug-in, dotted circuits; computer components; embedded assemblies and components; static power supplies; resistors; stepping switches. Consulting services / RMSca Ls(1149) Le(1930) Aic

Daystrom, Inc., Control Systems Division, 4455 Miramar Rd., La Jolla, Calif. / Cl 4-0421 / *C* 61
Digital computers, analog computers, special-purpose digital systems, fuel safety systems, data reduction, memory systems, MagSense® detectors and alarms, systems engineering and service force. Complete solid state digital process control systems and components; transistorized random access magnetic core memory systems; tape-to-tape converters / RMSa Ms(250) Se(1956) DACc

Special purpose data handling equipment to military specifications / RMa Ls(1500) Se(1951) DACc

Daystrom, Inc., Weston Instruments Div., 614 Frel inghuyse Ave., Newark 14, N.J. / - / *C* 62
Instruments and components; indicating, recording, and controlling instruments; product resolvers, input-output devices, multipliers, relays, and resistors / RNa Ls(over 2000) Le(1889) Ic

Daystrom-Wiancko Engineering Co. — name changed to Wiancko Engineering Co., which see

DeJur-Amsco Corp., Electronics Div., 450-01 Northern Blvd., Long Island City 1, N.Y. / IAvenswood 1-8000 / *C* 62
Precision potentiometers, panel instruments / RMSa Ms(500) Le(1922) Ic

Delco Radio Div., General Motors Corp., 700 E. Firmin St., Kokomo, Ind. / Gladstone 2-0211 / *C* 62
Digital control computers — airborne, ground and special purpose; plug-in, dotted circuits — up to 50 amp; solid-state precision power supplies; silicon rectifiers — up to 125 amp; solid-state industrial control circuits; digital module circuits, buffer memory system, data format converters / RMS(standy programs)a

Delta Data Corp., 3134 Shane Dr., Richmond, Calif. / CA 3-7100 / *C* 61
Consulting services, testing, scoring / Ca Ss(10) Se(1959) Ic

Deltime, Inc., 608 Fayette Ave., Mamaroneck, N.Y. / OW 8-5900 / *C* 61
Delay lines (magnetostriictive) / RNa Ms(65) Se(1956) Ic

Dennison Mfg. Co., Machines Systems Div., 300 Howard St., Framingham, Mass. / Trinity 3-3511 / *C* 62
Print-punch marking machines and print-punch tickets — single or multiple sub-coded basic input media / RMSa Ls(2700, Dennison) Le(1944, Dennison) Ic

Denver Electronic Computing Service, Inc., 1345 Stout St., Denver 4, Colo. / - / *C* 62
Engineering and accounting data processing service / RMC(general accounting)a Ss(15)
Se(1953) Dc

Designers for Industry, Inc., 4241 Fulton Parkway, Cleveland 9, Ohio / SH 9-0700 / *C* 62
Computers and development services — digital computers and data handling including designing and building / RMS(special and prototype)Pa Ms(120) Me(1935) DcMc

Dialight Corp., 60 Stewart Ave., Brooklyn 37, N.Y. / HNynineht 7-7600 / *C* 62
Indicator lights, pilot lights, ultra-miniature indicator lights ("Datallites") for computer and automation fields. Data-Strip and Date-Matrix for computers, etc. Telephone light strips and indicator lights; transistorized indicator lights. Illuminated pushbutton switches. Oil-tight indicator lights for heavy-duty industrial applications / RMSa Ms(250) Me(1937) Ic

Dialtron Corporation, 200 Harrison Pl., Brooklyn 37, N.Y. / HNynineht 7-7600 / *C* 62
Thermal time delay relays / RMSa Ms(230) Me(1938) Ic

Diamonite Products Mfg. Co., McConkey St. Ext., Shreve, Ohio / JO 3-7411 / *C* 62
Computer components of alumina ceramics, high strength, low loss, high density, electrical insulating, vacuum tight, readily metallized. Sizes available, subminiature through abnormal requirements / RMSa Ms(150) Me(1940) Ic

DI/AN Controls, Inc., 944 Dorchester Ave., Boston 25, Mass. / AVenue 8-7700 / *C* 62
Buffer storages, memories, special purpose digital and analog computers, code and format converters, digital computer elements, counters, magnetic and transistor shift registers, and logical elements, transistor circuit packages, plug-in circuits, servo amplifiers, special instrumentation equipment / RMSc Ms(140) Se(1958) DACc

Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / VI 6-4155 / *C* 62
B. C. analog computers — analog computing services. Analog computing services; general purpose analog computers. Design and construction of special purpose computers, simulators, and trainers / RMSCPs Ss(10) Se(1955) Ac

The Diebold Group, Inc., 450 Park Ave., New York 22, N.Y. / - / *C* 62
Full range of integrated services in the fields of modern management and management science. Areas of specialization include automation, automatic data processing, programming, information technology, product and business planning analyses. Subsidiary companies in 13 cities on three continents / RCTraining, publicationa Ms(150) Me(1954) Ic

Digimatics Corp., 2525 E. Franklin Ave., Minneapolis 6, Minn. / FE 3-8711 / *C* 61
Digital transducers, encoders, satellite control computers, digital control systems / RMSa Ms(50) Se(1961) Dic

Digital Development Corp., 7541 Eads Ave., La Jolla, Calif. / GL 9-3303 / *C* 62
Memory drums and systems, and special peripheral equipment, i.e. converters, multiplexers, etc. / RP(product development)a Ss(18) Se(1959) Dic

Digital Equipment Corp., Main St., Maynard, Mass. / TWinoaks 7-6021 / *C* 61

COMPUTERS and AUTOMATION for June, 1962

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Digital computers, special computer systems, memory test systems, digital system modules, digital laboratory modules, digital training modules, digital classroom modules / RNSA Ms(158) Se(1957) DlCc

Digital Service Labs, 23922 Crenshaw Blvd., Torrance, Calif. / Davenport 5-0711 / °C 62

Electronic computers, service test equipment, and paper tape preparation equipment / RNSA Ca Ss(8) Se(1955) Dlac

Digitronics Corp., 1 Albertson Ave., Albertson, L.I., N.Y. / HI 4-1000 / °C 62

Data transmission systems, magnetic-tape paper-tape converters, photoelectric paper tape readers and handlers / Ma Ms(250) Se(1957) DlCc

DITT-MCO, Inc., Electronics Div., 911 Broadway, Kansas City, Mo. / Harrison 1-0011 / °C 62

Automatic circuit analyzers, logic circuit testers and electro-mechanical systems analyzers / RNSA Ms(200) Me(1940) Ic

Dorsett Electronics, Inc., 119 W. Boyd, Norman, Okla. / Jefferson 4-3750 / °C 62

Telemetry components and systems / RNSPa Ms(500) Me(1950) Ic


Rental of excess digital computing machine time on the wide range of business and scientific computers (IBM 7090, 1620, and 1401 computers) / RNSA Ms(400) Se(1959) DlCc


Analog computers, special purpose military and industrial digital and analog systems, digital computers, solid state analog/digital and digital/analog converters, magnetic amplifiers, integrators, automatic control systems, telemetry systems, reading and recording heads. Geophysical instruments, government contracting, heavy manufacturing, consulting services / RNSCGa Ls(761) Me(1945) DlCc

Dresser Products Inc., P.O. Box 2035, Providence 5, R.I. / - / °C 62

Punched tape handling equipment and filing supplies / Ma Ms(7) Se(1951) Ic

Drexel Dynamics Corp., Maple Ave., Horsham, Pa. / WA 7-6200 / °C 61

High-speed printer/plotters, tape to horselotranslators, digital process control systems, digital logic circuit cards / RNSA Ms(215) Se(1956) DlCc

Duke University, Computing Laboratory, Durham, N.C. / 681-0111, Ext. 3695 / °C 62

IBM 7070 used for research and instruction / R(coord) Ms(16) Se(1956) Ic

Arnold J. Dumey, 29 Burberry Lane, Roslyn Heights, N.Y. / Mayfair 1-7239 / °C 62

Consultant, data handling problems / Ca Ss Se(1954) DlCc

Dynacor, Inc., a subsidiary of Sprague Electric Co., 1014 Westmore Ave., Rockville, Md. / - / °C 61

Magnetic cores / Ic

Dynatech Corp., 17 Tudor St., Cambridge 39, Mass. / - / °C 62

Business and engineering research consulting / RNSa Ms(91) Se(1957) DlCc

Eastman Kodak Co., 343 State St., Rochester 4, N.Y. / LDcust 2-6000 / °C 62

Photographic equipment, staple synthetic and organic chemicals and dyestuffs; facsimile equipment (photocopy); recording paper / RNSa Ls(50,000) Le(1950) Ic

Ebasco Services Incorporated, 2 Rector St., New York 6, N.Y. / Digby 4-4400 / °C 62

Engineering and management consultants; consulting services in application of electronic data processing to accounting and business systems; engineering applications; plant automation, feasibility studies, installations / Cpa Ls(1600) Le(1905) DlCc

Edin, a Div. of Epsilon, Inc., 207 Main St., Worcester 8, Mass. / PL 7-0394 / °C 61

Industrial and medical electronic instruments, oscillograph recorders and amplifiers, frequency analyzers, weld analyzers, recording papers / RNSA Ss(45) Me(1935) Ic


Servo motors, motor generators, gear heads, electro-mechanical packages. Time delay relays, thermostats and sensitive D.C. relays / Ma Ms(350) Le(1926) Ic

Edu Corp., 13-10 111th St., College Point 56, N.Y. / Hickory 5-6000 / °C 60

Delay lines / RNSa Ls(500) Le(1925) Ic

EfiCor Inc., (subdivision of General Instrument Corp.), Patterson Place, Roosevelt Field, Garden City, L.I., N.Y. / Pioneer 1-4200 / °C 61

Plastic film capacitors / Ma Ms(50) Se(1952) Ic


Varicon connectors, contacts, tube sockets, card cage / Ma Ms(497) Me(1947) Ic

The Electrad Corp., 11244 Sunset Blvd., Los Angeles 36, Calif. / Brush 7-6590 / °C 62

Data Entry Console, i.e., Datacom / RNSCa Ms(77) Se(1959) Ic

Electralab Printed Electronics Corp., 175 "A" St., Needham Heights 94, Mass. / Hillcrest 4-3912 / °C 61

Printed wiring and printed circuit assemblies; PROTONAKA—a laboratory unit for making printed wiring boards for prototypes / RNSa Ms(250) Se(1952) Ic

Electric Boat Div., General Dynamics, Groton, Conn. / - / °C 62

Computer services / Ma Ms(7) Se(1951) Ic

Electric Specialty Co., 211 South St., Stamford, Conn. / Fireside 8-6203 / °C 60

Digital and analog computer power supply systems / Ma Ms(300) Le(1913) DlCc

Electro Instruments, Inc., 8611 Balboa Ave., San Diego 11, Calif. / KBrowning 7-6590 / °C 62

Digital voltmeters, ohmmeters, ratiometers; analog-to-digital converters; digital-to-analog converters; X-Y recorders; wideband DC amplifiers; data acquisition systems, and other digital instruments / Ma Ms(400) Se(1954) DlCc

Electric International, P.O. Box 391, 2nd St. Extended, Greenwood Acres, Youngstown, Md. / Colonial 3-2661 / °C 61

Program selection and processing consoles (NASA) and installation / RNSa Ms(156) Me(1950) Ic


Digital computers, high speed tape reader, high speed printer, transistorized magnetic core memory up to more than 30,000 words of 27 bits, including sign; time-sharing features; input-output: punched tape and cards, magnetic tape, typewriter / RNSCa Ms(350) Se(1955) Dlac

22
Electro-Mec Instrument Corp., 47-51 33rd St., Long Island City 1, N.Y. / Stillwell 6-3402 / °C 62
DIGITOMETERS (trade name), analog to digital converters; potentiometers (computer type); resistors, wirewound, precision; goniometers (angle measuring fixture for calibration of potentiometers, synchros, etc.) / MSA Ms(130) Se(1950) DAc

Electro-Mechanical Research, Inc., P.O. Box 3041, Sarasota, Fla. / Ringling 6-1140; ASSEP Div., P.O. Box 44, Princeton, N.J., SW 9-1000 / °C 61
Digital decommutators, shaft encoders, all types of telemetry, transducers, industrial telemetering and supervisory control, data handling systems, automatic signaling controls, photomultiplier tubes / RNSa Ls(750) Me(1942) DiCe

Electro-Miniatures Corp., 606 NuYier St., S. Hackensack, N.J. / HUbard 8-770 / °C 62
Slip ring and brush assemblies, commutators, rotary switches / Msa Ms(125) Se(1955) Ic

The Electro-Native Mfg. Co., Inc., S. Park & John St., Willimantic, Conn. / HA 3-4551 / °C 61
Capacitors / Ma Ls(1800) Le(1933) Ic

Analog computers, x-y recorders, magnetic tape data plotting systems. Analog computing centers / RNSa Ls(1100) Me(1945) Ac

Electronic Business Services, 3266 Hunts Point Rd., Bellevue, Wash. / Glencourt 4-5810 / °C 61
Consultants in automation and data processing specializing in the needs of small and moderate size business firms, prototype digital data processor under construction / RNSCPbba Ss(3) Se(1955) DCMc

Electronic Contractors, Inc., 2101 S.E. 6th St., Portland 14, Ore. / BE 4-3515 / °C 61
AC network computers and analyzers, Enns power network computer / Msa Ss(20) Se(1953) Ac

Electronic Counters, Inc., 155 Eileen Way, Syosset, L.I., N.Y. / Wainut 1-5000 / °C 62
Electronic counters, timers, and digital meters, high speed or quick look digital recorders / Msa Ss(25) Se(1960), subsidiary of Potter est. 1942) DiC

Electronic Data Processing Center, Inc., 2221 S.W. 5th Ave., Portland 1, Ore. / Capital 6-6051 / °C 61
Complete electronic data processing services with supporting technical staff / Msa Ls(6) Se(1959) Ic

Electronic Data Service, Inc., 802 Philadelphia Pike, Wilmington, Del. / / / °C 62
80 column punched tabulating service; 1401 IBM system and 7070 IBM. EDP system for lease; punched card and EDP educational program / CPs Ss(2) Se(1960) Ic

Electronic Engineering Company of California, 1601 E. Chestnut Ave., Santa Ana, Calif. / kimberly 7-5501 / °C 62
Electronic research and development in the fields of precision timing equipment, data processing and translating equipment and guided missile test range equipment; card-to-magnetic-tape converters, magnetic-tape-to-card converters; paper tape readers, paper tape programmer, paper tape spooler / RNSa Ma Ss(300) Me(1947) Ic

Electronic Processing Center Inc., 253 N. Broad St., Philadelphia 7, Pa. / / / °C 62
Punch card service center providing conversion of punched paper tape to cards and computer processing service for small businesses, 650 card system, 1401 IBM system (4 tapes, 8K) and usage of a GE 225 A 4 tape system / (service, preparing reports) Sa Ls(30), plus part timers / Se(1950) Ic

Electronics Development Corp., 3743 Cahuenga Blvd., N. Hollywood, Calif. / Triangle 7-3223 / °C 60
RF wideband data/transmission systems / RNSa Se(200) Se(1955) Ic

The Electro Nuclear Systems Corp., 9494 Science Center Drive, Minneapolis 27, Minn. / 533-2771 / °C 62
Automatic control equipment; circuits; digital and special purpose computers; analog-to-digital and digital-to-analog converters; data recording equipment; data reduction equipment; magnetic heads; input/output devices; character and photoelectric readers; scanners; visual output devices / RMa Ms(130) Se(1960) DAcMc

Electrapac, Inc., Industrial Park, Peterborough, N.H. / WA 4-64N / °C 62
Contract manufacturer for the digital computer field / Ma Ms(75) Se(1960) Da

Electroplex, Inc., 120 West 131 St., Los Angeles 61, Calif. / Faculty 1-6212 / °C 62
Plug-in digital circuit modules (welded or soldered); digital systems; high efficiency power supplies, time base generators / RNSa Ss(30) Se(1961) Ic

Electro Products Laboratories, Inc., 4501 N. Ravenswood Ave., Chicago 40, Ill. / Longbeach 1-1907 / °C 62
Consulting firm for design of moderately complex digital computers / RNSa Me(1947) Ac

Elastic sensing transducers, over/under speed controls, electronic tachometers / RNSa Ms(50) Me(1936) DAcMc

Electro Scientific Industries, 7524 S.W. Macadam Ave., Portland 19, Ore. / Ch 6-3351 / °C 61
Analyzer computer for complex algebraic functions / RNSa Ms(125) Me(1947) Ac

Elsig, Inc., 1231 Colorado Ave., Santa Monica, Calif. / Area Code 213 EX 3-3023 / °C 62
Electronic noise generators, computer auxiliary equipment / RNSa Ss(12) Se(1955) Ic

Elgin Micronics Division, Elgin National Watch Co., 366 Bluff City Blvd., Elgin, Ill. / SH 2-5700 / °C 61
Sub-miniature magnetic recorders, analog-to-digital encoders, time code generators and precision subminiature mechanical components / RNSa Ms(500, 3 plants) Se(1950) Ic

Advisory services, programming and computer time hire for all applications other than business. Computing Centre has 6 machines / Ca Ms Le Ic

Electro Industries, Inc., 143 Albany St., Cambridge, 39, Mass. / TRemberidge 6-2020 / °C 62
Addressing machines and data-imprinting systems; addressing stencils / Msa Ls(1000) Le(1900) Ic
APPLICATIONS.

Wilf: MATHEMATICS FOR THE PHYSICAL SCIENCES. A selection of material from seven important mathematical disciplines, designed to show the unity of apparently unrelated material. 1962. Approx. 296 pages. $9.00.

McCracken: A GUIDE TO IBM 1401 PROGRAMMING. Stressing techniques, it includes concepts of data processing, organizing the problem, putting it into suitable language, checking for correct solution, integrating the computer into the business operation. 1962. 199 pages. $5.75.

Coulson (Ed.): PROGRAMMED LEARNING AND COMPUTER BASED INSTRUCTION. An attempt at cross-fertilizing different skill and interest areas, to produce better communications and a more unified attack on educational problems. 1962. Approx. 256 pages. $6.75.


Margulies-Eigen (Eds.): APPLIED PROGRAMMED INSTRUCTION. Virtually everything known about this new technique, to give a basis for decisions in applying it to specific educational and training situations. 1962. 387 pages. $6.95.

Henrici: DISCRETE VARIABLE METHODS IN ORDINARY DIFFERENTIAL EQUATIONS. Careful attention to the details of programming, giving methods now in use at major laboratories and stressing methods applicable to non-linear equations. 1961. 407 pages. $11.50.

Chow-Cassignal: LINEAR SIGNAL-FLOW GRAPHS AND APPLICATIONS. Visualizes a physical system by diagrammatic means, and includes many examples. 1962. 160 pages. $6.95.


Redish: AN INTRODUCTION TO COMPUTATIONAL METHODS. Utilizes elementary methods, striking a balance between ease of computation and ease of understanding. Written for those who use computation only occasionally. 1962. 212 pages. $5.75.

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F

Magnetic core memory systems and memory planes / RMSa Ms(250) Me(1950) Ic

Fae Instrument Corp., 16 Norden Lane, Huntington Station, L. I., N. Y. / AR 1-0300 / °C 62
Magnetic clutches and brakes, mechanical differentials, gear heads and speed reducers, bellows coupling, design servo systems / RMSa special servo systems / Ms(250) Me(1950) Ic

Fairchild Camera and Instrument Corp., Defense Products Div., Robbins Lane, Syosset, L. I., N. Y. / Wells 1-5500 / °C 61
Reconnaissance and mapping systems; data processing and display systems; communication and special radar systems; electronic control and support equipment; ordnance products / RMSa Ms Ls(1500) Lo(1920) Ic

Silicon semiconductor strain-gage pressure transducers, silicon semiconductor strain-gage load cells, computer plastic potentiometers; single and multi-turn wirewound potentiometers, linear and non-linear; metal film trimmers, potentiometric pressure transducers, accelerometers, subminiature rate gyros, guidance control packages, switches, amplifiers, pot-clip-clutch-brake modules / Ma Ms(500) Ms(1945) Ic

Fairchild Graphic Equipment, Div. of Fairchild Camera & Instrument Corp., Fairchild Dr., Plainview, L. I., N. Y. / Wells 8-9600 / °C 61
Tape perforators and operating units for local or distant automatic control of Linotypes and Intertypes / RMSa Ms Ms(250) Me(1940) Ic

Fairchild Semiconductor, 545 Whisman Rd., Mountain View, Calif. / Yorkshire 8-8161 / °C 62
Diffused silicon planar transistors, diffused silicon planar diodes; Micrologic elements; transistor and diode test equipment / RMSa Ls(1900) Se(1957) Ic

Fair, Isaac & Co., Inc., 156 Montgomery St., San Francisco 4, Calif. / °C 61
Consultants in operations research, computing and data processing / RMSa Ms(1950) Ic

Fansteel Metallurgical Corp., North Chicago, Ill. / DExter 6-4900 / °C 60
Tantalum capacitors, silicon rectifiers and selenium rectifiers / RMSa Ls(2000) Le(1907) Ic

Farrand Controls, Inc., 99 Wall St., Valhalla, N. Y. / Rockwell 1-2400 / °C 62
Linear and rotary control equipment / RMSa Ms (less than 500) Se(1956) Ic

Farrington optical scanners - 1D, 1P, and 9SP Series / RMSa Ms(250) Se(1953) Ic

Farrington Electronics Inc., New England Industrial Center, Needham Hgts 94, Mass. / Highlands 4-5000 / °C 60
Optical scanners, addressers, imprints, plastic identification tokens / RMSa Ms(250) Le(1900) Ic

Feedback Controls, Inc., 8 Erie Dr., Notick, Mass. / Olympic 3-3411 / °C 62
Magnetic amplifiers, quadrature rejectors, data repeaters, servo multipliers, servomotor gearheads, analog computers, computer test equipment / RMSa Ms(75) Se(1954) Ic

Fenwal, Inc., 362 Pleasant St., Ashland, Mass. / 975-6111 / °C 62
Temperature controls, fire detection systems, monitoring systems / Ma Ls(700) Me(1935) Ic

General purpose computers (Atlas, Orion, Sirius, Gemin), process control computers (Argus Series), special purpose computers, airline reservation systems, check sorting systems, data processing and digital communication systems, display systems, magnetic drums, magnetostriiction delay lines, fixed memories, matrix display modules, high resolution display tubes / Ma Ls(15,000) Le(1986) Ic

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ontario, Can. / 762-3661 / °C 62
General and special purpose digital computers and systems, including airline reservation, traffic control, process control, data processing and cheque sorting computer systems. Large digital memory systems. Consulting, development and manufacturing services / RMS(a system mng) Ma Ms(div. only - 360) Le(1949) Ic

Ferroxube Corp. of America, 2900 E. Bridge St., Snugertes, N. Y. / Cherry 6-2011 / °C 62
Ferrite cores, inducting pot cores, cup cores, recording heads, and microministure toroids with square hysteresis loop; memory arrays, thermisters, varistors, light-dependent resistors, ceramic permanent magnets, resistors, pulse transformers / Ms Ms(250) Le(1949) Ic

Management consultants specializing in application of scientific techniques to business-type problems. Complete service in appraisals and installation of electronic data processing and control systems / RMSa Ms Se(15) Me(1957) Ic

Flight Research, Inc., P. O. Box 1-F, Richmond 1, Va. / RePublic 7-4163 / °C 60
Photographic data recording equipment; data recording cameras (pulse and cine). Automatic exposure control, intervalometer, clutches, autopilot Omni Coupler / RMSa Ms(35) Me(1946) Ic

Florida State University, Computing Center, Tallahassee, Fla. / - / °C 62
IBM 709 -- 32K -- 8 Takes / Reddual use a Se(15) Se(1950) Ic

Raised floor systems for E.D.P. installations / Ma Ms(500) Me(1935) Ic

FMD, Inc., 142 Nevada Ave., El Segundo, Calif. / EA 2-0072 / °C 62
Advanced electro-optical equipment: automated information storage and retrieval systems; binary code stored adjacent to microfilmed documents; rapid retrieval as screen image, photo print, or 35mm reel/film data processing equipment — digital and analog film code recording, reading and converting equipment, magnetic drum checkout equipment / RMSa Ms Se(1959) Ic

Ford Instrument Co., Div. of Sperry Rand Corp., 31-10 Thomson Ave., Long Island City 1, N. Y. / Stillwell 4-9000 / °C 61
Fire control systems, analog and digital computers, missile guidance systems, servo motors, differential and integrator elements, instruments for shipborne and airborne armament and navigational control, nuclear reactors, computers, systems, drives, and precision components; magnetic amplifiers;
General Computers, thermionic devices / RMSs Ls (3000) Le (1915) DAIcc
The Foxboro Co., 30 Neponset Ave., Foxboro, Mass. / Kingswood 3-8760 / °C 62
On-line control computer, data logger, data accumulator, remote supervisory control system, in-out equipment, process control instrumentation / Ma Ls (2500) Le (1900) Icc
Franklin Electronics Inc., E. 4th St., Bridgeport, Pa. / EBrandon 2-4800 / °C 60
Data reduction systems: digital voltmeters / RMSs Ms (90) Se (1951) Icc
Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / NEptune 8-0700 / °C 62
Broad range of data processing and data collecting systems, including: Flexowriter, automatic writing machine with tape or card input/output; Collectadata 30 System with punched card transmitters, badge transmitters, time recorders, and tape receivers for data collection and attendance recording; CDP Computyper, automatic writing-computing machine with tape or card input/output and interchangeable program panels; Teledata, automatic tape transmitter-receiver which uses existing communication lines; Selectadata, automatic tape reader and data selector used with Flexowriters and Computypers; Code Converter, for tape-to-tape conversion; Add-punch, punched tape adding machine; remotely-controlled input/output devices and printers; special Flexowriters for pre-encoding checks with MICR symbols, for preparing tapes for numerical control of machine tools, for off-line use with electronic computers. Complete line of equipment for reading, punching, verifying, converting, re-generating, and transmitting paper tape, edge-punched cards, or tabulating cards. Also supplies used with data processing equipment. Adding machines, Automatic desk calculators / RMSs Ls (8) Me (1934) DISc

The Gamewell Co., 1238 Chestnut St., Newton Upper Falls 64, Mass. / Bigelow 4-1240 / °C 61
Precision potentiometers and rotary switches / Ma Ms Gs (500) Le (1855) Icc
Gannett Fleming Cordrey and Carpenter, Inc., 600 N. Second St., Harrisburg, Pa. / CEBard 6-0451 / °C 62
Consulting engineering firm with a 1620 IBM Computer and other EDP equipment, doing work for own organization plus operating a service bureau / Ca Ms Gs (500) Le (1915) Computer section in 1955) Ic
GAP Instrument Corp., 17 Delaware Ave., Westbury, L.I., N. Y. / EDgewood 3-0200 / °C 62
Servo gear trains, servo breadboards, step motors / Na Se Gs (90) Se (1954) Icc
H. S. Geelan & Co., Ltd., 481 University Ave., Toronto 2, Ontario, Canada / EDPiro 4-1427 / °C 62
Systems consulting specialists in automatic data processing and operations research / Ca Sa (15) Se (1955) Diic
General Automatics, Inc., 331 Alma St., Palo Alto, Calif. / Davenport 1-8727 / °C 61
Special purpose analog and digital computers, automatic control equipment, automatic charge systems, analog less-than-limit sensors, go/no-go comparators, and timer-comparators / RMSca Sa's (15) Se (1954) DAIcc
General Computers, Inc., 9000 W. Pico Blvd., Los Angeles 35, Calif. / BBrandon 2-6010 / °C 62
Analog computers, card programmed function generators, amplifiers, DC operational amplifiers, chopper amplifiers, self powered operational amplifiers / RMSa Sa's (25) Se (1957) Aic
General Controls Co., 801 Allen Ave., Glendale 1, Calif. / Victoria 9-2181 / °C 61
Automatic controls for product or process. Counters and counting devices, actuators, magnetic valves, Hydromotor®, electrolydraulic valves and actuators, industrial controls and instruments, mercury switches, Kilswitch®, snap-acting switches, time switches (sequence), transformer-relays, contacts, limit controls (temperature) precision potentiometers, turns counters / Ma Ls (3000) Me (1931) Icc
General Data Corp., 1250 N. Parker St., Orange, Calif. / / °C 62
Data processing accessories. Hi-speed A/D converters, low-level operational amplifiers, sample and hold devices, multiplexers / RMSa Sa's (10) Se (1959) Icc
General Dynamics/Astronautics a Div. of General Dynamics Corp., 5001 Kearny Villa Rd., San Diego 11, Calif. / / °C 62
High-speed automatic data acquisition and interpretation systems. Special and general purpose analog computing systems and equipment, including photofinders; memories for functions of one and two variables; magnetic tape memories. Special purpose digital equipment available for use, real time coordinate transformation, tape plot, format translators. Analog computer test equipment, combined analog digital simulations through adder. Computer controlled test machines and programs. Electronic image processing including both input and output data. Data processing and computing services on IBM 7090, 7070, 1401, and 650 computers / RMSca Ls (1800) Me (1957) Icc
General Dynamics/Electronics, F. O. Box 2449, San Diego 12, Calif. / CIpress 6-0331 / °C 62
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 charactron), Taesimile printing systems / RMSa Ls (1950) Se (1955) Diic
General Dynamics/Electronics-Rochester, 1400 N. Goodman St., Rochester 1, N. Y. / / °C 62
Digital computers, process control computers, statistical analog computers, data transmission systems, data logging systems / RMSca Ls (4000) Le (1994) DAic
General Dynamics/Pomona, Calif.1675 W. 5th Ave., Pomona, Calif. No longer in computer field.
General Electric Communication Products, Mountain View Rd., Lynchburg, Va. / Victor 6-7311 / °C 62
Equipment providing the communications link for computer facilities / RMSca Ls Lo Icc
General Electric Co., Schenectady, N. Y.
Computing service: analog; network analyzer AC and DC, differential analyzer; not restricted as to users / RCPa Aic
General Electric Co., Capacitor Dept., John St., Hudson Falls, N.Y. / S10-RH7-3341 / °C 61
Capacitors for electric and electronic applications / Ma Ls (1000 plus) Le (1978) Icc
Information processing systems; computing and consulting services; computer time at Information Processing Centers; full line of peripheral equipment; manufacturing control equipment; data accumulation system; complete product lines; business, industrial, scientific, engineering and financial/ RMSc program research and development) Ls (3000) Se (1956) DAIcc
General Electric Co., Defense Systems Dept., 300 South Geddes St., Syracuse, N. Y. / GC 6-4111, Ext. 6625 /
The Geotechnical Corp., 3401 Shiloh Rd., Garland, Tex. / BR 8-8102 / °C 61
Analog data transmission equipment for radio or telephone circuits, data processing systems, automatic-processing film readers, motorized film viewers. Geophysical and seismological instruments. Low-noise, low-frequency capability / RMSc(filed programs) Ma (350) Me (1936) DAIce
Giannini Controls Corp., 1600 S. Mountain Ave., Duarte, Calif. / - / °C 62
Data acquisition devices, automatic test equipment and controls, potentiometers, synchros and resolvers, tachometers, systems engineering, timing devices, transducers, servomechanisms / RMs Ls (1500) Me
Data processing monthly magazine, Data Processing Annual: data processing handbooks / Se (255) Se (1952) In
Gilmore Industries, Inc., 3355 Richmond Rd., Cleveland 22, 0. / 464-1290 / °C 62
Electronic control and data handling equipment; scanners, analog to digital converters, force instrumentation, transducer instrumentation, card to magnetic tape and paper tape converters, data loggers, automatic controllers and equipment / RMs Ms (80) Se (1953) DAcG
Goodyear Aircraft Corp., 1210 Massillon Rd., Akron 15, Ohio / Republic 3-6361 / °C 60
Large scale digitally controlled analog computers. Special purpose computers. Control and data processing devices using AC or DC analog or digital computing techniques / RMs Le (10,000) Le (1925) DaCe
Gordon Enterprises, 5362 N. Cahuenga Blvd., North Hollywood, Calif. / Poplar 6-3735 / °C 62
Data recording, processing, and reduction equipment: cameras; counters; fire control equipment; geophysical apparatus; punch card machines and readers / RMs Ms (112) Me (1945) In
GPE Controls, Inc., 240 E. Ontario St., Chicago 11, Ill. / Whitehall 4-5700 / °C 62
Components: Electric flow, position, and furnace pressure transmitters; floating indicator and ratio indicator controllers; electronic controllers; electro-hydraulic valve actuators; electric integrators / RMs Ms (200) Me (1931) In
GPL Rm. - General Precision, Inc., Pleasantville, N.Y. / Bögers 9-5000 / °C 62
Integrated data processing systems. Data processors and printers. Airborne computers / RMs Ls (1000) Me (1945) In
GPS Instrument Co., Inc., 180 Needham St., Newton 64, Mass. / DEceatur 2-8110 / °C 62
High-speed, high-accuracy repetitive analog computers, statistical and iterative types; computer center and services rental; computer components, function and noise generators, multiplier/divider, etc. / RMScsa Sa (30) Se (1955) AiE
Guardian Electric Manufacturing Company, 1550 W. Carroll, Chicago 7, Ill. / CBospake 3-1100 / °C 60
Electro-magnetic controls, complete control systems, components for computers; relays, solenoids, switches, stepping relays, hermetically sealed elements, etc. / RMs Ls (1000) Me (1943) DAIce
Gulton Industries, Inc., 212 Durham Ave., Metuchen, N.J. / Liberty 8-2800 / °C 62
Ceramic capacitors; printed circuit boards; regulated power supplies; magnetic and compression amplifiers; analog-to-digital and digital-to-analog converters; digital logic modules; digital encoders; amplitude probability and spectrum analyzers; magnetic tape editors; digital data acquisition systems; transducers; telemetering systems; programming services; systems engineering / RMScsa Ls (1500) Me (1943) DAIce
Hagan Chemicals & Controls, Inc., Rte. 60 & Campbells Run Rd., Pittsburgh 30, Pa. / Walnut 2-3737 / °C 62
Open hearth, blast furnace and soaking pit control systems; magnetic amplifiers and control units; patchboards; combustion controls; electro-pneumatic converters; power positioners; temperature, pressure, flow level scanners / RMS (technical field service) a Ls (300) Le (1918) Ic
Management consultants, personnel and executive recruitment specialists in the fields of Electronic Data Processing, Operations Research, Mathematical Sciences, and Scientific Management / Ca Ss (7) Se (1957) Ic
Hallamore Electronics Div. of the Siegler Corp., 714 N. Brookhurst St., Anaheim, Calif. / Prospect 4-1010 / °C 62
Analog and digital computers / RMSa Ls (1000) Me (1952) DAc
The Hallicrafters Co., 4401 W 5th Ave., Chicago 24, Ill. / °C 62
Data acquisition systems, analog-digital converters / RMS (Engineering) a Ms (300) Pe Dic
Hammer Business Service, Rte. 2, Box 299, Manchester, N.H. / - / °C 61
Consulting, IBM punched card tabulating, Royal McBee-LGP-30 computer / C (processing) a Sa (4) Se (1961) Ic
Digital modules, digital systems, data processors / RMSa Ms (450) Me (1949) DMar
Highly regulated DC power supplies, product development / Ma Ms (60) Se (1954) Ic
Harvey-Wells Electronics, Inc., 14 Huron Drive, Natick, Mass. / CEdar 5-7372 / °C 62
Digital computers, digital systems, instruments, components / RMa Sa (35) Se (1960) Dic
Hatchway Instruments Inc., 5000 E. Jewell Ave., Denver 22, Colo. / 303-683-01 / °C 61
Commutators, rotary stepping switches, audio response plotters, dired switches / RMS Ca Ms (400) Me (1940) Ic
The A. W. Haydon Co., 232 N. Elm St., Waterbury 20, Conn. / PL 6-4498 / °C 62
AC and DC timing motors, custom designed timing devices, elapsed time indicators, electronic timers, time delay relays, intervalometers, repeat cycle timers, stop clocks, subminature timers; automatic controls, tachometers. Stepping and coding devices / RMSa Ms (500) Me (1945) Ic
Edward Bernard Healy, Jr., Management Consultant, 74th St., Brooklyn, N.Y. / Shore Road 5-7027 / °C 61
Management counsel in systems analysis; equipment evaluation; organization and facilities planning; personnel recruitment, testing, selection and training; installation programs for electronic computer and other automatic data processing systems in business, industry, and government / CGPa Sa (1) Se (1959) Dc
Analog computers and components in easy to build kit form / RMSa Ls (675) Me (1946) Ic
Hermes Electronics Co., 75 Cambridge Parkway, Cambridge 42, Mass. / University 4-7200 / °C 61
Digital timing and magnetic tape search units, precision oscillators, language translators and film readers / RMa Ms (240) Se (1955) Ic
Electronic test equipment, oscilloscopes, AC and DC VTVM'S, oscillators, electronic counters, digital-to-analog converters, digital recorders, frequency and time standards, etc. / Msa Ls (3000) Me (1939) Dic
Hillburn Electric Corp., 55 Greenpoint Ave., Brooklyn, N.Y. / - / °C 62
Stepping switches / Ma Sa (35) Me (1945) Ic
S. Himmelstein & Co., 3300 W. Peterson Ave., Chicago 45, Ill. / IRing 8-4980 / °C 62
Consulting and design engineering services associated with magnetic storage and peripheral devices / Rca Sa (4) Se (1960) Dic
Hoffman Electronics Corp., Semiconductor Div., 1001 N. Arden Dr., El Monte, Calif. / CU 3-7191 / °C 61
Silicon diodes, silicon transistors, silicon photovoltaic "readout" cells and capsules / RMSa Ls (1000) Se (1953) Ic
Hogan Faximile Corp., a subsidiary of TELautograph Corp., 655 Greenwich St., New York 14, N.Y. / Chelsea 2-7655 / °C 62
High-speed printers and plotters, facsimile equipment, recording papers, communications systems, information retrieval devices, scanners, addressing machines, data processing machinery, data recording equipment, input-output devices, data reduction equipment, visual output devices / RMa Ms (85) Le (1928) Ic
Hollander Associates, P. O. Box 2270, Fullerton, Calif. / Trojan 1-4918 / °C 62
Design and consulting in general and special purpose computers and their application to business, control, communications switching, and defense; including technical liaison overseas / Rca Sa (5) Se (1961) Dasc
G. L. Hollander Associates — name changed to Hollander Associates, which see
Honeymoon Electronic Data Processing Div., 60 Walnut St., Wellesley Hills 81, Mass. / CEdar 5-7450 / °C 61
Electronic data processing systems. Sales, rental service bureau / RMSa Ls (3000) Se (1955) Dic
The Hoover Company Electronics Div., P. O. Box 101, Baltimore 3, Md. / Clearbrook 2-4000 / °C 62
Special digital data processing systems, tele-metering systems and components / RMa Ms (100) Se (1952) Dic
Houston Instrument Corp., P. O. Box 22234, Houston 27, Tex. / - / °C 62
Electronic instruments / Ma Sa (45) Se (1959) Ic
Data processing systems — sales and service; SEMA and SIM Systems: digital electronic memory systems for punched cards, paper tape and direct input/output; high speed punched paper tape reader; auxiliary plugboard wiring devices / RMS (data processing services) a Ls (900) Me (1947) Dic
Hughes-Fullerton, 1401 Malvern Ave., Fullerton, Calif. / Trojan 1-2522 / °C 62
Radar tracking equipment, programmable computers, special purpose computers / RMa Ls (7000) Le (1935) Ic
Hughes Semiconductor Div., 500 Superior Ave., Newport Beach, Calif. / LI 8-0671 or MA 9-2571 / °C 62
Silicon and germanium diodes, microminiature diodes and transistors, silicon transistors.
silicon power rectifiers, packaged assemblies, micro welder components, voltage regulator diodes / Mn Ls (1000) Me (1951) Ic
Hydro Molding Company, Inc., 100 Sharron Ave., Plattsburgh, N.Y. / Jordan 1-5320 / °C 62
Precision molded plastic components / Ma Ms (125) Se (1950) Ic
Hydropoise Inc., 230 S. Wells Fargo Ave., Scottsdale, Ariz. / °C 62
Turbine type flow meters and associated readout and control equipment / RMSa Ss (10) °C Ic

The J.B.R. Co. (Industrial Data Reduction), 4740 Spruce St., Philadelphia 39, Pa. / Granite 2-5023 / °C 62
Full line data processing with specialty of publishing industry services / Cc ?s Se (1961) Dic
Image Instruments, Inc., 2300 Washington St., Newton Lower Falls 62, Mass. / Wo 9-0440 / °C 62
Recording storage tube systems, scan converters, computer data display storage / RMSa Ss (25) Se (1958) Ic
IMC Magnetics Corp., Arizona Div., 917 W. Madison, Phoenix, Ariz. / Alpino 4-7294 / °C 60
Hydraulic and pneumatic valve, pressure switches, pressure regulators, filters, accumulators / RMSa Ss (30) Se (1956) Ic
IMC Magnetics Corp., Eastern Div., 570 Main St., Westbury, L.I., N.Y. / Edgewood 4-7070 / °C 61
Blowers and fans, hysteresis synchronous motors, torque motors, servos, induction motors, and fans used for cooling electronic equipment; motors used as tape drives and in closed loop servo systems / Ma Ms (200) Se (1951) Ic
IMC Magnetics Corp., Gray & Kuhn Div., 80 Swalm St., Westbury, L.I., N.Y. / Edgewood 2-2194 / °C 60
Delay lines, filters, toroids / RMSa Ms (60) Se (1956) Ic
IMC Magnetics Corp., Western Div., 6050 Walker Ave., Maywood, Calif. / LUDlow 3-1705 / °C 62
Linear and rotary solenoids, step-servo motors, synchros, resolvers, digital to shaft angle converters / Ma Ms (150) Me (1946) Ic
Imm Industries, 12160 Victory Blvd., No. Hollywood, Calif. / Triangle 7-0394 / °C 62
Digital computers, special-purpose analog computers, digital and analog servomechanisms, stepper motors, solid-state switching circuits, logic drives, pulse generators, voltage-to-pulse converters / RMSa Ms (65) Se (1961) DAISe
Intra Corp., 11 University Rd., Cambridge 20, Mass. / University 4-4350 / °C 61
Magnetic storage drums, importer; tape, punches and readers / Ba Ss (2) Se (1952) Ic
Ferramic memory cores, memory planes, arrays, microtacks, memory systems, buffers, large memory systems / RMSa Ls (550) Le (1900) Ic
Indiana General Corp., Magnet Div., 405 Elm St., Valparaiso, Ind. / Howard 2-3131 / °C 62
Permanent magnets / RMSa Ls (750) Le (1900) Ic
Indiana Steel Products, Div. of Indiana General Corp. — name changed to Indiana General Corp., Magnet Div., which see
Industrial Development Engineering Associates, Inc. (I.D.E.A., Inc.) — name changed to Regency Electronics, Inc., which see
Industrial Magnetics Corp., 650 Ackerman Rd., Columbus 2, Ohio / Amherst 7-6531 / °C 62
AccuRay industrial process measurement and automatic control systems, data reduction and readout systems for paper, plastics, metal and other industries / RMSa Ms (500) Se (1950) Clic
Industrial Products-Danbury Knudsen Div., Amphenol-Borg Electronics Corp., 33 E. Franklin, Danbury, Conn. / Pioneer 3-9272 / °C 60
RF and R P connectors; switches / RMs Ms (450) Le (1919) as Danbury Knudsen) Ic
Industro Transformer Corporation, 35-10 36th Ave., Long Island City 6, N.Y. / Exeter 2-8000 / °C 60
Industro Transformer Value Automatic Computer (ITVAC), a digital computer for testing transistors; also manufacturers computer transistors / RMSa Ms (125) Se (1957) Dic
Informanics, Inc., P. O. Box 5569, Sherman Oaks, Calif. / °C 62
Complete systems and programming services / Ca Ss Se (1962) Ic
Information Products Corp., 156 Sixth St., Cambridge, Mass. / Eliot 4-1206 / °C 62
Random access file interrogators, computer input and display equipment, data editing equipment, symbol generators, coding keyboards / Ma Ss (27) Se (1961) Ic
Information Systems, Inc., 7350 North Ridgeway Ave., Skokie, Ill. / Orchard 5-2500 / °C 61
General purpose digital computer and industrial information systems / RMSa Ms (400) Se (1959) Dic
Information Systems, Inc., Computer Div., 10131 National Blvd., Los Angeles 34, Calif. / Upton 0-4671 or Vermont 7-5333 / °C 61
Digital computer systems, disc and drum memories, punched card and punched tape readers, digital indicators / RMSa Ms (150) Se (1956) Dic
Ingenjörsfirma Nordisk ADB, Pyramids, 90, Solnal, Sweden (subsidiary companies: Nordisk ADB Deutsche Gmbh, Düsseldorf/Holthausen- Bonner Strasse 117, Germany; Nordisk ADB, Weener and Co., Ramistrasse 8, Zürich 1, Switzerland; Iberica ADB, Torre de Madrid, Spain) / 820270 / °C 62
Consulting engineers in civil engineering and data processing, specializing in road planning and construction, and structural calculations / RCA Ss (25) Se (1959) Ic
The Institute of Management Sciences, P. O. Box 273, Pleasantville, N.Y. / °C 62
Non-profit scientific society, publishers of quarterly journal "Management Science" / Se (1954) Ic
Institute for Scientific Information, Inc., 33 So. 17th St., Philadelphia 3, Pa. / LO 4-4400 / °C 62
Consulting, research, publications, facsimile data handling, information engineering; publishers of current contents of space, electronic and physical sciences / RC (publishing) / Ms (75) Se (1955) Ic
Instrument Control Co., 2309 Snelling, Minneapolis 4, Minn. / PA 1-5335 / °C 61
Spot welder control systems / RMSa Ss (40) Me (1945) Ic
Instrument Development Laboratories, Inc., 67 Mechanic St., Attleboro, Mass. / Castle 2-3880 / °C 61
A-D converters, rotary switches, pyrometers, colorimeters. Research, development, production of precision components to customer order / RMSa Ms (200) Me (1947) Dic
Instrument Society of America, Penn-Sheraton Hotel, 530 Wm. Penn Place, Pittsburgh 19, Pa. / Atlantic 1-3171 / °C 62
Professional, technical society serving the field of instrumentation, data handling, computation, and automatic control systems. Publishes "ISA Journal" / PCA Ss (42) Me (1946) Ic

ROSTER OF ORGANIZATIONS
Roster of Organizations

Intercontinental Dynamics Corp., 170 Coolidge Ave., Englewood, N.J. / Lowell 7-3600 / °C 62
Random noise generators / RMSa Ss(45) Se(1956) Ic


Complete line of data processing systems and equipment, including the IBM RAMAC 305 (Model 2), 1401, 1410, 1620, 7040, 7044, 7070, 7072, 7074, 7000, 7090 and 7094 data processing systems; 1710 control system; magnetic character sensing equipment; optical character readers; Teleprocessing systems including data collection and transmission equipment; and a full line of punched card equipment including the low-cost Series 50. Also punched cards, magnetic tape, magnetically encoded paper checks, and other supplies used in conjunction with data processing systems / RMSa LS(116,000) Le(1914) D1Cc

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 / RMSGC (systems) / RMSa LS(12,000) Le(1955) DAC

International Computers and Tabulators, Ltd., Gloucester House, 149 Park Lane, London W1, England / HFde Park 8080 / °C 61
Punched card equipment and electronic digital computers, card to paper tape converters, paper tape to card converters, data processing and recording equipment, magnetic drums, input-output devices, memory systems, office machines, line-a-time and high speed printers, magnetic card paper tape and punch card readers, magnetic tape filing systems, readers, and recorders, paper tape / RMSca LS (20,000) Le(1908) D1Sc

International Diode Corp., 90 Forrest St., Jersey City 4, N.J. / HE 2-6242 / °C 61
Germanium crystal computer diodes with high switching speeds / RMSa Ss(15) Se(1959) Ic

Total systems management including: systems research, systems engineering, programming, systems simulation, field engineering, weapons interface, logistics research and development / RC (electronic systems management) / RMSa LS(1000) Se(1958) Ic

International Rectifier Corp., 233 Kansas St., El Segundo, Calif. / Ogden 0-6501 / °C 62
Complete line of general purpose silicon diodes, zener voltage regulator diodes, silicon controlled rectifiers, silicon readoutphotocells / RMSa LS (950) Me(1947) Ic

International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa. / Walnut 2-8900 / °C 62
Resistors (composition, film, power and precision wire wound and special application); potentiometers, flexible etched circuits; multiconductor flat wire cable; displacement transducers; low pressure cell; rectifiers / RMSa LS(2500) Le(1927) Ic

International Tel. & Tel. Corp., Industrial Products Div., 15191 Bledsoe St., San Fernando, Calif. / EMpire 7-6161 / °C 60
Large screen oscilloscopes, monitors, and storage tube oscilloscopes for readout / RMSa Ms(300 - div.) Se(1955 — div.) Ic

Invar Corporation, 26 Fox Rd., Waltham 54, Mass. / °C 62
Peripheral input/output equipment, punched paper tape equipment / RMSa Ms(56) Se(1959) Ic

Data translators, tape search units, digital clocks for precision timing, crystal filters / RMSa Ms(250) Se(1955) Ic

The ITT Data Processing Center, Rte. 17 and Garden State Parkway, Paramus, N.J. / Colfax 2-0700 / °C 62
A complete range of services from computer time to systems analysis design and programming are available through our IBM 7090, 1401 and supporting equipment and our 200 programmers and analysts who have a wide diversity of backgrounds on a wide variety of computers. Direct communications data links between customer's office and our facility. Equipment is available on an hourly or repetitive basis / RC (data processing services) / RMSa Ms(250) Se(1961) Ic

ITT Federal Div., International Tel. & Tel. Corp., 100 Kingsland Rd., Clifton, N.J. / Northe 7-3600 / °C 60
Radar, Elm, and sonar simulators, missile, aircraft, guidance, radar and weapon system automatic checkout equipment / RMSa LS(4000) Le(1920) Ic

ITT Federal Laboratories, a Div. of International Tel. and Tel. Corp., 500 Washington Ave., Nutley 10, N.J. / Northe 1-1100 / °C 62
ITT 029 data processor / RMSa LS(6000) Le(1920) Dc

ITT Information Systems Div., 320 Park Ave., New York 22, N.Y. / °C 62
Telegraph and data switching system — ITT 7300 ADX System / RMSa Ms(250) Se(1961) DAC

ITT Kellogg (formerly Kellogg Switchboard & Supply Co.), 6650 So. Cicero Ave., Chicago 38, Ill. / Portsmouth 7-6900 / °C 60
Complete switching systems for industrial applications. Wire transmission equipment, telephone switching equipment, digital computing equipment, radio multiplexing equipment / RMSca LS(3500) Le(1977) D1c

Constant voltage and low voltage control transformers / RMSa Ms(600) Le(1950) Ic

Johnson Electronics Inc., Highway 17-92, Orlando 22, Fla. / Terrace 0-2111 / °C 61
Toroids, miniaturized transformers, magamps, embedded assemblies and components, cable assemblies, amplifiers, coils, electrical converters, power supplies, electric magnets / RMSa Ms(100) Se(1951) Ic

Jonker Business Machines, Inc., 26 N. Summit Ave., Gaithersburg, Md. / Windsor 8-9203 / °C 62
Terastrex and Minimatrex information and data retrieval equipment and information services, including consulting, indexing and abstracting / RMSca Ss(35) Se(1960) Ic

Kalvar Corp., 909 So. Broad St., New Orleans, La. / 622-1600 / °C 61
Film for input services / RMSa Ss(45) Se(1956) Ic

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COMPUTERS and AUTOMATION for June, 1962
Roster of Organizations

Kay Electric Co., Maple Ave., Pine Brook, N. J. / Capital 6-4000 / °C 62
Electronic test instruments / Ma Ms(120) Me(1947) 1c

KCS Ltd., 20 Spadina Rd., Toronto 4, Ont., Canada / 924-5301 / °C 62
Management and technical consultants: electronic computing data processing, operations research, economic surveys, statistical analyses, feasibility studies. Services: high-speed computing, data processing, tabulating / Rca Ms(65) Se(1954) 1c

Keaufott Co., Inc., Clifton, N. J. / GRegory 2-1000 / °C
Analog-digital converter; digital-analog converter; servo motors, synchros, resolvers, integrating tachometer generators; analog and digital computers / Rmsa Ls(5000) Le(1916) Daisc 1c

A. T. Kearney & Co., 135 So. LaSalle St., Chicago 3, Ill. / State 2-2668 / °C 61
Management consultants, technical service in applications of all brands of equipment in data processing field to industry, transportation, government and commerce / Ca Ms(100, plus) Me(1935) Daisc 1c

Kelvin Electric Co., 5909 Noble Ave., Van Nuys, Calif. / / °C 62

Precision wire wound resistors and resistor networks / Ma Ms(140) So(1957) 1c

Kepco, Inc., 131-30 Sanford Ave., Flushing 52, N. Y. / IN 1-7000 / °C 62
Manufacturers of dc regulated power supplies / Rmsa Ms(150) Me(1946) 1c

Ketay Dept., Norden Div., United Aircraft Corp., Jericho Turnpike, Commack, N. Y. / Forest 8-5500 / °C 61
Synchros, resolvers, gyroscopes, servo motors, amplifiers, tachometers, potentiometers, magnetic shaft angle encoders / Rmsa Ms(5000) Me(1944) 1c

Automatic fire detection systems; engineered proprietary alarm systems console; ultrasonic phototectic, and capacitance burglar alarm systems; temperature monitoring systems / Rmsca Ls Le(1971) 1c

Walter Kidde & Co., Inc., Kidelsey Electronics Laboratories, 441 Main St., Belleville 9, N. J. / Plymouth 9-5000 / °C 62
Static relays, varistors, static inverters, static converters, and solid state power supplies / RMSca Ls(1917) 1c

Walter Kidde & Co., Inc., Industrial & Marine Div., 441 Main St., Belleville 9, N. J. / Plymouth 9-5000 / °C 62
Fire detecting and extinguishing equipment / RMSca Ls Le(1971) 1c

A. Kimball Co., 8 Rewe St., Brooklyn 11, N. Y. / Stagg 2-2701 / °C 62
Data coded tag producer; converter of binary to decimal, Kimball PM75 print-punch machine; KRM reader, reads tags, converting into punched cards / RMSca Ls(560) Le(1876) 1c

The Walter S. Kraus Co., 48-02 43 St., Woodside 77, N. Y. / Stillwell 4-5922 / °C 62
Electronic controls for exact control / Rmas Ss(17) Me(1941) 1c

Laboratory for Electronics, Inc. — see LFE Electronics Laboratory for Electronics, Inc., Monterey Laboratory, 305 Webster St., Monterey, Calif. / / °C 62
Computer programming for scientific, engineering, and data handling applications. Military and industrial operations research. Systems analysis, mathematical modeling, simulation, conceptual design of large-scale systems / Rca Se(1940) Me(1945)

Land-Air, Inc., Stepper Motors Division, 16226 S. Broadway, Gardena, Calif. / Faculty 1-581 / °C 61
Relays -- telephone, power and dry-reed. Stepping motors / Rmas Ms(150) Me(1949) 1c

Computer service using Electronics Associates' 1601 analog computer and Bendix G-15 digital computer / RMSca Ls(2500) Me(1946) DAC

Landis & Gyrc, Inc., 45 West 45th St., New York 36, N. Y. / Judson 6-4644 / °C 61
Impulse counters, single decade impulse counters, add-subtract and totallizing counters, printing counters / Rmas Le(over 10,000 in this and associated companies — 17 this office) Le(1927) 1c

Analog and digital computers for industrial processes applications; also data loggers for industrial use / RMSca Ls(3000) Le(1900) DAC

LFE Electronics, A Div. of Laboratory for Electronics, Inc., 955 Commonwealth Ave., Boston 15, Mass. / Algonquin 4-4233 / °C 62
HD (high density) file drums; flexible rotating storage disks (Bernoulli Disks); display devices; random access & storage systems; computer programming; operations research; systems analysis; read/write heads; memory systems. Advanced research in special devices and applied research for the computer field; data recording equipment; data reduction equipment; magnetic disks, magnetic drums; magnetic storage systems; logical circuits; plug-in circuits; delay lines / RMSca Ls(2500) Me(1946) DAC

Librascope Div., General Precision, Inc., 908 Western Ave., Glendale 1, Calif. / Citrus 4-6041 / °C 62
Data processors and computers for air traffic control, business, industrial control, spacecraft guidance, antimissile warfare, aircraft navigation and scient;ific, research and electronic test equipment; explosive ordnance devices / RMSa Ls(4000) Me(1937) DAC

Link Division, General Precision, Inc., Binghamton, N. Y. / RA 3-9311 / °C 62
Special purpose analog, digital and hybrid computers; process control and flight simulators; photogrammetric systems; pattern and character recognition systems / RMSa Ls(2500) Le(1929) DAC

Edwin A. Lipps Engineering, 1511 Colorado Ave., Santa Monica, Calif. / EBbrook 3-0440 / °C 62
Micro-magnetic instruments; magnetic tape recording and reading heads; consulting services; memory systems; magnetic tape readers / RMSca Ms(150) Me(1940) 1c

Liskey Aluminum, Inc., Box 506, Glen Burnie, Md. / Circle 2-7300 / °C 61
Computer-room free-access flooring / RMSca Ms(100) So(1950) 1c

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Litte1fuse, Inc., 1865 Miner St., Des Plaines, Ill. / Vanderbuilt 4-1180 / °C 62
Fuses, fuse posts, fuse mountings, and other circuit protective devices / Ma Ma (500) Le (1927) Ic

Litton Systems Inc., Data Systems Div., 6700 Eton Ave., Canoga Park, Calif. / DI 6-4040 / °C 61
Command and control systems; display consoles and displays / RMSa Le (2200) Se (1953) Ic

Inertial navigation systems, digital differential analyzers, airborne data processing systems, airborne computers, flight control systems, analog-digital convertors, accelerometers. Precision potentiometers, resistors / RMSa Le (19,700 all divisions) Se (1953) DAIC

Special and general purpose digital computer systems; inertial and celestial navigation equipment; ground support equipment; shaft encoders; accelerometers; gyroscopes; alpha/numeric readouts; module testers; and magnetic drum fill and clock track recorders / RMSa Le (7500) Se (1953) Dlc

Lloyd Industries, 40 Grove St., So. Hackensack, N.J. / HOBbard 8-7770 / °C 62
Ultra-precise code discs / Ma Se (10) Se (1959) Ic

Lockheed Electronics Co., U.S. Highway 22, Plainfield, N.J. / PL 7-1600 / °C 62
Military and industrial electronic systems and components / RMSCa Le (20,000) Me (1945) DaC

Lockheed Electronics Co., Avionics and Industrial Products Div., 6201 E. Randolph St., Los Angeles 44, Calif. / OV 5-7070 / °C 62
Electronic ceramics consisting of ferrites, ferrite cores, memory planes, logic module assemblies, multi-aperture devices, recording heads, and memory units / RMSa Le (600) Se (1959) Ic

Lockheed Electronics Co., Information Technology Div., U.S. Highway No. 1, Metuchen, N.J. / Liberty 9-4340 / °C 60
Special purpose computers, data processing systems, data storage, data display, data reduction and digital timing devices / RMSa (application engng, installation) Ms (200) Me (1945) DAc

Logabax S. A., 146, Champs Elysees, Paris 7, France / Elysee 61-04 / °C 60
190 and 207 type automatic accounting machines; several hundred headings analyzing equipment "TELEBAX." Automatic connection with punch card or computing machines / RMSa Le (700) Se (1949) Dc

Loral Electronics Corp., 625 Bronx River Ave., New York 72, N.Y. / TI 2-5500 / °C 62
Special purpose digital and analog computers / RMSCa Le (2100) Me (1946) DaC

Loyola Laboratories, P.O. Box 90074, Airport Station (6415 W. 89th St.), Los Angeles 45, Calif. / OR 8-1680 / °C 61
Consulting. Sampling integrator (VANNUS) built on request / RMSa Le (33) Se (1956) Ic

Lumen, Div. of Tolex, Joliet, Ill. / - / °C 61
Magnetic amplifiers / MSA ?s Pe Ic

Mace Corp., 900 N.E. 13th St., Ft. Lauderdale, Fla. / - / °C 62
Magnetic amplifiers, servo-amplifiers, magnetic computer readout devices, power magamps, frequency detectors, magnetic relays, magnetic focusing devices, electro-mechanical assemblies / RMSCa Le (40) Se (1946) Ic

Machine Computing Services, 138 S. Second East, Salt Lake City 11, Utah / Davis 8-9446 / °C 62
Broker of idle computer and punched card equipment time / SACa Se (60) Se (1960) Dic

F. R. MacLaren & Co., Inc., 15 W. Harper Place, Huntington Station, L.I., N.Y. / HA 3-4423 / °C 62
Analog computers, servo systems, servo amplifiers / Ma Se (10) Me (1950) Alc

The Magnavox Company, 2131 Dueter Rd., Fort Wayne, Indiana / E-9721 / °C 60
Analog-to-digital convertors; analog and digital computers; data processing equipment; magnetic drums; magnetic and film data processing systems / RMSa Le (5000) Le (1947) Alc

Magnetic memory drums, read/write circuitry, magnetic drum and tape heads / RMSa Ms (165) Se (1956) Ic

Magnetic Research Corp., 3160 W. El Segundo Blvd., Hawthorne, Calif. / Osborne 5-1171 / °C 62
Components / Ma Ms (100) Se (1952) Ic

Magnetics Inc., Butler, Pa. / Ewler 7-1745 / °C 62
Design, manufacture and sell (through company sales force and reps) high permeability bobbin cores, ceramic and stainless steel, for computer shift registers and buffers. Other products: tape wounded cores, peramallow powder cores, nickel laminations / RMSa Ms (385) Me (1949) Ic

P. R. Mallory & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind. / ME 4-0674 / °C 62
Computer grade capacitors, silicon rectifiers, contacts / RMSa Le (6000) Le (1916) Ic

An integrated data processing company specializing in the leasing of used IBM business machines. Also offer systems engineering and data processing consulting services. Data Centers are maintained in New York City and Chicago. WROC special purpose devices are used to expand the capacity of IBM tabulating machines / RSCPa Ms (70) Se (1955) Ic

Management and Business Automation — name changed to Business Automation, which see

Management Science Training Institute, 430 Park Ave., New York 22, N.Y. / - / °C 62
Training courses in specialized areas of management science such as information retrieval, data communication, programming, programmed learning and teaching machines, marketing, managing an ADP Center, etc. Conducted by senior members of the professional staff of The Diebold Group, Inc. / Pa ?s Pe Ic

Marchant Division of Smith-Corona Marchant, Inc., 6701 San Pablo Ave., Oakland 8, Calif. / Olympic 2-6500 / °C 60
Automatic electric calculators (desk type) / RMSa Le (9000) Le (1947) Ic

Markite Corp., 155 Waverly Place, New York 14, N.Y. / IBM 5-1394 / °C 62
Precision potentiometers; conductive plastic type. Rotary and rectilinear configuration; both functional and linear output, for computers and servo controls; conductive plastic type precision rotary switches / RMSa Ms (325) Me (1946) Ic

Mathematischer Beratung und Programmierungsdienst GmbH., Dortmud, Kleppinustr. 26, Germany / 2 63 53 / °C 61
Roster of Organizations

Consulting for all problems of data processing

with punch card machines or electronic computers;
problem analysis and problem solving on electronic
computers; organization of flow of data program-
ming; operations research / RCPa Ss(35) Se(1957)
DA1c

Ft. Washington, Pa. / *-/- / *' 62

Special project management services, specializing in
planning and scheduling techniques / Mca Ms(50) Se(1959) DA1c

Maurey Instrument Corp., 7917 S. Exchange Ave., Chicago
17, Ill. / REgent 1-1717 / *' 61

Potentiometers: precision, single-turn, wirewound,
linear, non-linear / RMcAs Ms(60) Se(1953) IC

Maxon Electronics Corp., 475 Tenth Ave., New York 18,
N. Y. / Longacre 5-1900 / *' 62

Design, research, development, electronic, electro-
mechanical systems and equipment for aviation, mis-
is* and space applications. Amplifiers, auto-
matic control equipment, plotting boards, computers,
fire control equipment, regulated power supplies,
telemetering, antennas, communication, test equip-
ment / RMa Ls(647) Me(1935) DA1c

H. B. Maynard & Co., Inc., 714 Wallave Ave., Pitts-
burg 21, Pa. / Fremont 1-9600 / *' 62

Feasibility studies, cost reduction programs to
insure most effective use of equipment and staff /
Ca Ms(100) Me(1934) 1c

McDonnell Aircraft — see McDonnell Automation Center,
Div. McDonnell Aircraft Corp., Special Systems Div.)

McDonnell Automation Center, Div. McDonnell Aircraft
Corp., Box 516, St. Louis 66, Mo. / Pershing 1-2121 / *' 62

Consulting, systems design and programming services
for the businessman or scientist. Data processing
and computing services in both analog and digital
areas, utilizing PACE and CECAC. Analog computers,
IBM 1620, 305, 7080, 1401, 7090 and conventional
unit record equipment / RMcAs Ms(420) Se(1960)
DA1c

Memorex Corp., 1100 Shulman Ave., Santa Clara, Calif. / 
Cherry 8-3344 / *' 62

Magnetic tape / RMcAs Ms(50) Se(1961) 1c

Mesa Scientific Corp., 12830 Weber Way, Hawthorne,
Calif. / OR 6-5401 / *' 62

Consulting in systems engineering, logic design,
and circuit design related to computers, automatic
test equipment, guidance and control systems.
Mathematical analysis, computer programming and
development of programming systems. Consultants to
industry and government on data processing, missiles,
satellites, and ground support equipment / Ca Ss(25)
Se(1957) IC

Micro Switch, 11 W. Spring St., Freeport, Ill. / Adams
2-1122 / *' 62

Precision snap-action switches and mercury switch-
es / Msa Ms(100) Me(1951) 1c

Micro Switch, a div. of Minneapolis-Honeywell Regulator
Co., 11 W. Spring St., Freeport, Ill. / Adams 2-1122 / *' 62

Precision snap-action switches and mercury switch-
es / RMcAs Ms(2500) Me(1937) IC

Microtran Co., Inc., 145 E. Mineola Ave., Valley Stream,
N. Y. / Locust 1-0500 / *' 62

Transmitters / RMcAs Ms(100) Se(1951) IC

Midwest Research Institute, 425 Volker Blvd., Kansas
City 10, Mo. / Longan 2-0202 / *' 62

Studies in application of digital and analog compu-
ters to business and scientific problems; mathema-
tical analysis and computation; computing service;
IBM 1620; contract research; economics research;
operations research; systems engineering; informa-
tion retrieval, digital and analog simulation / 
RMs Ms(500) Me(1944) DA1c

Midwestern Instruments, Inc., 41st and Sheridan Rd.,
P. O. Box 7509, Tulsa 18, Okla. / National 7-1111 / *' 62

Magnetic tape systems, analog and audio tape
recorder/reproducers, facsimile recorders, re-
cordung oscillographs, servo components, tele-
metry systems and amplifiers / RMcAs Ms(500)
Me(1950) DA1c

Miles Reproducer Co., Inc., 812 Broadway, New York 3,
N. Y. / SPRing 7-7670-1 / *' 62

Self-powered miniature sound recorder and re-
producer / RMs Ms(54) Le(1924) 1c

H. Jefferson Mills, Jr., Management Consultant, 375
Park Ave., New York 22, N. Y. / FL 3-4260 / *' 62
Management counsel in systems analysis, equipment
evaluation, organization and facilities planning;
personnel recruitment, selection and training; and
installation programs for electronic computer and
other automatic data processing systems in business,
industry and government / RMcAs Ss Se(1954) DiC

Mincom Div., Minnesota Mining and Manufacturing Co.,
2049 S. Barrington Ave., Los Angeles 25, Calif. / 
Bradshaw 2-9971 and Granite 9-3751 / *' 62

General instrumentation recorder-reproducers and
video band recorder-reproducers / RMcAs Ms(250)
Me(1949) 1c

Minneapolis-Honeywell Regulator Co., Aeronautical Div.,
Florida Facility, 13350 U.S. Highway 19, St. Peters-
burg, Fla. / HEmlock 5-1151 / *' 62

Airborne digital general purpose and digital dif-
erential analyzer high speed computers, memory
drums, buffer memory systems, digital encoders,
pulse generators, SCR switches / RMa Ls(1500)
Le(1875) DiC

Minneapolis-Honeywell Regulator Co., Boston Div., 40
Life St., Boston 35, Mass. / Algonquin 4-5200 / *' 60
Linear accelerometers, electronic test equipment,
d-c data handling amplifiers and preamplifiers, d-c
null indicators, precision temperature control
units, and synchros / RMcAs Ls(1000) Le(1886)
Sic

Minneapolis-Honeywell Regulator Co., Industrial Products
Group, Wayne & Windrim Aves., Philadelphia 44, Pa. / 
DA 9-8300 / *' 61

Digital computers; analog data recorder-transmitter;
simulators / RMcAs ?s Le(1885) DiC

Minneapolis-Honeywell Regulator Co., Industrial Systems
Div., 10721 Hanna St., Beltsville, Md. / Granite
4-7700 / *' 60

Magnetic tape products; systems and techniques for
data acquisition, reduction and analysis; recorders
and transcribers of digital data; analog to digital
converters; magnetic reading and recording heads;
Magnetic tape recorders and readers / RMcAs Ms(400)
Se(1950) DiC

Minneapolis-Honeywell Regulator Co., Special Systems
Div., Queen & So Baileys Sts., Pottstown, Pa. / 
FA 3-4000 / *' 61

General purpose digital computer for on-line real-
time applications; digital data handling systems;
special purpose analog computer systems; develop-
ment, assembly, and maintenance of these systems / 
RMs Ss Ls(over 500) Se(1960, Special Systems Div.)
DA1c

Minnesota Mining and Manufacturing Co., 900 Bush Ave.,
St. Paul 6, Minn. / Ph 6-8511 / *' 61

Magnetic instrumentation tape and accessories / 
RMcAs Ls(19,000) Le(1902) 1c

Minute Maid Co., Data Processing Div., 1200 W. Colonial
Br. Orlando, Fla. / GA 4-2225 / *' 61

Office system and management services, including
service bureau for converting paper tape to cards
and processing IBM cards. IBM 1401 and NCR 304
services available in late 1961 / Ca Ss(40) Me
(1947) DiC

Mitre Corp., P. O. Box 208, Bedford, Mass. / CR 4-9100 /
Rooster of Organizations

**Multnomah Data Processing**, 430 N. W. 10th Ave., Portland, Ore. / *C 62
Computer applications of engineering, statistical and management science problems / (computer service) Ss(40) Se(1959) Ic

**National Bureau of Standards, Applied Mathematics Div.,** 25, D. C. / *C 62
Computing service for government and government contractors only; IBM 7090 - 1401 system / RCGPa Ms(100) Me(1947) Dc

**National Bureau of Standards, Data Processing Systems Div.,** 25, D. C. / *C 60
Digital and analog computers, data processing and control systems, input-output devices, storage elements, transistors, diodes, delay lines, etc. (for government only). Designed, assembled, and maintain and use Seca; designed and assembled Dyscc; designed several special purpose machines / RCGPa Ms(95) Me(1946) Dac

**The National Cash Register Co., Main & K Sts., Dayton 9, Ohio / *C 62**
NCR 304, 315, 310, 390 data processing systems; electronic bank posting machines; punched paper tape recorders; card punch couplers; input-output devices; digital computers / RCGPa Ls(40,000 plus) Le(1804) Dic

EDP and information handling systems analysis; design and implementations; programming; consulting; software development / RCA Ss(20) Se(1961) Ic
Transistorized digital modules and special purpose computers / Ma Ms (150) Se (1955) Dc

New London Instrument Co., Inc., 82 Union St., New London, Conn. / Gibson 3-9451 / *C 60

Analog computers / RMs Se (26) Me (1949) Ac

Simon M. Newman, 1411 Hopkins St., N. W., Washington 6, D. C. / DU 7-4672 / *C 62

Consultant in documentation; specializing in information retrieval / Ca Sa (03) Se (1961) Ic

The Newton Co., 55 Elm St., Manchester, Conn. / Mitchell 3-1543 / *C 61

Data processing equipment. Analog to digital converters; grey to decimal converters; simulators / RMs Mr (75) Se (1952) Dic

The Nissho Company, Ltd., 80, Imabashi-3, Higashiku, Osaka, Japan / - / *C 61

Sales and service for data processing systems; cooperate with prospects for system survey and data processing planning / SCA 75 ? 7a Daic

NJE Corporation, 20 Borigate Ave., Kenilworth, N. J. / BR 2-6000 / *C 60

Electronic power supplies / RMs Mr (150) Se (1955) 1c

NON-LINEAR SYSTEMS, INC., Del Mar Airport, Del Mar, Calif. / Skyline 5-1134 / *C 62

Digital voltmeters, ohmmeters, ratiometers; oscillogram trace readers, electronic measurement instruments for missile, nuclear, scientific, and manufacturing fields; digital readouts, digital processing and recording equipment, scanners, visual output devices, analog to digital converters, digital to analog converters / RMsMs Mr (285) Se (1955) Dic

Norden Div. of United Aircraft Corp., Helen St., Norwalk, Conn. / Temple 0-4471 / *C 61

Electronic rotating components; encoders, synchros, tachometers, gyro, potentiometers / RMsMs Ls (2300) Le (1920) 1c

Norden Div., United Aircraft Corp., Data Systems Dept., 3501 Harbor Blvd., Costa Mesa, Calif. — moved, address unknown

Northrop Corp., 9744 Wilshire Blvd., Beverly Hills, Calif. / Grinstead 4-0961 / *C 61

Digital and analog computers / RMsMs Ls (16,000) Me (1939) Dic


Standard and special magnetic record, playback, and erase heads in single and multi-track arrangements for magnetic tape, film, drum, and magnetic ink character recognition / RMsMas Sa (less than 50) Se (1955) 1c

Nortronics, a div. of Northrop Corp., Electronic Systems & Equipment Dept., Research Park, Palos Verdes Estates, Calif. and 222 North Prairie Ave., Hawthorne, Calif. / - / *C 62

Astronomical navigation systems, inertial navigation systems, computers, control systems, and electromechanical, optomechanical and infrared devices / RMs Mr Ls (7500 in Nortronics Div.) Se (1957 as Nortronics Div.) Dic

Nortronics, a div. of Northrop Corp., Marine Equipment Dept., 77 "A" St., Needham Heights 94, Mass. / HI 9-0400 / *C 62

Radiometric sextants, navigation periscopes, stabilization controls, marine plotting equipment, precision servos / RMs Mr Ls (7500 in Nortronics Div.) Se (1957 as Nortronics Div.) 1c

Nortronics, a div. of Northrop Corp., Precision Products Dept., 100 Morse St., Norwood, Mass. / - / *C 62

Precision gyroscopes, gyro systems, inertial components, flight control systems, accelerometers / RMs Mr Ls (7500 in Nortronics Div.) Se (1957 as Nortronics Div.) 1c

Nortronics, a div. of Northrop Corp., Systems Support Dept., 500 E. Orangethorpe, Anaheim, Calif. / - / *C 62

Automatic checkout systems, optomechanical systems, countermeasures and explosive ordnance, mechanical support systems / RMs Mr Ls (7500 in Nortronics Div.) Se (1957 as Nortronics Div.) 1c

Nuclear Development Corp. of America, 5 New St., White Plains, N. Y. / White Plains 0-5800 / *C 60

Burroughs 205 with magnetic tapes. IBM tab equipment. Mathematical analysis, programming, coding, computing, systems analysis, on an hourly or per job basis / HCPa Ms (250) Me (1940) Dc

Nucleonic Products Co., Inc., 3133 East 12th St., Los Angeles 23, Calif. / AN 2-3503 / *C 62

Diodes, thermistors, tubes, varistors, resistors / MsMs Ms (under 500) Se (1952) 1c

O

Olivetti Corp. of America, 375 Park Ave., New York 22, N. Y. — assets acquired by Underwood Corp.


Digital communication systems; space electronic devices and systems; digital data handling equipment such as checkout equipment, small special purpose computers, tape-to-tape converters, editors, and buffering equipment. Communications terminal equipment such as high-speed photoelectric tape readers, recorders, and displays / MsMs Ls (500) DaicSc

John Oster Mfg. Co., Avionic Div., One Main St., Racine, Wis. / Melrose 7-4445 / *C 61

Servos, synchros, resolvers, dc motors, servo torque units, motor-tachometers, computers, indicators / RMs Mr Ls (1200) Le (1924, company; 1951, Avionic Div.) 1c

Otis Elevator Co., 35 Byerson St., Brooklyn 5, N. Y. / Ulster 5-6000 / *C 61

Analog computers, peripheral equipment / RMsMs Mr Ls (7500) Le (1953, Corp.; 1954, Div.) 1c

Owen Laboratories, Inc., 55 Beacon Place, Pasadena, Calif. / NillRay 1-6993 / *C 61

Semiconductor test equipment / MsMs Sa (10) Me (1947) 1c

P

Pacific Magnetic Corp., Electronic Center, Romoland, Calif. / OLYmpia 7-2657 / *C 62

Transformers, magnetic amplifiers, magnetic speed pickups, power supplies, coils, electronic assemblies, etc. / MsMs Sa (90) Me (1947) 1c

Pacific Semiconductors, Inc., 12955 Chadron Ave., Hawthorne, Calif. / OSborn 9-2201 / *C 61

Silicon diodes and silicon transistors / RMs Mr Ls (3000) Se (1955) 1c

Pacific Tabulating & Statistical Ltd., B202, 355 Bur­bard St., Marine Bldg., Vancouver 1, B. C., Canada / - / *C 62

Univac Solid State 80, IBM 1401, IBM unit record equipment available on an hourly use basis / C (data processing services) Sa (15) Me (1952) 1c

Roster of Organizations

General purpose digital computer and digital system components / Ma Ls(700) Se(1957) Dic

John K. Paden Co., 2624 Shelby St., Dallas 19, Tex. / / *C 62

Electronic data processing management consulting / Co Ss(1) Se(1960) Ic

Panellit - a Div. of Information Systems, Inc., 7401 No. Hamlin Ave., Skokie, Ill. / ORchard 5-2500 / *C 61

Coordinated controls centers; annunciators and alarm systems, electrical control panels, switchboards and switchboards / Ma Ms(330) Me(1944) Ic

Paradynamics Inc., Control Electronics Div., 10 Stepar Place, Huntington Station, L. I., N. Y. / HA 7-7961 / *C 62

Computer components; electromagnetic delay lines, lumped constant and distributed constant, fixed and variable, sonic delay lines. VHF-UHF frequency calibrator, direct reading phase angle meter. Electronic instruments, special power supplies / Ma Ms(70) Me(1951) Ic

The Ralph M. Parsons Co., Electronics Div., 151 S. De Lacey Ave., Pasadena, Calif. / (Los Angeles) MUrray 1-0461 / *C 60

Systems engineering, and manufacturing of electronic instruments, telemetry, timing systems, miss-distance indicators, precision delay lines, and precision transponders / RMSa Ms(200) Se(1952) Ic

P C A Electronics Inc., 16799 Schoenborn St., Sepulveda, Calif. / Empire 2-0761 / *C 61

Miniature pulse transformers, delay lines, toroids, telemetering filters / RMSa Ms(120) Me(1948) Ic

Pendar, Inc., 14744 Arminto St., Van Nuys, Calif. / Triangle 3-0136 / *C 62

Illuminated pushbutton switches, gang switch assemblies, indicators, key-operated switches / Ma Ms(75-100) Se(1952) Ic

The Perkin-Elmer Corp., Main Ave., Norwalk, Conn. / Victor 7-0414 / *C 62

Electronic-optical systems, chemical analytical instruments, electronic components. Recording missile track systems, infrared systems, analog computers, potentiometers / RMSa Ls(1600) Me(1936) Alc

Phasotron Instrument and Electronic Co., 151 Pasadena Ave., South Pasadena, Calif. / CLinton 5-1471 / *C 60

Electric panel meters, test instruments, portable laboratory standards, relays / RMSa Ms(450) Me(1937) Ic

George A. Philbrick Researches, Inc., 127 Clarendon St., Boston 16, Mass. / CO 6-5375 / *C 62

Electronic analog computers, operational amplifiers, regulated power supplies / RMSa Ms(200) Me(1940) Alc


Philo 2000 all transistORIZED large scale data processing systems, BasicPac computers for field data; digital computers; engineering and development digital computers; research in computers / RMSGP a Ls(1500), Computer Div.) Le(1992), Philco) Dic

Philo Corp., Government and Industrial Group, Computer Div. - name changed to Philco Corp., Computer Div. (a Subsidiary of Ford Motor Co.), which see


Germanium and silicon transistors and photosensors / RMSa Ls(4000) Le(1990) Ic

Philo Technological Center, P. O. Box 4730, Philadelphia 34, Pa. / NE 4-5100 / *C 61

Computer and transistor correspondence study courses / (education) a Ss(25) Se(1957) Ic

Philips Electronic Instruments, 750 So. Fulton Ave., M. Vernon, N. Y. / MVernon 4-4500 / *C 62

X-ray diffractometers, spectrophotographs, cameras and detectors, industrial radiographic equipment - x-ray and isotopes, electron microscopes, platting thickness gauges, process control instrumentation, electronic and nuclear measuring equipment / RMSGa Ms(350) Me(1942) Ic

Phillips Control Co., 59 W. Washington St., Joliet, Ill. / Saganore 3-3431 / *C 62

Research, development and manufacture of micro-miniature hermetically sealed relays, power relays, and telephone relays for all types of commercial, industrial, and military applications requiring the most demanding specifications and reliability / RMSa Ms(300) Me(1945) Ic

Photomechanisms, Inc., 15 Stepar Place, Huntington Station, L. I., N. Y. / HA 3-4111 / *C 61

Photo-mechanical and electro-optical instrumentation. Rapid access photographic processing equipment. Ground and airborne instrumentation systems / RMSa Ms(70) Se(1952) Ic

Photon, Inc., 335 Middlesex Ave., Wilmington, Mass. / / *C 62

Photographic composing machines operated by keyboard, by punched tape, and by magnetic tape / RMSa Ms(115) Me(1950) Dic

Plastic Capacitors Inc., 2620 No. Clybourn Ave., Chicago 14, Ill. / Diversey 8-3735 / *C 62

Manufacture capacitors, power supplies, and pulse forming networks / Ma Ms(100) Se(1952) Ic

PM Electronics, Inc., 5221 University Ave., San Diego 5, Calif. / Juniper 3-3166 / *C 61

AC and DC airborne telemetry amplifiers. Wideband, differential airborne amplifiers. AC, DC, wideband DC, differential, and single ended data system and instrumentation amplifiers. Operational (integrating, summing, etc.) amplifiers / Ma Ss (35) Se(1950) Ic

Polyphase Instrument Co., East 4th St., Bridgeport, Pa. / BRoadway 9-4660 / *C 62

Pulse and specialty transformers; magnetic components; delay lines; magnetic amplifiers; filters; potted circuits; computer type coils / RMSa Ms(150) Se(1940) Ic

Potter & Brumfield, Princeton, Ind. / FULTon 5-5251 / *C 62

Electro-magnetic relays / Ma Ls(1500) Me(1932) Ic


Magnetic tape units, high speed printers, perforated tape readers, magnetic record/playback heads / RMSa Ms(425) Me(1942) Dic

James Addison Potter, Consulting Engineer, 81 Rumford St., West Hartford 7, Conn. / ADams 2-5935 / *C 62

Plan, staff, and execute projects in research, development and design, sales engineering, management consulting, and automation systems consulting / RMSa Ss(1960) Da Sa Se(1960) Ic


Semiconductor diodes / RMSa Ss(20) Se(1960) Ic

Quantum, Inc., Computer Center, Lufbery Ave., Wallingford, Conn. / CO 9-7765 / *C 61

IBM 1620 computer: tape card input-output, tape to card, card to tape, keypunch, sorter, printer.
Roster of Organizations

Computer service in engineering, science, management reporting, etc. / RCA Ss(5, Computing Center; 30, Quantum, Inc.) Me(1960, Center; 1940, Quantum) Ic
cathode ray tubes, electrostatic printer tubes for computer output data, piezoelectric accelerometers, memory cores, LC filters and delay lines, knobs and mechanical components, and Raytheon Raysistor®
Raytheon Co., Semiconductor Div., 900 Chelmsford St., Lowell, Mass. / 452-9962 / © 62
Avalanche mode switching transistors, all varieties of germanium and silicon transistors, all varieties of germanium and silicon diodes, silicon rectifiers, circuit-paksc encapsulated circuits using semiconductor devices) RMSa Ls(45,000) Le(1923) Ic
Recordak Corp. (a subsidiary of Eastman Kodak Corp.), 415 Madison Ave., New York 17, N. Y. / MU 8-1212 / © 61
Recordak DACOM System, computer output system on 10mm microfilm / Sa 79 Le(1928) Ic

Raytheon Corporation, P. O. Box 37, Melbourne, Fla. / Parkway 2-1511 / © 62
Research: ground-air telemetry and data link systems; computer input systems and equipment (data processing, programming, communication translating, converting); computer output systems and equipment (recorders and printers) / RMSa(service company) a Ls(1600) Me(1950) Ic
Radio Corp. of America, Electron Tube Div., 415 So. Fifth St., Harrison, N. J. / HU 5-3900 / © 61
Manufacture comprehensive line of electron tubes for entertainment, communications, industry, and military applications. Sell test equipment, batteries, sound tape / RMSa 7a 7e Ic
Radio Corp. of America, Electronic Data Processing, RCA- Cherry Hill, Camden 0, N. J. / Woodlawn 3-0000 / © 62
Commercial systems: RCA 301, 501, and 601 electronic data processing systems; computers, magnetic tape stations, data record files, data disc files, card readers, card punch, paper tape readers, paper tape punches, high-speed on-line printers, MICR equipment, remote inquiry units, command transmitter units. Industrial systems and data communications and custom projects / RMSa Ls(2500, EDP) Le(1919), (RCA) DiCc
Radio Corp. of America, Precision Electronic Instruments Div., Bldg. 15-1, Camden, N. J.
Magnetic tape recorders / RMSa Ic
Radio Corp. of America, Semiconductor and Materials Div., Rte. 202, Somerville, N. J. / Randolph 2-3200 / © 62
Computer and power transistors, switching and tunnel diodes, microcircuits and multiple devices, ferrite cores, planes and stacks / RMSa Ls(3500) Se(1954) Ic
Ramo-Wooldridge, a Div. of Thompson Ramo Wooldridge Inc., 8433 Fallbrook Ave., Canoga Park, Calif. / DI 6-6000 / © 61
Digital computers for industrial process control, scientific and data processing; electronic and photographic display devices / RMSa Ls(1200) Se(1953) DiCc
Xerographic high-speed computer printer / RMSa Ls(3500) Me(1949) Ic
Ransom Research Inc., P. O. Box 269, 374 West Eighth St., San Pedro, Calif. / Termina 2-1129 / © 60
Consulting and computing services; manufacture of digital systems, computing and logical control systems to customer specifications; converters; counters. Joint research and development programs with customers / RMSa Ss(25) Se(1955) DaCc
Raytheon Co., Communications and Data Processing Operation, 1415 Boston-Providence Turnpike, Norwood, Mass. / - / © 62
Special A/D converters, multiplexers, commutators, digital modules and accessories for ultra-high speed applications / RMSa Ls(650) Se(1959) DaCc
Raytheon Co., Industrial Components Div., 55 Chapel St., Newton 50, Mass. / Bigelow 4-7000 / © 62
Reliable miniature and subminiature electron tubes, high density modules, miniaturized light indicators, decade counters, magnetostriiction filters, recording storage tubes and special

RECORDING & STATISTICAL CORP. (Nationwide and Canada), Pacific Coast Offices: 417 Market St., San Francisco, Calif. / YU 1-7011 / © 62
Data processing and computing servicers. R & S Corp., the first and oldest data processing service organization in the U. S., installed the first commercial computer used by a service center. The company has made a place for itself in the space age with highly technical assistance to CFF contractors in cost detail reporting, spares provisioning, wiring specifications, listings, etc. / (service bureau) a Ms(500) Le(1911) Ic

Rowmond-Fairchild Inc., 610 So. Arroyo Pkwy., Pasadena, Calif. / MU 1-6721 / © 62
Magnetic data storage drums / RMSa Ss(45) Me(1951) Ic
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y. / Pionee 6-8100 / © 62
Analog computers and systems, analog-to-digital and digital-to-analog converters, gyro, resolver, servo mechanism system, radar and guidance systems, computing services, data recording equipment, computers for simulation, automation and control, differential analyzers, electronic integrators / RMSa Ls(1600) Me(1942) Ae
Reeves Soundcraft Corp., 13 Great Pasture Rd., Danbury, Conn. / PI 3-7601 / © 62
Soundcraft LND heavy duty computer tape / RMSa Ms(300) Me(1946) Ic
Reflectone Electronics, Inc., a subsidiary of Universal Match Corp., W. Main St., Stamford, Conn. / - / © 62
Special purpose digital and analog simulator computers / RM(design and development of military and industrial simulator) a Ms(400) Me(1940) DaCc
Regency Electronics, Inc., 7900 Pendleton Pike, Indianapolis 26, Ind. / Liberty 7-3581 / © 62
Components, readouts, digital and alpha-numeric / RMSa Ms(200) Me(1945) DiCc
Technical books on the subjects of computers, automation, automatic control and electronics / Se(400) Le(1926) Ic
Remington Rand Div. of Sperry Rand Corp., 315 Park Ave., So., New York 10, N. Y. / Spring 7-8000 / © 62
Digital electronic computing systems (Univac), computing services, office machines, and systems / RMSa Ls(8000) Le(1976) DiCc
Reon Resister Corp., 155 Saw Mill River Rd., Yonkers, N. Y. / Yonkers 5-9850 / © 61
Precision wirewound resistors, composition variable resistors / Ma Ms(50) Se(1952) DaCc
Republic Aviation Corp., Missile Systems Div., Conklin St., Farmingdale, N. Y. / - / *C 62
The design, development and manufacture of special purpose and general purpose digital computers, data processing systems, digital control systems, and digital communications equipment for military applications / RMSa Ls(15,000) Le(1930) DlCc

Special purpose computers, digital computer test equipment / Ma Ms(90) Se(1953) DlCc

Resistance Products Co., 914 S. 13th St., Harrisburg, Pa. / CEdar 6-5081 / *C 62
Resistors: wire wound, high voltage, high frequency, high megohm, metal film and resistance networks / Ma Ms(357) Me(1947) MlC

RF Products, a Div. of Amphenol-Borg Electronics Corp., 33 E. Franklin St., Danbury, Conn. / Pioneer 3-9272 / *C 61
Coaxial cable and wire, coaxial connectors, coaxial switches (relays) / RMSa Ls(750) Se(1960) MlC

Richardson Camera Co., Inc., 2526 North Ontario St., P. O. Box 3066, Burbank, Calif. / Victoria 9-4636 / *C 61
Custom design, engineering and manufacturing services for products applicable to the use of film. Proprietary items include various models of film readers, projectors, precision film transports for sizes from 16mm to 140mm and electronic counters for display and recording of information acquired by data film. Translation of this information may be in standard computer formats such as perforated tape, punched cards, electric typewriter, etc. / RMSCa Sa(30) Me(1953) MlC

Rockford Research Institute Inc., 1405 Mt. Auburn St., Cambridge 38, Mass. / TRowbridge 6-6776 / *C 62
Information retrieval research and artificial intelligence research / RCa Sa(5) Se(1961) MlC

ROTRON MANUFACTURING CO., INC., Hasbrouck Lane, Woodstock, N. Y. / Oriole 9-2401 / *C 62
Cooling equipment, fans, and blowers for flushing computer consoles, cabinets and boxes / Ma Ms (4865) Me(1949) MlC

Royal Electric Corp., 95 Grand Ave., Pawtucket, R. I. / PAwtucket 2-6660 / *C 61
Wire, cable, line cords, wiring devices / Ma Ls (550) Le(1923) MlC

Royal-McBee Corp., Westchester Ave., Port Chester, N. Y. / WESTmore 7-3000 / *C 60
Royal Precision electronic computers and data processing systems / Sa Ls(8000) Se(1954) DlCc

Rutherford Electronics Co., 8944 Lindblade St., Culver City, Calif. / VErnon 7-5273 / *C 60
Electronic test equipment. Pulse instrumentation, pulse generators, accurate time delay generators / RMSa Ms(90) Me(1950) MlC

Ryan Transdata Inc., Harbor Dr., San Diego, Calif. / CY 6-6681 / *C 60
Automated office retrieval systems (nothing ready for marketing yet) / RMSa Sa(21) Se(1960) MlC


Sage Electronics Corp., Box 3926, Rochester 10, N. Y. / UdIow 6-8016 / *C 62
Miniature wirewound precision power resistors / MSA Ms(95) Me(1948) MlC

Sanborn Company, 175 Wyman St., Waltham 54, Mass. / TMinbrook 4-6300 / *C 62
Oscillographic recording instruments and systems, X-Y recorders and transducers, data amplifiers, multi-trace oscilloscopes, tape recorder (7-channel), transducer amplifier/indicators / Ma Ls (1000) Le(1917) MlC

Sanders Associates, Inc., 95 Canal St., Nashua, N. H. / TUxedo 3-3231 / *C 62
TRI-PLATE module mounts for semiconductors including series double-ended cartridges, pigtail diodes, TU-18 and TU-5 transistors / RMSa Ls (2800) Me(1951) MlC

Sangamo Electric Co., 1301 North 11th St., Springfield, Ill. / Kingswood 4-6411 / *C 62
Capacitors, inductive components, magnetic tape recorder/reproducers and delay lines / RMSa Ls(4000) Le(1999) MlC

Santa Anita Engineering Co., 3270 E. Foothill Blvd., Pasadena, Calif. / MlU 1-7441 / *C 61
Electronic enclosures, cabinets and consoles / Ma Ms(50) Me(1945) MlC

Saunders & Co., 8 Prospect St., Waltham 54, Mass. / TW 4-6071 / *C 60
Manufacturers representatives (instructions, components, mechanisms) / Sa Sa(3) Se(1954) MlC

Science Research Associates, Inc., Data Services Div., 259 E. Erie St., Chicago 11, Ill. / WHitehall 4-7552 / *C 62
Document transcription services using high-speed photo-electric scanners as input to magnetic tape computer or punched card systems. DocuTran (TM) service capability for reading up to 5320 pencil responses on both sides of 8% x 11 sheet at over 5000 sheets per hour. Related EDP services, applications and systems consulting, statistical research / RC(computer & statistical services)Sa Ms(180) Se(1956) MlC

Problem solving, mathematical and statistical consulting. Digital computing service / RCPa Sa(15) Me(1937) DlCc

Scientific DATA SYSTEMS, INC., 1542 Fifteenth St., Santa Monica, Calif. / - / *C 62
Two low-cost, high-performance, general-purpose digital computers, the SDS 910 and the SDS 920, for scientific and engineering computation and integration into on-line digital systems. Complete line of digital modules and systems components such as analog-to-digital converters, amplifiers, etc. Design and manufacture of digital systems for industry and government use / Ma Ms(60) Se (1961) DlCc

Scientific Development Corp., 372 Main St., West­town, Mass. / WA 4-0431 / *C 61
Digital computer training devices. MINIVAC 601 digital computer simulator / RMSa Sa(30) Se (1959) DlCc

H. M. Searman, 5834 Oso Ave., Woodland Hills, Calif. / TR 8-0444, DI 0-3803 / *C 62
Development of computer systems and of application techniques. Planning of information systems and documentation aids. Design of computer user training programs and manuals. Assistance in computer equipment selection. Computer market studies. Educational systems and decision-process automation for management / RCPs Ss Se (1962) DAICc

THE SERVICE BUREAU CORP., A SUBSIDIARY OF IBM, 425 Park Ave., New York 22, N. Y. / Plaza 1-5600 / L 62
Data processing, programming, systems analysis; machine services on a contractual basis for business and scientific problems using IBM 650, 1401, 7070, 704, 709, 7090, 1620, datalogging, MIR reader-sorter, and unit record equipment. Offices in 70 cities. Extensive computer application experience in fields too numerous to list. The following data processing systems are available on an hourly basis: IBM 650, 1401, 7070, 704, 7090. (IBM 1620 in second half of '62) RCPs Ls(1600) Let(1922) DAICc

Servomechanisms, Inc., 200 No. Aviation Blvd., El Segundo, Calif. / Osborne 5-7111 / C 62
Air data computers, transducers, motors, transformers, ground support equipment, microminiaturized thin film computer elements, welded module assemblies, resistors / RMa Ls(722) Me(1946) DAICc.

Shand and Jurs Co., a subsidiary of General Precision, Equipment Corp., 2600 Eighth St., Berkeley 10, Calif. / Th omnwall 8-2345 / C 62
Dataloggers, telemetering systems, data-handling equipment / RMs Ms(175) Le(1920) Ic

Shipard Laboratories, Inc., 400 Morris Ave., Summit, N. J. / Crestview 3-5255 / C 61
High-speed input-output accessories for computers and EDPS (typers, decoders, tape transports, etc.) / RMc Ms(40) Me(1944) Ic

Marc Shiwitz & Associates, Inc. -- name changed to Mesa Scientific Corp., which see

F. W. Sickles Div., General Instrument Corp., 165 Front St., Chicopee, Mass. / Lycenus 4-4701 / C 62
Computer components; electromagnetic delay lines, lumped constant and distributed constant, fixed and variable step; audio and ultrasonic filters; toroidal inductors; embedded assemblies; L-C tuned circuits; etc. / Ms Ls(1900) Le(1921) Ic

Applications of computer simulation to marketing, advertising, economic and behavioral problems / RCa Sa(201) Se(1959) Ic

N. E. Slavin & Co., 30-40 E. Cross St., Somerville 45, Mass. / ND 6-3320 / C 60
Producers stainless steel shim stock / MSA Ss(6) Me(1943) Ic

Smith-Corona Marchant Inc., 410 Park Ave., New York 22, N. Y. / Plaza 2-2700 / C 61
Data processing and recording systems for special applications; communications systems for data processing systems. Adding machines, electric controlled typewriters; desk calculators, magnetic tape converters; input/output devices; office machines; high-speed and keyboard printers; magnetic tape, mechanical, paper tape and photo-electric readers, magnetic tape recorders and storage systems; paper tape punches; translating equipment / RMs Ms(10,000) Le(1922) Ic

Societe D'Electronique Et D'Automatisme, 138 Boulevard de Verdun, Courbevoie, Seine, France / DEfense 41-20 / C 62
Analog computers: Type NADAC 20 and NADAC 100 with non-linear components and recorders; flight simulators; digital computers Type CAB 500 and 3900 for scientific applications and data processing, using punched tape and magnetic tape: input and output equipment, tape reader, paper tape punches. Electronic high speed printers, digital to analog converter "ENAC"; automation devices, coders, storage, etc.; numerical control / RMc Ms(5000) Me(1948) DAICc.

The Society for Automation in Business Education, 1108 Johnson Ave., San Jose 29, Calif. / - / C 62
An educational organization for businessmen and business educators / Publishing Ss(4) Se(1960) Ic

Constant voltage regulators / RMc Ms(900) Le(1921) Ic

Sorensen & Co., Inc., a subsidiary of Raytheon Co., Richards Ave., Norwalk, Conn. / Temple 8-6571 / C 61
Regulated power supplies -- voltage regulators / RMs Ms(400) Me(1934) Ic

Soroban Engineering, Inc., Box 1717, Melbourne, Fla. / Parkway 3-7221 / C 62
Data input-output systems; data preparation devices; output tabulating devices; coding keyboards; paper tape readers and perforators; specialized data computing systems and consulting services on all of above; computer components; relays; storage systems; paper tape punches and readers; translating equipment; electric controlled typewriters / RMcMs Ms(190), Se(1954) Ic

Precision capacitors / RMc Ms(64) Me(1951) Ic

Computing service, solving data reduction, engineering and business problems; IBM 604, Alwac 111, and associated equipment. Burroughs B260 for delivery in fall '62 / RCPs Ss(10) Se(1953) IAc

Space Technology Laboratories, Inc., One Space Park, Redondo Beach, Calif. / - / C 62
Research and development of missiles and space vehicles. Management information processing systems. 2 IBM 7090's, 6 IBM 1401's, RCA 501, RCA 301, plus a special purpose data reduction and analogue computation center / Rn Ls(4400) Se(1954) DAICc

Specialties, Inc., Skunks Misery Rd., Syosset, N. Y. / Walnut 1-2345 / C 60
Flight computers; micro. computers; altitude, air-speed, air data, engine pressure ratio, pneumatic test equipment; controllers / RMs Ms(450) Me(1942) Ic

Spectrol Electronics Corp., 1704 South Del Mar Ave., San Gabriel, Calif. / Atlantic 9-9764 / (eastern plant) 1250 Shames Dr. Westbury, L. I., N. Y. / Edgewood 3-9550 / C 60
Precision potentiometers; precision mechanisms; transistorized converters and inverters, power supplies, switches; resistors, variable, linear and non-linear / RMs Ms(400) Se(1953) Ic

Sperry Farragut Co., Div. of Sperry Rand Corp., Bristol, Tenn. / ND 8-1151 / C 62
Amplifiers; packaged computer circuits, plug-in circuits, printed circuits; computer type coils; analog computers; computer components; fire control equipment; and systems engineering / RMs Ls(650) Me(1951) AICc
Sperry Gyroscope Co., Div. of Sperry Rand Corp., Great Neck, N. Y. / LR 4-0111 / *C 62
Research, design development and manufacture of digital and analog computers for underwater, surface and airborne applications, including general purpose and special miniature computers for airborne and space applications; data processing equipment; electronic digital to analog and analog to digital conversion equipment; counter-measures systems; check-out equipment; magnetic drums and memory systems; stable platform forms, gyroscopes and accelerometers for inertial guidance systems for ships, aircraft and missiles, specializing in automatic transitorized, miniaturized devices / RMSa Ls(17,500) Le(1910) DAC
Sperry Semiconductor Div. of Sperry Rand Corp., Norwalk, Conn. / Victor 7-3851 / *C 62
Silicon diodes, transistors, semiconductor products and semiconductor integrated networks / RMSa Ms(300) Se(1956) lCe
Transistors: switching, ECD, MAdT, MAT, SPAT; core and film driving, ECD. Capacitors: minia-
ture, and low dielectric hysteresis loss, for computer applications. Standard capacitors; precision and power type resistors; pulse trans-formers; radio interference filters; shift registers; printed circuits; packaged logic circuits / RMSa Ls(8000) Le(1926) lCe
Stackpole Carbon Co., Stackpole St., St. Mary's, Pa. / Terminal 4-1521 / *C 61
Anti-corrosion and chemical anodes; electric motor and generator brushes; precious metal contacts; carbon and graphite seals; mechanical carbon and graphite; carbon and graphite bearings; resistors; switches; soft ferrites; permanent ceramic magnets; and magnetic powder / Na Ls(2500) Le(1906) lCe
The Standard Register Company, 626 Albany St., Dayton 1, Ohio / Baldwin 3-5101 / *C 62
Business forms for source data collection (input) and (output) EDP equipment plus data collection and transmission equipment (Datary 401) / Msa Ls (3600) Le(1912) lCe
Stanford Research Institute, 333 Ravenswood, Menlo Park, Calif. / Barnett 6-6200 / *C 61
Ba Ls(1952) Ms(60) Se(1956) lDAC
Statistical Instrument Company, 25 Sutton Place South, New York 22, N. Y. / Pl 2-1089 / *C 61
Statistical processing equipment; computer test equipment, analog-to-digital and digital-to-analog signal converters, penon signal and number generators, amplitude distribution analyzers, audio spectrum analyzers / RCA Ss(6) Se(1953) lCe
Statistical Tabulating Corp., 104 S. Michigan Ave., Chicago 3, Ill. / Area Code 312, Dearborn 2-2484 / *C 62
Fourteen Data Processing and Computer Centers containing IBM 1400-Series card and tape systems plus peripheral equipment and conventional punch card tabulating and data processing machines. Administrative management, scientific management, engineering and general data processing, programming, systems, analysis, and consultation. Divisions: Data Processing; TASK FORCE; Computer Advisors to Management; Space Services / RSCa Ls(5000) Me(1933) DAC
Stereotronics, 200 Ellis Rd., Weston 93, Mass. / Twinbrook 5-6071 / *C 60
Solid-state information-handling devices: transistor, magnetic, ferroelectric applications / RMSa Ss(2) Se(1954) lCe
Stellarmetrics, 210 E. Ortega St., Santa Barbara, Calif. / - / *C 62
Development and production of standard and special electronic commutators/multiplexers for telemetry and data reduction applications. Also manufacture state-of-the-art low/high level "Microplexer" all-purpose 100 channel sampling switch and the low-level "Magrister" switching device used in Microplexer. Decommutation system development and pilot production for general and specialized applications including, but not limited to, computer data reduction facilities / RMa Se(14) Se(1961) lCe
Sterling Instrument div. of Designatronics, 17 Mattie-necook Ave., Port Washington, N. Y. / FO 7-8200 / *C 61
Field engineers available on a national basis for component consultation; 20,000 stock electronic components (servo) / RMSa Ms(150) Se(1958) lCe
D. M. Steward Manufacturing Co., F. O. Box 510, Chattanoo, Tenn. / Taylor 1-1564 / *C 61
Ferrites and other technical ceramics, ferrite mag-netic cores, recording heads, pulse transformer cores / RMSa Ms(150) Le(1976) lCe
Strand Engineering Co., 7300 Huron River Dr., Dexter, Mich. / HA 8-6111 / *C 62
Digital display systems and modules, special pur-pose computing systems, automatic control and automation systems / RMSa Ms(67) Se(1955) DAC
Stromberg-Carlson Div. of General Dynamics Corp., 100 Carlson Rd., Rochester 3, N. Y. / Hubbard 2-2200 / *C 60
Special purpose data processing, high speed data communication, data acquisition and logging, high speed readout and display / RMSa Ls(9000) Le(1904) lCe
Sunshine Scientific Instruments, 1810 Grant Ave., Philadelphia 15, Pa. / Orchard 3-5660 / *C 62
Testing and measuring equipment, calibration, certification. Analog field plotter, prototypes, precision electromechanical assemblies, mechanical components / RMSa Ms(60) Se(1956) lCe
Superex Electronics Corp., 4-6 Radford Pl., Yonkers, N. Y. / Yonkers 5-6096 / *C 62
Cable assemblies, plug in and printed circuits, coils, ferrite cores, jacks, transformers, head-phones, headsets, and other components / RMSa Ms(100) Se(1961) lCe
Sutherland Co., 1112 First National Bank Bldg., Peoria, Ill. / 673-5431 / *C 62
Integrated management information systems utilizing electronic data processing equipment. Developed DATIS -- Development and Analysis Techniques for Information Systems / Ca Ss(35) Me(1950) DC
Sylvania Electric Products Inc., 1740 Broadway, New York, N. Y. / Judson 6-2424 / *C 61
Electronic tubes, semi-conductors, diodes, lighting devices / RMSa Ls(29,000) Se(1954) lCe
Transistors, diodes, microwave diodes, bullet rectifiers / RMSa Ls(3000) Le(1901) lCe
Sylvania Electronic Systems, 40 Sylvan Rd., Waltham 54, Mass. / Twinbrook 3-6444 / *C 62
Small, medium, and large-scale computers; special and general-purpose; terminal and switching equip-ment; programming services / RMSa Ls(6100) Se(1955) DAC
Systematics, a Div. of General Instrument Corp., 3216 W. El Segundo Blvd., Hawthorne, Calif. / - / *C 62
Tape to card converters, card to tape converters, tape to tape converters, tape and card communica-tion systems, data system input/output devices / Rsa Ms(175) Se(1955) lCe
System Development Corp., 2500 Colorado Ave., Santa
Roster of Organizations

Monica, Calif. / EKbrook 3-9411 / *C 62
Perform design, analysis, implementation and training of large data processing systems / Ra
Ls(4000) Se(1956) Ic

Systems Data Processing Co., 908 - 15th St., Sacramento
14, Calif. / - / *C 62
Punched card, punched tape, and punched ticket data processing services / (data processing services) Se(9) Se(1959) Ic

Systems Div. of Beckman Instruments, Inc. — see Beckman Instruments, Inc.

Systems Laboratory Corp., a div. of Electronic Specialty Co., 5121 San Fernando Rd., Los Angeles 39, Calif. / CH 5-3771 / *C 60
Systems analyses, specifications and simulation of advanced systems, computer service bureau to industry / RC (computer service bureau) a Ls(625) Se(1956) Ic

Systems Research Group, Inc., 1501 Franklin Ave., Mineola, L. I., N. Y. / - / *C 62
Mathematical analysis, operations research, computer programming (IBM 7900, IBM 704, IBM 709, IBM 1401, CDC 160, CDC 160A, CDC 1604, UNIVAC, TRANSMAC) / RCA Se(40) Se(1959) Ic

Systron-Doner Corp., 806 Galindo St., Concord, Calif. / - / *C 62
Analog computers, data acquisition and logging systems / RMSa Ms(400) Se(1960) Ac

Tabulating Service of Dallas, 1222 Ft. Worth Ave., Dallas 8, Tex. / - / *C 62
IBM 407, 402, etc. Sales analyses, payrolls, inventories, statistical, etc. / (IBM training) a Sa(25) Me(1946) Ic

Tally Cooper Div., American Electronics, Inc., 75 Front St., Brooklyn, N. Y. / *C 60
Toll collection and control equipment, measuring and readout systems

Tally Register Corp., 1310 Mercer St., Seattle 9, Wash. / MAIN 4-0760 / *C 62
Paper tape perforators; paper tape readers; paper tape preparation, duplication, and verification equipment; data communication equipment, tape preparation and hard copy print-out systems, paper tape to magnetic tape converters, magnetic tape to paper tape converters, special digital systems / Msa Ms(80) Me(1951) Dc

Taurus Corp., Academy Hill, Lambertville, N. J. / Export 7-2390 / *C 62
Static punched card readers, teflon insulated terminals / Nsas Sa Se(1956) Ic

Normandy 2-1159; (Tex.) Lakeiside 0-1650; (Ariz.)
AMherst 4-7175 / *C 62
Digital computer service bureau using LEP-30 and RPC-4000 / Ca SaSa(15) Se(1954) Dc

Publishers of "Computer Abstracts" and "Computer News" / Ms(130) Me(1951) Ic

Industrial, commercial and military operations research; automatic programming systems and digital simulations, data processing systems; transistorized power supplies (manufactured by subsidiary) / RSca Ms(350) Se(1951) Ic

Technical Operations, Inc., Monterey, Calif. — name changed to Laboratory for Electronics Inc., Monterey Laboratory, which see

Techniques Inc., 40 Jay St., Englewood, N. J. / LOWell 9-5333 / *C 62
Printed circuits; blank modular P. C. boards with circuits for digital operations; photo-etched metal parts / RMSa Ms(under 50) Se(1954) Ic

Peripheral equipment, print station, buffer memories, delay lines (electromagnetic, magnetostriuctive), pulse transformers / Msas Ms(256) Me(1947) Ic

Technology Instrument Corp. — name changed to Bowman Instrument Corp., which see

Tech Serv Inc., 4911 College Ave., College Park, Md. / *C 62
Manufacturers of transistorized digital logic elements and systems / RMSas Ms(35) Se(1959) Ic

Telecomputing Corp., 9229 Sunset Blvd., Los Angeles 69, Calif. / Chestview 4-0771 / *C 62
Data analysis and processing equipment, special purpose computers, data reduction analysis and counselling / RMSca Ls(3000) Se(1942) BAlCe

Telecomputing Services, Inc., 8949 Reseda Blvd., Northridge, Calif. / - / *C 62
Services for the study, design, implementation and operation of data reduction and data processing systems. Data measurement, programming, and computer services available on an hourly basis. Extensive data reduction experience at missile test ranges, including the development and operation of automatic telemetry data reduction. Management data; inventory control, PERT, labor distribution, payroll, etc., available on IBM 1401-7070 / Sa Ms(290) Me(1947) Ic

Printer/reader, multistylist plotter and circuit modules / RMSa Ls(590) Me(1948), division) Ic

The Teleregister Corp., 445 Fairfield Ave., Stamford, Conn. / FI 6-4291 / *C 62
Data processing systems, designed for particular applications, including input/output, integrated communications; data display and storage facilities, and central processors. Over 1,000,000 hours' experience with commercial on-line operation: systems designed, built and maintained / RMSa (systems engineering) a Ls(1100) Le(1969) Ic

Teletype Corp., 5555 Touhy Ave., Skokie, Ill. / COrnelia 7-6700; ORchard 6-1000 / *C 62
Message and data communications equipment. Tape readers and tape punches for computer input/output. Page printers / RMSa Ls(5200) Le(1907) Ic

Telex/Aemco, a Div. of Telex, Inc., 30 State St., Mankato, Minn. / - / *C 62
Manufacturing electro-magnetic relays and industrial timers / Ms Ms(420) Le(1910) Ic
Telex/Ballustran, 1701 N. Calhoun St., Fort Wayne 7, Ind. / - / *C 62
Specialty transformers / RMSa Ms(185) Me(1946) Ic

Telex, Inc., 1633 Eustis St., St. Paul 1, Minn. / Microwave 6-7011 / *C 61
Magnetic disc memories, magnetic amplifiers, trans formers, relays, indicator lights / RMSa Ls(2000) Me(1939) Ic

Texas Instruments Inc., 13500 N. Central Expressway, Dallas 22, Texas / Aoms 6-9111 / *C 62
Semiconductor products and components, silicon and germanium transistors, silicon diodes and rectifiers, resistors, tantalum capacitors / RMSa Ls(6000) Se(1954) Ic
### Roster of Organizations

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address Details</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Instruments Inc., Apparatus Div.</td>
<td>P.O. Box 6015, Dallas, Tex.</td>
<td>/ - / *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Amplifiers, multipliers, power supplies / RMSAs</td>
<td>2%-7% Ic</td>
</tr>
<tr>
<td>Texas Instruments Incorporated, Semiconductor Components Div.</td>
<td>Box S012, Dallas 22, Tex. / AD 5-3111</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Transistors (germanium and silicon); solid circuit semiconductor networks; silicon diodes; silicon rectifiers; capacitors; resistors / RMSAs</td>
<td>(14000) Me(1933) Ic</td>
</tr>
<tr>
<td>Thermacon, Inc.</td>
<td>375 Fairfield Ave., Stamford, Conn. / DAVIS 4-6123</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Temperature limited diodes and other special purpose vacuum tubes / RMSAs</td>
<td>(15) Me(1951) Ic</td>
</tr>
<tr>
<td>Thompson Ramo Wooldridge Inc., RW Div.</td>
<td>8433 Fallbrook Ave., Canoga Park, Calif.</td>
<td>/ - / *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Digital computers for on-line real time control; peripheral equipment; display devices; information system design / RMSAs</td>
<td>(1000) Se(1954) Dic</td>
</tr>
<tr>
<td>Traid Corp.</td>
<td>17136 Ventura Blvd., P.O. Box 648, Encino, Calif. / TRIANGLE 3-3773</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Photographic instrumentation equipment, high-speed and data recording motion picture cameras and related accessories, advanced electronic miss-distance systems / MS(research and development in photographic engineering, electronic miss-distance systems)</td>
<td>23(30) Me(1946) Ic</td>
</tr>
<tr>
<td>Trak Electronics Co., Inc.</td>
<td>59 Danbury Rd., Wilton, Conn. / BETTY 2-5521</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Morse-to-teleprinter code converters, TWX-to-CCITT translators; teletype multiplexers / RCA Ms</td>
<td>(250) Me(1947) Ic</td>
</tr>
<tr>
<td>Transitron Electronic Sales Corp.</td>
<td>169 Albion St., Wakefield, Mass. / 245-4500</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Silicon transistors, diodes, rectifiers, controlled rectifiers, references and regulators, switches, micro-components, capacitors and encapsulations, multiple assemblies and circuit packages / RMSAs</td>
<td>(3400) Se(1952) Ic</td>
</tr>
<tr>
<td>Trio Laboratories, Inc., DuPont Rd., Plainview, L.I. / N.Y. / OVERBROOK 1-4099</td>
<td>/ *C 62</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>Analog component for solving three dimensional equations (MODLAC); all transistor voltage comparator; voltage monitor; test instruments / RMSAs</td>
<td>(75) Se(1954) Iic</td>
</tr>
<tr>
<td>TRW Computers Co., a div. of Thompson Ramo Wooldridge Inc.</td>
<td>8433 Fallbrook Ave., Canoga Park, Calif. / 346-6000</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Magnetic drum and drum-core computer systems for full-time on-line control of industrial processes such as steel mills, power stations, and chemical and refining plants / RMSAs</td>
<td>(150) Se(1957) De</td>
</tr>
<tr>
<td>Tunco-Sol Electric, Inc.</td>
<td>95 8th Ave., Newark 4, N.J. / HUMBOLDT 2-1200</td>
<td>/ *C 59</td>
</tr>
<tr>
<td>-</td>
<td>electron tubes, semi-conductors, miniature lamps, diodes, germanium transistors / RMSAs</td>
<td>(7000) Le(1964) Ic</td>
</tr>
<tr>
<td>Underwood Corp.</td>
<td>1 Park Ave., New York 16, N.Y. / OREGON 9-3400</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Paper tape producing equipment and paper tape to card, paper tape to magnetic tape converters. Portable, manual, electric, and variable space electric typewriters; manual and electric adding machines; high speed one- and two-register printing calculators; audit accounting machines, with fully automatic programming, with or without electric typewriter keyboards; mercator billing/accounting machines, with fully automatic programming, electric typewriter keyboards, high-speed solid-state electronic multiplexing units, and integral paper tape punchers; Data-Flo Tape to Card Converters, to convert Data-Flo paper tape into punched cards at 6000 cards per hour, with completely flexible plug-board programming, and automatic self-verification / RMSAs</td>
<td>(6000) Le(1942) DISC</td>
</tr>
<tr>
<td>Union Carbide Nuclear Co., Central Data Processing</td>
<td>P.O. Box F, Oak Ridge, Tenn. / AREA Code 615, 400-6611, ext. 1671</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Numerical analysis and data processing using digital computers / RGP(AEC contractor)</td>
<td>Ms(85) Me(1948) De</td>
</tr>
<tr>
<td>Union Switch &amp; Signal Div. of Westinghouse Air Brake Co., Braddock Ave., Pittsburgh 10, Pa. / CHurchill 2-5000</td>
<td>/ *C 62</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>&quot;Readall&quot; readout instruments, miniature and sub-miniature relays, remote control systems for railroads and pipelines / RMSAs</td>
<td>(1875) Le(1980) UIC (Control systems engineering)</td>
</tr>
<tr>
<td>-</td>
<td>Computing service (for air force use) has Univac 1103A; system dynamic simulator (Reeves analog); Bendix DDA; analog and digital scientific computation / RGPs</td>
<td>Ms(59) Me(1950) DAc</td>
</tr>
<tr>
<td>U.S. Army, Ballistic Research Laboratories, Aberdeen Proving Ground, Md. / CRESTWOOD 2-4000, Ext. 43271</td>
<td>/ *C 62</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>High-speed digital computers and computing service for government and government contractors / RGPs</td>
<td>Ms(120) Me(1940) Dc</td>
</tr>
<tr>
<td>U.S. Naval Weapons Laboratory, Computation and Analysis Lab., Dahlgren, Va. / NORTH 3-2511</td>
<td>/ *C 62</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>Mathematical analysis and research, programming, engineering, and chemical systems airborne and ground-based, real time services for government and government contractors only; operate NORC and IBM 7090 computers, Universal Data Transcriber and a variety of auxiliary equipment / RGPs</td>
<td>Ms(325) Me(1942) Dc</td>
</tr>
<tr>
<td>-</td>
<td>Two IBM 705 III (planning for 1401's), five IBM 1401's. Transceiver and EAM equipment services for Naval Aviation Inventory Control / Ga Ms</td>
<td>(250) Se(1952) De</td>
</tr>
<tr>
<td>U.S. Semiconductor Products, a div. of United Industrial Corp.</td>
<td>3540 West Osborn Rd., Phoenix, Ariz. / BBOWING 2-1341</td>
<td>/ *C 62</td>
</tr>
<tr>
<td>-</td>
<td>Silicon transistor and rectifier diodes, silicon voltage regulating diodes, silicon crystals, tantalum capacitors (wet and dry electrolyte) / RMSAs</td>
<td>Ms(175) Se(1957) Ic</td>
</tr>
<tr>
<td>UNIVAC Military Operations of Sperry Rand Corp., UNIVAC Park, St. Paul 16, Minn. / - / *C 62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>Digital electronic computing and data processing systems airborne and ground-based, and real-time computers, peripheral equipment programming services / RAMs</td>
<td>(6000) Me(1947) Dic</td>
</tr>
</tbody>
</table>
SPACE SYSTEMS PROGRAMMING!

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LABORATORY FOR ELECTRONICS, INC.

An Equal Opportunity Employer
Western Electronic Co., 717 Dexter Ave., Seattle 9, Wash. / AT 4-0200 / *C 62
Heat radiation analog our "Reastan". Also the general use "Western Electronic analog computer" / RMSa Ss(25) Me(1946) Ac

Westinghouse Electric Corp., 717 Dexter Ave., Seattle 9, Washington / AT 4-0200 / *C 62

Westinghouse Electric Corp., 4454 Genessee St., Detroit 2, Mich. / AT 6-7106 / *C 62

Westronics, Inc., 706 S. High St., Young Springs, Ohio / ROckwell 7-7575 (Dayton, Ohio -- Victor 9-1330) / *C 62
Research, development, prototype, and small lot production in electronics, physics, optics and photography; simulators and missile guidance equipment, digital computing and consulting services, controls, X-Y plotter and vehicle position displays, radio receivers and transmitters, industrial instrumentation, can leak testers, airborne servo systems for cooling of electronic equipment, eye movement cameras, air traffic control instrumentation / RMSc Ca Ss(40) Se(1956) DlCc

Westinghouse Electric Corp., 4454 Genessee St., P. O. Box 2025, Buffalo 5, N. Y. / AT 2-1500 / *C 61
Custom industrial control computers. Data logging equipment and programming controls / Msa Ls(6000) Le(1885) DlCc

Westinghouse Electric Corp., Air Arm Div., P. O. Box 746, Baltimore 3, Md. / AT 1-1000 / *C 62
Analog and digital computers, analog/digital and digital/analog converters, and other complete line of peripheral equipment for military systems / RMSc Ls(4000) Me(1950) DlCc

Westinghouse Electric Corp., Electronic Tube Div., Box 204, Elmira, N. Y. / AT 9-3611 / *C 62
Receiving tubes: image, storage, multiplier phototubes; special purpose tubes; military and industrial cathode ray tubes / RMSc Ls(2500) Le(before 1930) Ic

Westinghouse Electric Corp., Research & Development Center, Pittsburgh 35, Pa. / AT 1-2900 / *C 62
Complete line of industrial computer systems. Digital: Prodac industrial computers for all industrial processes and electric utility generation and dispatching applications. Analog: economic dispatch computer for dispatching power on electric utility systems / RMSc Ca Ls(125,000) Le(prior to 1900) DlCc

Westinghouse Electric Corp., Semiconductor Dept., Youngwood, Pa. / AT 5-7272 (Youngwood) / CH 2-7400 (Pittsburgh) / *C 61
Silicon rectifiers; silicon transistors; Trinister® controlled rectifiers; thermoelectric coolers; thermoelectric generators; ball generators; molecular functional electronic blocks / RMSc Ls Se(1965) Ic

Westronics, Inc., 3605 McCart St., P. O. Box 11250, Berry St. Sta., Ft. Worth 10, Tex. / AT 3-8211 / *C 62
Manufacturer of strip chart recorders / RMSc Ms (60) Me(1946) Ic

Magnetic storage drums, tape readers, tape punches, switching transformers / RMSc Ms(10) Se(1949) Me(1940) Ic

Wheelock Signals, Inc., 373 Branchport Ave., Long Branch, N. J. / AT Capitol 2-6680 / *C 61
Miniature and special relays for computing equipment; wire contact plug-in, microminiature, high speed, etc. / Msa Ms(200) Le(1925) Ic

Whitewater Electronics Inc., 136 W. Main St., Whitewater, Wisc. / AT 906 / *C 61
Cables and delay lines / RMa Ms(100) Se(1955) Ic

Wiancko Engineering Co., 255 N. Halstead Ave., Pasadena, Calif. / AT 5-7106 / *C 62
Telemetry, control and data acquisition systems; pressure, acceleration and force transducers; test and calibration instruments / RMa Ms(240) Me(1946) Ic

Technical books / Msa Ms(300) Le(1807) Ic

Winchester Electronics, Inc., 19 Willard Rd., Norwalk, Conn. / VI 7-7231 / *C 62
Connectors, connector accessories, terminals / Msa Ls Me(1940) Ic

Winsco Instruments & Controls Co., 1533 26th St., Santa Monica, Calif. / AT 8-4728 / *C 62
Digital converters, temperature transducers, digital temperature controllers / Msa Ms(22) Se(1960) DlCc

Digital computer consulting, programming, and operation. Bendix 6-130 with trace generator / Ca Ms(120) Se(1954) DlCc

Wood's, Gordon & Co., 15 Wellington St. West, Toronto, Ontario, Canada (also at Montreal, London, Calgary, Vancouver) / AT 8-2751 / *C 62
Management consulting and system design / CPa Ms(55) Le(1930) Ic

Wright Engineering Co., Inc., 180 E. California Blvd., Pasadena, Calif. / AT Murray 1-8480 / *C 62
Shaft encoders; magnetic digital logic components and systems; buffers and storage systems; data display oscilloscopes, delay lines, system and lab power supplies / Sa Ms(10) Se(1950) DlCc

Wright Line, a div. of Barry Wright Corp., 160 Gold Star Blvd., Worcester 6, Mass. / AT SW 1-0931 / *C 62
Specialists in data handling and filing systems. Data processing accessory equipment, computer department accessories, check handling equipment / RMSc Ca Ms(300) Le(1934) Ic

Zator Company, 1405 Mount Auburn St., Cambridge 38, Mass. / AT Cambridge 6-6776 / *C 62
Information retrieval research and artificial intelligence research / RCa Ss(5) Me(1947) Ic

Zuse Kommand-Gesellschaft, 4, Wehenberger St., Bad Hersfeld, Hessen, Germany / *C 60
Electronic and relay digital computers, automatic curve plotters, automatic machine activity recorder, data processing equipment / RMSc Ca Ms(270) Me(1949) Ic
The purpose of this roster "The Buyers' Guide for the Computer Field: Products and Services for Sale or Rent" is to give information about the existence and in many cases the properties of every product or service in the computer field that is offered for sale or rent and about which we have received information in 1962. We have not tried this year to index entries re information received 1961 and earlier. This is the sixth cumulative edition of this roster.

Kinds of Entries. There are three kinds of entries in this list: full entries; cross reference entries; and name entries. A full entry contains or should contain the following information:

Name of supplier and address / name or identification of product or service / DESCR: a brief description of the product in about 25 words or more / USE: how it is used / price range, and whether for sale or rent.

Every entry is subject to editing.

Cross-reference entries show that a product listed under one product heading is described more fully under another product heading.

Name entries consist of just the name of the organization, listed under the product class.

Corrections. We have tried to make each entry correct to the extent of information in our possession. But it is inevitable that at least some errors have occurred, and we shall be glad to publish corrections.

Questionnaire. Nearly all the entries in this roster have been derived from answers to questionnaires which we sent out twice (in February and March) to over 700 suppliers in the computer field.

As a guide to the products and services offered in the computer field, please refer to the following list of some 202 headings under which products and services are classified. There is overlapping among these headings; it may be necessary or desirable to look under more than one heading:

A: Adding Machines
Addressing Machines
Amplifiers . . .
— Magnetic
Analog Computers (SEE Computers, Analog)
Automatic Assembly Equipment
Automatic Control Equipment
Automatic Test Equipment
B: Boards — Plotting
— Plug

— Printed Circuit
— Strip Type
Bobbins, Coil Winding
Breadboard Kits
C: Cable
Cable Assemblies
Cameras . . . .
— Data Recording
Capacitors (Computer Types)
Cards (SEE ALSO Punch Cards)
— Punch
— Magnetic

Note: Up to 25 words (subject to editing) will be published FREE.

If you want more than 25 words published, the charge for up to 50 words (still subject to editing) is $15.00
( ) Please give us 50 words. Enclosed is $15.00

If you wish to FLAG your entry so that it will be quickly noticed, you can choose CAPITAL LETTERS for the name of YOUR COMPANY and YOUR PRODUCT, and a black ruled line all around your entry so that it is boxed, and the charge is $20.00
( ) Please FLAG our entry as described. Enclosed is $20.00

Organization __________________________
Address ______________________________
This data supplied by _______________ Date ________

(List of headings)

A: Adding Machines
Addressing Machines
Amplifiers . . .
— Magnetic
Analog Computers (SEE Computers, Analog)
Automatic Assembly Equipment
Automatic Control Equipment
Automatic Test Equipment
B: Boards — Plotting
— Plug
— Printed Circuit
— Strip Type
Bobbins, Coil Winding
Breadboard Kits
C: Cable
Cable Assemblies
Cameras . . . .
— Data Recording
Capacitors (Computer Types)
Cards (SEE ALSO Punch Cards)
— Punch
— Magnetic
A1. ADDING MACHINES

Burroughs Corp.,
Friden, Inc., 2350 Washington Ave.,
San Leandro, Calif. / Friden Adding Machine / DESCR: ten-key adding machine with visual check dials. "Natural Way" keyboard, automatic credit balance, automatic step-over of multiplicand, and other features for rapid multiplication / USE: general application / - / A1

Underwood Corp.

A2. ADDRESSING MACHINES

Elliott Industries, Inc.

A3. AMPLIFIERS

Airpax Electronics, Inc.
Amplifier Corp. of America, 398 Broadway, New York 13, N.Y. / amplifiers / DESCR: transistorized audio amplifiers to order; also constant output amplifiers by automatic vol./voltage control / A3

ARCDA Div. of All American Engineering Co.

Astrometrics, Inc.
Beckman Instruments, Inc.
Beckman Instruments, Inc., Berkeley Div.

Bryant Computer Products, Div. of Ex-Cell-O Corp. -- see M2 and S4

Cadre Industries Corp. -- see C2

California Instruments Corp.

Consolidated Electrodynamics Corp.

Control Data Corporation

DI/AN Controls, Inc.

Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / D-C amplifiers / DESCR: chopper-stabilized with 10kc bandwidth and drift less than 30 μv/day. Balance amplifier gives years of trouble-free operation / USE: all inputs and outputs available at patchbay / on request / A3

Electro Instruments, Inc., 8611 Bal- dian Laboratories, Inc., 611

Control Data Corporation

Cleveland Div., General Computers, Inc., Electro Instruments, Inc., 8611 Bal
dian Laboratories, Inc., 611
Consolidated Electrodynamics Corp.

Houlott-Packard Co.

Librascope Div., General Precision, Inc., 800 Western Ave., Glendale 1, Calif. / miniature servo amplifi-
ers / DESCR: servo amplifiers in 2-watt, 4-watt, and 10-watt models / USE: for servomotors, size 5 to 1B and larger / $240 to $620 / A3

F. B. Mae Laren & Co., Inc.

Mace Corp. -- see A4

Maxson Electronics Corp.

Midwestern Instruments, Inc., 41st and Sheridan Rd., P.O. Box 7509,

Tulsa 10, Okla. / conventional and solid state amplifiers / DESCR: chopper stabilized, DC and carrier amplifiers, digital and analog magnetic tape amplifiers, servo system amplifiers / USE: full range of instrumentation applications / $100 to $2000 / A3

F. L. Moseley Co.

George A. Philbrick Researches, Inc.

Redmond-Fairchild Inc. -- see D1

Sperry Farragut Co., Div. of Sperry

Hand Corp.

Texas Instruments Inc., Apparatus Div., P.O. Box 6015, Dallas, Tex. / amplifiers / DESCR: broadband low noise parametric amplifiers capable of extremely high gain-bandwidth products for amplification through K6 band / - / A3

The Walkirt Co.

A4. MAGNETIC AMPLIFIERS

Airpax Electronics, Inc.

Dresser Electronics, SIE Div., a di-

vision of Dresser Industries, Inc.

Feedback Controls, Inc.

Gulton Industries, Inc.

Hagan Chemicals & Controls, Inc.

Hagan Industries

MACE CORP., 900 N.E. 13th St., Fort Lauderdale, Fla. / SOLID STATE AMPLIFIER DIVISION OF UPIFIRE INSULATORS / DESCR: complete variety of magnetic amplifiers, electromechanical devices / USE: complete variety magnetic amplifiers. Other solid state, servo-, and power amplifiers; magnetic readout devices, relays, frequency detectors, and focusing devices; electro-mechanical assemblies, SCR control magnetos / USE: all types of amplification, servo drives, readout devices, relays, frequency detection, power supplies, instrumentation and control / $19 to $50,000 / A4

Midwestern Instruments, Inc. -- see A3

Pacific Magnetic Corp., Electronic Center, Ranolalnd, Calif. / magnetic amplifiers / DESCR: made in various sizes up to 1KVA for applications such as control of servomechanisms, voltage and current regulators, instrumentation (transducers) speed controllers, and malfunction detection / USE: industrial and military applications such as Titan Ground Support Equipment and ATLAS Abort Sensing Instrumentation System (ASIS) / $20 to $300 / A4

Polyphase Instrument Co.

Potter Instrument Co., Inc.

Sanbago Electric Co., Power North 11th St., Springfield, Ill. / inductive components / DESCR: great variety of pulse and power transformers, power supplies, magnetic amplifiers, toroidal inductors, band pass filters, low pass filters and packaged networks / - / A4

A5. AUTOMATIC ASSEMBLY EQUIPMENT

Cadre Industries Corp., 20 Valley St., Endwell, N.Y. / automatic shield stripper / DESCR: automatic shield stripper designed to strip braided wire shielding from coaxial cables, shielded wires, etc. at high production rates. Vital in areas where low signal integrity required / USE: operated by foot switch / $1295, or rental / A5

General Mills Electronics Group

Some Scientific Data Systems, Inc. -- see C24

A6. AUTOMATIC CONTROL EQUIPMENT

American Research and Manufacturing Corp.

Assembly Producer Inc.

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio / Bailey 760 Digital Control System / DESCR: control system composed of standardized solid-state modules / USE: to automatically control a plant or process / - / A6

Beckman Instruments, Inc.

Beckman Instruments, Inc., Berkeley Div.

The Bendix Corp., Eclipse-Pioneer Div. -- see A7

Consolidated Electrodynamics Corp.

Control Logic Inc.

Dresser Electronics, SIE Div., a di-

vision of Dresser Industries, Inc.

Electro Instruments, Inc. -- see A3

The Electro Nuclear Systems Corp.

The English Electric Co., Ltd., Eng-

lish Electric House -- see D1

Ferranti-Packard Electric Ltd., Elec-

tronic Div., Data Systems Dept. -- see C32

Fiorini Controls Corp.

Gilmore Industries, Inc.

Hagan Chemicals & Controls, Inc., Rte. 60 & Campbell's Run Rd., Pittsburgh 30, Pa. / Hagan "Optimal Indicat-
ing Controller" / DESCR: all solidstate, electronic, with control station forward and analog controller plugged in behind. Set point accuracy 0.25%. Power required is 117v 60 cycle regulated AC / USE: controls variables such as tempera-
ture, pressure or flow / $500 for 2 mode controller, $565 for 3 mode unit / A6

Image Instruments, Inc., 2300 Washington St., Newton Lower Falls 62,
Mass. / electro-visual devices / DESCRI: machines which perform automatic inspection, comparison, and recognition. Developed by application of electronic and optical techniques of television and methods of information processing / USE: quality control in process manufacturing, photogrammetric image rectification, and imagery analysis / - / A6

Industrial Electronics Corp., 650 Ackerman Rd., Columbus 2, Ohio / Accu-Ray Process Control Systems / DESCRI: systems for the precise measurement and automatic control of flowing processes / USE: paper industry; weight and moisture; metals: strip thickness; plastics: film thickness, data reduction, readout; process industries: fluids in pipes, tank, bin container / $500 to $25,000 / A6

Kidde Ultrasonic and Detection Alarms Div., Walter Kidde & Co., Inc.

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see C2

Litton Systems Inc., Data Systems Div. / Maxxon Electronics Corp.

Mog Servocontrols, Inc.

Nortronics, a div. of Northrop Corp., Systems Support Dept.

O-Line Scientific Data Systems, Inc. -- see C6

Scientific Data Systems, Inc. -- see C2

Societe D'Electronique Et D'Automatisme

Strand Engineering Co.

Testo Laboratories, Inc.

Westinghouse Electric Corp., Air Arm Div., P.O. Box 746, Baltimore 3, Md. / development and manufacture of data processing and control systems and equipment / DESCRI: analysis, specification, development and manufacture of high, medium and low speed digital, analog and hybrid data processing and control systems, subsystems and major components. Modular (functional electronic block) microelectronic circuit techniques are featured / USE: military, air, space and missile applications / $50,000 to multimillion (per application and customer order) / A6

A7. AUTOMATIC TEST EQUIPMENT

Beckman Instruments, Inc.

The Bendix Corp., Eclipse-Pioneer Div., Teterboro, N.J. / Bendix Electronic Systems Tester / DESCRI: universal, automatic programmer-computer for the checkout of any complex weapons system. For use at any level of maintenance; reduces checkout to minutes / USE: airborne, land or sea vehicles / quotations furnished / A7

Cybertronics, Inc. -- see T11.1

DIT-MCO, Electronics Div.

Electro Instruments, Inc. -- see A3

Gianinni Controllori Corp.

Hathaway Instruments Inc., Hewlett-Packard Co.

Ima Industries

Products and Services

Librascope Div., General Precision, Inc., 800 Western Ave., Glendale 1, Calif. / Decision Master / DESCRI: component reliability-testing device. Can test 1800 components for up to 10 parameters per hour / USE: semiconductor and small electronic parts testing / $20,000 to $30,000 / A7

Non-Linear Systems, Inc.

Scientific Data Systems, Inc. -- see C2

B1. BOARDS, PLOTTING

Electro Instruments, Inc. -- see A3

Maxxon Electronics Corp.

Sunshine Scientific Instruments, 1810 Grant Ave., Philadelphia 15, Pa. / testing and measuring instruments / DESCRI: manufacturer of testing and measuring instruments, Distributing panel meters, test equipment. Modification, calibration, certification, special meters and dials, prototype engineering custom design, subcontract facility / - / A7

B2. BOARDS, PLUG

Cybertronics, Inc. -- see T11.1

Westgate Laboratory, Inc. -- see B1

B2A. BOARDS, PRINTED CIRCUIT

Beckman Instruments, Inc.

Glench Manufacturing Corp.

Consolidated Systems Corp.

Corning Electronic Components, Corning Glass Works

Gulton Industries, Inc.

Hathaway Instruments Inc.

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see C14

Monroe Industries, Inc. -- see V1

Scientific Data Systems, Inc. -- see C12

Techniques Inc.

Westgate Laboratory, Inc. -- see B1

B3. BOARDS, STRIP TYPE

B4. BOBBINS, COIL WINDING

Alden Products Co.
Products and Services
for missile guidance systems / USE:
in operational amplifiers / $3 to $70 / C4
Sprague Electric Co.

Dominion Mfg. Co., Machines Systems Div. -- see C6
N. V. Electrologica

E-Z Sort Systems, Ltd.
National Physical Laboratory, Mathematics Div.

Alden Products Co.

C.4. CAPACITORS (COMPUTER TYPES)

Aerovox Corp.

American Lava Corp., Manufacturers Rd., Chattanooga 5, Tenn. / capacitors, miniature / DESC: miniature ceramic capacitors designed for general and special purpose applications in networks, computer modules, or military equipment.

Technical ceramic substrates produced for computer module manufacture / - / - / C4
Arnold Ceramics, Inc., 1 E. 57th St., New York 22, N.Y. / stemag and RESISTA electronic components / DESC: electrolytic and mylar capacitors; ceramic trimmer capacitors / - / $5 to $5 / C4
Astron Corp., 255 Grant Ave., E. Newark, N.J. / fixed capacitors and R.F. interference noise suppression filters / DESC: manufacture the following capacitors: electrolytic, metallized mylar, metallized paper, mylar, paper, solid tantalum, R.F. interference filters; ceramics (manufactured by subsidiary Skottke Electronics) / USE: electronic circuits / wide price range / C4
Condenser Products Co.

Cornell-Dubilier Electronics, div. of Federal Pacific Electric Co.

Corning Electronic Components, Corning Glass Works

General Electric Co., Electronic Speciality Capacitor Product Section

Gulton Industries, Inc.

Hughes Semiconductor Division

P. R. Mallory & Co., Inc.

Plastic Capacitors, Inc.

Southern Electronics Corp., 150 W. Cypress Ave., Burbank, Calif. / capacitors / DESC: adjustable Polystyrene and other close tolerance capacitors for analog computer. Special computer capacitors

C6. CARDS, PUNCH

C7. CARDS, MAGNETIC

C8. CHASSIS, METAL

C9. CIRCUITS, ARITHMETICAL (FOR DIGITAL COMPUTERS)

Andersen Laboratories Inc.

Beckman Instruments, Inc. CENTRALAB (The Electronics Div. of Globe-Union Inc.), 900 E. Keefe Ave., Milwaukee 1, Wis. / electronic components / DESC: packaged circuits / USE: as basic components to circuits / varies / C9

General Motors Corp. -- see C26 Delco Radio Div., General Motors Corp. -- see C10

The Electro Nuclear Systems Corp.

Harmo-Kardon Inc., Data Systems Division -- see C26

Imms Industries

Navigation Computer Corp. -- see C24A Raytheon Co., Communications and Data Processing Operation, 1415 Boston-Providence Turnpike, Norwood, Mass. / digital modules, high speed / DESC: complete line of digital logic modules for up to megacycles speed. Line includes complete accessories / USE: facilitates digital circuit designs and programming / $50 to $400 / C9


Texas Instruments Inc. -- see C26

C10. CIRCUITS, COMPUTER, PACKAGED

Alden Products Co.

American Bosch Arma Corp.

Andersen Laboratories Inc. CENTRALAB (The Electronics Div. of Globe-Union Inc.) -- see C9

Computer Control Co., Inc.

Computer Logic Corp., 11000 W. Olympic Blvd., Los Angeles 64, Calif. / LOGIC-LAB / DESC: two series of ready-to-use 300 Kc or 3 Kc units; includes logic, storage, shift, or display units. Each LOGIC-LAB has removable program board and patch cards / USE: user patches own applications in simulation, test gear, teaching, or computing / $650 to $3240 / C10

Cornell-Dubilier Electronics, div. of Federal Pacific Electric Co.

Delco Radio Div., General Motors Corp., 700 E. Firmin St., Kokomo, Ind. / Delco Radio Digital Circuits (modules and cards) / DESC: two series of cards and three series of modules, speeds to 10 megacycles / USE: any digital requirement / $12 to $75 / C10

Electropac, Inc.

Enginereed Electronics Co., 1441 E. Chestnut Ave., Santa Ana, Calif. / G-Series Extended Service Digital Modules / DESC: digital circuits on cards for operations up to 10 Mc / USE: synchronous or asynchronous digital systems / $16.75 to $119 / C10

Fairchild Semiconductor, 545 Whisman Rd., Mountain View, Calif. / circuits / DESC: manufacture of silicon semiconductor products for computer logic circuits, both military and industrial grades. Microelectronic integrated circuits / USE: components for logic circuits: switches, gates, flip-flops, etc. / varies / C10


Harmon-Kardon Inc., Data Systems Div. -- see C26 Hughes Semiconductor Corp., Data Systems Div. -- see C26

Raytheon Co., Communications and Data Processing Operation -- see C9

Raytheon Co., Semiconductor Div.

Servomechanisms/Inc. -- see C9

Sperry Rand Corp.

Sprague Electric Co.

Texas Instruments Inc. -- see C26

Transitron Electronic Sales Corp.

C11. CIRCUITS, LOGICAL (FOR DIGITAL COMPUTERS)

Andersen Laboratories Inc.

Beckman Instruments, Inc. -- see C49

Bryant Computer Products, Div. of Ex-Cell-O Corp. -- see M2 and S4

Budd Electronics CENTRALAB (The Electronics Div. of Globe-Union Inc.) -- see C9

Consolidated Avionics Corp.

Dale Electronics, Inc.

Delco Radio Div., General Motors Corp. -- see C10

DI/AN Controls, Inc., 944 Dorchester Ave., Boston 25, Mass. / PICO-BIT /
Electroplex, Inc., 120 West 131 St., Los Angeles 61, Calif. / DIGITAL PLUG-IN CIRCUIT MODULES (WELDED OR SOLDELETED) AND DIGITAL SYSTEMS / DESCR: digital modules 250 KC and 5 MC; equipment power supplies; welded electronic modules; functional digital equipment; custom circuit design / USE: in all types of digital equipment / - / C11

Engineered Electronics Co., 1441 E. Chestnut Ave., Santa Ana, Calif. / U-Series Universal NOR Circuit Modules / DESCR: welded encapsulated digital circuit modules / USE: 1 to 8 stages of logic systems; can be used to form active circuits / $6.60 to $24.00 / C11

Epco Inc., 275 Massachusetts Ave., Cambridge 39, Mass. / 1 and 5 megacycle digital circuit cards / DESCR: 10 basic low cost circuit cards serving virtually all system needs, simplified logic design, military reliability, rugged constitution / - / $63 to $99.50 / C11

Fairchild Semiconductor -- see C10
General Electric Co., Specialty Devices Operation

Gulton Industries, Inc.


Harman-Kardon, Inc., Data Systems Div. -- see B6 and C26

Harvey-Wells, Electronics, Inc. -- see C24

Im Industries

LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / logical circuits / DESCR: complete line of circuit building blocks; low power consumption coupled with high component and modular packing densities / USE: in digital systems / - / C11


Navitronics Corp. -- see C24A

Raytheon Co., Communications and Data Processing Operation -- see C9

Scientific Data Systems, Inc. -- see C12

Servomechanisms/Inc. -- see C9

Products and Services

Sprague Electric Co.
Texas Instruments Inc. -- see C26

C12. CIRCUITS, PLUG-IN

Amplifier Corp. of America, 390 Broadway, New York 13, N.Y. / plug-in circuits / DESCR: transistORIZED plug-in boards, including amplifiers, oscillators, etc., for every requirement / C12

Beckman Instruments, Inc.
Bryant Computer Products, Div. of Ex-Cell-O Corp. -- see M2 and S4

Centralab (The Electronics Div. of Globe-Union Inc.) -- see C9

Computer Logic Corp., 11000 W. Olympic Blvd., Los Angeles 64, Calif. / logic cards and systems / DESCR: complete line of 300 KC, 5 MC, and 10 MC plug-in logic cards; many analog cards; all 4 5/0 x 3 3/1; drivers, gates, power etc. / USE: user or CLC assembles parts to make custom systems / $13.50 to $350 (various components) / C12

Delco Radio Div., General Motors Corp. -- see C10

DI/AN Controls, Inc.


Engineered Electronics Co., n/a / T-Series Circuit Modules / DESCR: over 100 different germanium-transistor digital plug-in circuit modules / USE: synchronous or asynchronous digital systems / $5 to $40 / C12

Fairchild Semiconductor -- see C10

General Dynamics/Electronics

Harmon-Kardon Inc., Data Systems Div., 1830 S. 51th Ave., Chicago 50, Ill. / InterconCircuit / DESCR: printed circuits on any substrate, special process permits conductors to extend beyond substrate or be bent into tabs vertical to the substrate / USE: for laminated circuits / estimate made for each new design / C14

Beckman Instruments, Inc.
Bryant Computer Products, Div. of Ex-Cell-O Corp. -- see M2 and S4

Centralab (The Electronics Div. of Globe-Union Inc.) -- see C9

Delco Radio Div., General Motors Corp. -- see C10

The Electro Nuclear Systems Corp.

Gulton Industries, Inc.

Harmon-Kardon Inc., Data Systems Div. -- see C26

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc., 905 Commonwealth Ave., Boston 15, Mass. / printed circuit boards / DESCR: any standard or special base, any type of copper plating and all forms of finishes / - / C14

Magne-Head Div., General Instrument Corp.

Monroe Industries, Inc. -- see V1

Raytheon Co., Communications and Data Processing Operation -- see C9

Scientific Data Systems, Inc. -- see C12

Sperry Farragut Co., Div. of Sperry Rand Corp.

Sprague Electric Co.

Superex Electronics Corp.

Techniques Inc.

Texas Instruments Inc. -- see C26

C13. CIRCUITS, POTTED

Centralab (The Electronics Div. of Globe-Union Inc.) -- see C9

Delco Radio Div., General Motors Corp. -- see C10

Electroplex, Inc.

General Dynamics/Electronics

Harmon-Kardon Inc., Data Systems Division -- see C26

Navigation Computer Corp. -- see C24A

Polyphase Instrument Co.

Raytheon Co., Semiconductor Div.

Servomechanisms/Inc. -- see C9

Texas Instruments Inc. -- see C26

C14. CIRCUITS, PRINTED

Amphecon Connector Div., Amphecon-Borg Electronics Corp., 1030 S. 54th Ave., Chicago 50, Ill. / InterconCircuit / DESCR: printed circuits on any substrate, special process permits conductors to extend beyond substrate or be bent into tabs vertical to the substrate / USE: for laminated circuits / estimate made for each new design / C14

Beckman Instruments, Inc.

Bryant Computer Products, Div. of Ex-Cell-O Corp. -- see M2 and S4

Centralab (The Electronics Div. of Globe-Union Inc.) -- see C9

Delco Radio Div., General Motors Corp. -- see C10

The Electro Nuclear Systems Corp.

Gulton Industries, Inc.

Harmon-Kardon Inc., Data Systems Div. -- see C26

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc., 905 Commonwealth Ave., Boston 15, Mass. / printed circuit boards / DESCR: any standard or special base, any type of copper plating and all forms of finishes / - / C14

Magne-Head Div., General Instrument Corp.

Monroe Industries, Inc. -- see V1

Raytheon Co., Communications and Data Processing Operation -- see C9

Scientific Data Systems, Inc. -- see C12

Sperry Farragut Co., Div. of Sperry Rand Corp.

Sprague Electric Co.

Superex Electronics Corp.

Techniques Inc.

Texas Instruments Inc. -- see C26

C15. CLUTCHES

Clifton Precision Products Co., Inc.

C16. CLUTCHES, MAGNETIC

ACF Electronics Div., ACF Industries Inc.

Reeves Instrument Corp.

C17. COATINGS

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C18. COATINGS, CONDUCTIVE

Acheson Colloids Co., a div. of Acheson Industries, Inc.

C19. COATINGS, PROTECTIVE

Acheson Colloids Co., a div. of Acheson Industries, Inc.
Monroe Industries, Inc. -- see V1

C20. COATINGS, SALTS SPRAY RESISTANT

C21. COILS (COMPUTER TYPES)

El-Rad Manufacturing Co., 4300 N. California Ave., Chicago 10, Ill. / coils / DESCR: air core and toroidal coils for isolation and resonant applications / USE: pulse isolation; tuning / $1.50 and up / C21

Hathaway Instruments Inc.
Pacific Magnetic Corp.
Phyphase Instrument Co.
Sperry Farragut Co., Div. of Sperry Rand Corp.
Superex Electronics Corp.
Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc.
Value Instruments, Inc., 13214 Crenshaw Blvd., Gardena, Calif. / coils / DESCR: electromagnetic minature / $0.50 to $5 / C21

C22. COMMUNICATIONS SYSTEMS (COMPUTER TYPES)

ACF Electronics Div., ACF Industries Inc., 48 Lafayette St., Riverdale, Md. / digital data transmission equipment / DESCR: modular system; has asynchronous-to-synchronous multiplex equipment as input device to data modem; multiplex equipment accepts all forms of digital signals; serializes into synchronous stream for transmission through data modem over standard Class 4a telephone lines / USE: transmission of data over wire lines / $7000 to $25,000 / C22

American Telephone and Telegraph Co. and Associated Bell System Telephone Companies, (Hq.) 195 Broadway, New York 7, N.Y. / DATA-PHONE Data Sets / DESCR: data terminals which connect compatible business machines to the telephone network or leased lines / USE: provide serial or parallel transmission of data, digital or analog, at speeds up to 2400 bps / monthly rental from $5 and up / C22

American Telephone and Telegraph Co. and Associated Bell System Telephone Companies, *a / high speed data service (TELPAK) / DESCR: data terminals and circuits especially designed to transmit digital data (up to 500,000 bps) or facsimile signals (up to 8 (80x11) pages per minute) / USE: transmission of high speed data / price varies with terminal facilities

Products and Services

and distance of service provided / C22

Cadre Industries Corp., -- see C2

Collins Industries Corp., Information Science Center
Delco Radio Div., General Motors Corp.
Digi-Data Div., 3214 Albertson Ave., Albertson, L.I., N.Y. / Digi-Data Dial-O-Verter system / DESCR: transmits data over telephone lines at high speed, complete with verification. Features punched card and magnetic tape terminals. Interchangeable media: paper tape, magnetic tape, etc. / USE: to transmit computer and administrative data / $130 to $1245 a month, rental / C22

Ferranti Electric, Inc.
Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / Friden Teledata / DESCR: transmitter-receiver for 5-, 6-, 7-, or 8-channel paper tape. Parity check for accuracy. Compatible with Data-Phone / USE: data communications / - / C22

Friden, Inc., *a / Friden Dual Teledata / DESCR: transmitter-receiver for 5-, 6-, 7-, or 8-channel paper tape. Transmits alternately over two transmission channels to double normal speed. Parity check for accuracy / USE: data communications / - / C22

Friden, Inc., *a / Friden Teledata Switching Control Unit / DESCR: regulates two-way Teledata transmission in multi-station hookups; signals data to be transmitted, selects receiving station, isolates malfunctions or line faults / USE: data communications / - / C22

Friden, Inc., *a / Friden Collectdata-30 System / DESCR: advanced data collection system. Transmitters spotted throughout plant send data over common cable to central receiver which punches tape with automatic time-code entry. Variety of transmitting units for individual requirements: punched card, dual punched ID badge, combination card-badge. Special accuracy checks / USE: collects data in punched tape form for preparation of management reports; attendance recording / - / C22

Friden, Inc., *a / Friden Collectdata-30 System / DESCR: special Friden Flexowriters with 3- or 4-bank keyboards and 5-, or 8-channel punched tape facilities; prepare original document and punched card for transmission / USE: data communications / - / C22

General Electric Communication Products, Mountain View Rd., Lynchburg, Va. / TDS-90 Data Communication Terminal / DESCR: links major computer centers with remote locations; replaces single tape unit at each computer terminal. Transmitted data is fed directly through the TDS-90 into central or remote computer facilities / USE: provides quick access to one central data processing facility from many locations / price dependent on complexity of installation / C22

The Hallicrafters Co., 4401 W. 5th Ave., Chicago 24, Ill. / data communication equipment / series of data modems (modulators - demodulators) permitting communications of up to 400 bps over voice type communication channels. Units employ data coding, phase reversal modulation / - / $5000 to $6600 / C22

Img Industries, remote

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N.Y. / IBM 1009 Data Transmission Unit / DESCR: for IBM 1401, or computer system having 1414 1/0 control, for transmission and reception of data via communication lines. For use with another 1009, or 7701, 7702, 1013 or 7750 units; speeds to 300 cps. / USE: allows computer to serve as data receiving, sending terminal / Price: 1009 adapter feature for 1401: $100 monthly rental; $3750 purchase price. 1009 adapter feature for 1414: $200 monthly rental; $11,000 purchase price. 1009: $500 monthly rental; $2,400 purchase price. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 7750 programmed transmission control / DESCR: unit links centrally-located computer with large network of communication lines and terminals. For use with 1410, 7040, 7044, 7070, 7074, 7090, 7095 and/or computers to facilitate creation of IBM Teleprocessing systems / Typical 7750: monthly rental $9600; selling price $553,000. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 1001 Data Transmission System / DESCR: transmits information from punched cards and/or keyboard via telephone lines to a central location where it is reproduced in punched card form / USE: for low cost data transmission from remote locations / Prices: Terminal: $15-23 monthly rental; $575-900 purchase price. Receiving station: $90-115 monthly rental; $4250-5925 purchase price. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 1013 card transmission terminal / DESCR: transmits from punched cards over leased communications lines at 300 characters/second to 7701, 7702 terminals, other punched card terminals, 1401 or 1410 terminal equipped with 1009 data transmission terminal or a 7750 / Prices: Monthly rental: $890; selling price: $44,000. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 7701 Magnetic Tape Transmission Terminal / DESCR: transmits information to another 7701, a 7702 terminal, a 1013 card transmission terminal, or a computer equipped with a 1009 or 7750. Transmission over telephone or high-speed telegraph lines at 75
or 150 characters/second / USE: rapid transmission of data from remote locations / Monthly rental / C22

International Business Machines Corp., Data Processing Div., *a / IBM 7902 magnetic tape transmission terminal / DESCR: faster version of the 7701, transmits data from magnetic tape to another 7702 terminal, 7701 magnetic tape terminal, 1013 transmission terminal, or computer equipped with 1009 or 7750. Speed over leased communications lines to 300 characters/second / Monthly rental / C22:

- Basic rental of $20; purchase price, $725. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 372 manual data recorder. DESCR: records data on punched card on reels, provides information to IBM 351, 352, 355, 356 consoles, and 3200 units. Monthly rental / C22:

- Basic rental of $150; selling price, $58,000. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / Digital Subset Feature for the IBM data transceiver / DESCR: allows IBM data transceiver to send punched card data over dial telephone or high-speed telegraph lines to another similarly-equipped transceiver that automatically reproduces information / USE: transmission of data from remote locations / Monthly rental / C22:

- Basic rental of $7; purchase price, $725. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 66 Data Transceiver (non-printing) and IBM 66 Data Transceiver (printing) / DESCR: permits the transmission and reception of data from punched cards over leased telephone lines or telegraph lines / USE: to transmit and receive data at remote locations / Prices: 65 data transceiver and control unit: monthly rental / C22:

- Basic rental of $115; selling price, $7650. IBM 66 data transceiver (printing): monthly rental / C22:

- Basic rental of $165; selling price, $9050. All prices exclusive of tax / C22

International Business Machines Corp., Data Processing Div., *a / IBM 357 data collection system / DESCR: an in-plant network of electronic reporting stations cable linked to a data recording station where information is automatically reproduced as punched cards / USE: to produce machine-readable information for management reports / Prices -

- Input stations (up to 20 per output station): 357 card badge reader monthly rental / C22:

- Basic rental of $29 to $47, selling price / C22:

- $1075 to $1990. 372 manual entry monthly rental / C22:

- Basic rental of $14 to $20, selling price, $600 to $800. Output station: 350 input control monthly rental / C22:

- Basic rental of $79, selling price, $2915. 24/26 card punch monthly rental / C22:

- Basic rental of $62 to $97, selling price, $3200 to $4075. All prices exclusive of tax / C22

Invacorp

ITT FEDERAL LABORATORIES, A DIV. OF INTERNATIONAL TEL. AND TEL. CORP., 500 Washington Ave., Nutley 10, N.J. / DESCR: the ITT-025 is a general-purpose, stored program data processor which efficiently handles the processing of data from a large number of inputs and to a large number of outputs (256 totals). This system employs magnetic core (65 K words), magnetic tape (10 tape units) and drum systems (262 K words) / USE: applicable to store and forward communications data processing system, simulator systems, process control systems, retrieval systems, etc. / C22

ITT Information Systems Div., 320 Park Ave., New York 22, N.Y. / ITT 7300 ADV System / DESCR: ITT 7300 ADV System is a telegraph and data switching system employing computer techniques to relay intelligence in various speeds, codes and formats / USE: message data switching and control system / C22:

- Basic rental / C22:

- Basic rental of $3 million / C22

Litton Systems Inc., Guidance & Control Systems Div., 5500 Canoga Ave., Woodland Hills, Calif. / LC-900 / DESCR: system combines DAA and two-address G.P. airborne, real-time computer into fully transistORIZED aerospace navigation system / USE: computer supplies outputs for vehicle automatic control and for flight data display applicable to both manned and unmanned, high performance vehicles capable of atmospheric flight, exit from the atmosphere, and atmosphere re-entry / C22


- Basic rental / C22:

- Basic rental of $7650, IBM 66 data transceiver (printing): monthly rental / C22:

- Basic rental of $175; selling price, $9050. All prices exclusive of tax / C22

Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc. Tally Register Corp. 3330 Merceur St., Seattle 9, Wash. / data communications systems / DESCR: transmits and receives data over standard dial-up telephone lines, asynchronous, at 75-750 words/minute. Bell 402 Parallel Data-phone is used. Error detection and block delete codes can be utilized, with parity checking / USE: data link from test plant to computer / C22:

The Teletype Corp.

Teletype Corp.

C22A. COMPUTERS

American Hydromath Corp.

Bockman Instruments, Inc.


Bendix G-15 computer system / DESCR: 2176-word memory drum, alphanumeric electric type-printer, paper tape punch, photovoltaic electro tape reader, magnetic tape unit, punched card adapter, universal code accessory, digital differential analyzer, graph plotters / USE: general purpose / C22:

- Basic rental / C22:

- Basic rental of $102,950 to $102,950. C22A


Bendix G-20 computer system / DESCR: 2176-word memory, control console, data communicator, paper tape and punched card accessories, magnetic tape units, disk memory, control buffer, 120-character line printer, auxiliary memory modules / USE: general purpose / C22:

- Basic rental / C22:

- Basic rental of $1,500,000 to $1,500,000. C22A


Bendix G-21 computer system / DESCR: multiple G-20 units, up to 3 central processors, true parallel processing operation; up to 57,344 words of system-common core memory, total 81,920 words high-speed memory / USE: special military purpose / C22:

- Basic rental / C22:

- Basic rental of $1,250,000 to $3,500,000. C22A

Clary Corp., 408 Junipero St., San Gabriel, Calif. / Clary DE-60 Computer / DESCR: solid state digital computer for engineering, scientific, research and other mathematical applications / Available in desk or as small mobile unit / USE: for solving mathematical problems / C22:

- Basic rental / C22:

- Basic rental of $20,000. C22A

Control Data Corporation Datamation Inc.

Delco Radio Div., General Motors Corp. -- see C24

Digital Service Labs

Douglas Aircraft Co., Inc., Douglas Computing Service

Electropac, Inc.


Epco, Inc. -- see C24

Ferranti Electric, Inc.

The Fordham Co.

General Dynamics/Electronics Computing Div.

General Dynamics/Electronics Radiations Incorporated

Deckman Instruments, Inc.

Electronico, Inc.


Elliott Systems Div.

Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc. Tally Register Corp. 3330 Merceur St., Seattle 9, Wash. / data communications systems / DESCR: transmits and receives data over standard dial-up telephone lines, asynchronous, at 730-750 words/minute. Bell 402 Parallel Data-phone is used. Error detection and block delete codes can be utilized, with parity checking / USE: data link from test plant to computer / C22:

The Teletype Corp.

Teletype Corp.
and hybrid computers and character readers / DESCR: special purpose computers for simulation and process control and optical character reader for data processing / - / prices on request / C22A

Lifton Systems, Inc., Guidance & Control Systems Division -- see C22, C24, C24A

Maxxon Electronics Corp.

Nortronics, a div. of Northrop Corp., Electronics Systems & Equipment

Philco Corp., a subsidiary of Ford Motor Co., Computer Div., 3900 Welsh Rd., Willow Grove, Pa. / BASICPAt/ DESCR: military and mobile, medium to high speed, general purpose data processor with paper tape and magnetic tape input/output / USE: military real-time command and control applications / $350,000 and up, reduced price for quantities / C22A

Philco Corp., a subsidiary of Ford Motor Co., Computer Div. -- see C24

Radio Corp. of America, Electronic Data Processing

Scientific Data Systems, Inc. -- see C24

Sylvania Electronic Systems

UNIVAC Military Operations of Sperry Rand Corp.

Westinghouse Electric Corp., Air Arm Div. -- see A6

C23. COMPUTERS, ANALOG

ACF Electronics Div., ACF Industries Inc.

AllResearch Mfg. Co. of Arizona, a div. of The Garrett Corp.

American Bosch Arma Corp.

American Hydromech Corp., 24-20 Jackson Ave., Long Island City 1, N.Y. / Stabilogauge, draft and stress computers / DESCR: portable mechanical analog computer / USE: problems in ship stability, stress, draft fore and aft / $5000 / C23

Andersen Laboratories Inc.

Applied Dynamics, Inc., 2275 Platt Rd., Box 612, Ann Arbor, Mich. / electronic analog computers / DESCR: desk top and console model general purpose electronic analog computers from 4 operational amplifiers to 120 amplifiers per cabinet including non-linear components / USE: research, simulation, dynamic data processing and teaching / $1500 to $15,000 / C23

AREBN Div. of All American Engineering Co. -- see C24A

Atlas Precision Products Co. Div. of Prudential Industries, Inc.

Automation Management, Inc., P.O. Box 217, Westboro 9S, Mass. / PerK 1, PerK II, Longford and Computor / DESCR: PerK I records actual production rate as a per cent of standard performance minute by minute, PerK II records per cent averaged from beginning and optional DESCR / USE: sensor is attached to office or factory machine to sense units produced or machine cycles. Rate of impulses is compared to standard and recorded on a chart in PerK / $950 to $490 / C23

Beckman Instruments, Inc.

Berkeley Div. in use for American Instruments, Inc., 2200 Wright Ave., Richmond, Calif. / EASE® Analog Computers / DESCR: new general purpose 2100 Series feature iterative or non-iterative operation. Systems include pinboard programming; digital control systems; IDACON TM plug-in module for conversion to iterative & non-iterative use; IDAD TM mobile display console; operational amplifiers; function generators; computing resistors, capacitors in oven; electronic multipliers, resolvers. Portable, stand alone model. Designed (Model 620) is part of a series of separately packaged analog components / USE: for simulation, optimization, and process control / $20,000 to $225,000 / C23

COMCOR, Inc.

Computer Engineering Associates, an affiliate of Susquehanna Sciences, Inc., 350 N. 4th St., Newton, 64, Mass. / Direct Analog Computer, Engineering Analysis Lab / DESCR: manufacture and sell passive element direct analog computers, Maintain Engineering Analysis Lab specializing in complex structural analysis on a consultant basis / USE: dynamic and static structural analysis / $100,000 and $1,000,000 / C23

DI/AN Controls, Inc.

Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / analog computers / DESCR: complete line of high precision analogbons (and analog special purpose / USE: simulate physical systems; solve mathematical problems in science and engineering / on request / C20

Dresser Electronics, SIE Div., a division of Dresser Industries, Inc., Pasadena, Calif. -- see C24

The English Electric Co., Ltd., Colindale, Middlesex / ENI, Ensign, and Feedback Controls, Inc. / USE: D1 Feedback Controls, Inc.

General Computers, Inc. -- see G1

General Computers, Inc. -- see G3

General Dynamics/Astronautics a Div. of General Dynamics Corp.

General Dynamics/Electronics


GPS Instrument Co., Inc., 180 Needham St., Newton 64, Mass. / compressed-time computers / DESCR: high-speed, high-accuracy repetitive analog computers, statistical and iterative types; computer center and services rental; computer components, function and noise generators, multiplier/divider, etc. / USE: general purpose dynamic analyses / $25,000 to $150,000 / C23

Hallamore Electronics Division of the Siegler Corp.

Heath Co., subsidiary of Daystrom Inc.

Im Industries

**See Addendum, page 151**

Librascope Div., General Precision, Inc., 800 Western Ave., Glendale 1, Calif. / analog computer systems / DESCR: analog computers and associated equipment for Navy ASW-weapon fire control systems; fire control elements for Polaris fire control system / - / C23

Link Div., General Precision, Inc. -- see C22A

Lockheed Electronics Co.

Loral Electronics Corp., P. B. Mallory, Inc., see C30

Mauchly Associates Inc. -- see C30

The Perkin-Elmer Corp.

George A. Philbrick Researches, Inc.

Reeves Instrument Corp.

Sarance D'Automatisme

Sperry Farragut Co., Div. of Sperry Rand Corp.

Sperry Gyroscope Co., Div. of Sperry Rand Corp.

Sylvania Electronic Systems

Westinghouse Electric Corp., Air Arm Div.

Westinghouse Electric Corp., Research & Development Center

C24. COMPUTERS, DIGITAL

Advanced Scientific Instruments, 5249 Hanson Ct., Minneapolis 22, Minn. / ASI-210 Computer / DESCR: general purpose "desk top" computer for scientific and engineering simulation, data handling, process and systems control. It can communicate directly with other ASI computers / USE: general purpose / C24

Advanced Scientific Instruments, *a/ ASI-420 Computer / DESCR: general purpose computer for scientific and engineering simulation, data handling, process control and system analysis; a medium scale computer; design has been programmer influenced / USE: general purpose / C24

Advanced Scientific Instruments, *a / ASI Advance II Computer / DESCR: large scale general purpose computer with reliability, speed and relatively low cost. Programmer influenced in design / USE: for scientific and engineering applications, data handling and process control -- general purpose / C24

American Bosch Arma Corp.

Andersen Laboratories Inc.

Automation Management, Inc. -- see C23

Autonomics Industrial Products, 3400 E. 70th St., Long Beach, Calif. / RECOMP II / DESCR: medium scale, general purpose, electronic digital computer for engineering, scientific and business applications. Fully transistorized construction, high-speed, large memory, easily programmable and operated. USE: engineering and scientific computation / $95,000 selling price / $2495 per month lease price / C24

Autonomics Industrial Products, *a / RECOMP III / DESCR: small-scale, general purpose electronic digital computer for engineering, scientific and business applications. Fully transistorized construction, high-speed, large memory, easily pro-
Burroughs Corporation, 6071 Second Ave., Detroit, Mich./ Burroughs 205 automatic digital computer and auxiliary electronic data processing machines / DESCR: 4000 words magnetic drum storage, 80 additional words quick-access drum storage; 10 punched card units and sign; paper tape, CARDATRON complete alphanumeric punch card operation, single or DATAFILE multiple magnetic tape units; range 400,000 to 2,000,000 words auxiliary storage per unit / USE: business applications, mathematical, scientific, engineering and scientific computations / - /

Burroughs Corporation, *a / Burroughs 220 automatic digital computer and auxiliary electronic data processing machines / DESCR: expanded magnetic core storage of 2000 to 10,000 computer words (10 decimal digits and sign); paper tape subsystem; CARDATRON full alphanumeric and special-character punched card subsystem; single and multiple DATAFILE magnetic tape subsystem (50,000,000 words auxiliary storage); high-speed printer, on-line or off-line operation, up to 1500 lines per minute; 93-command programming structure / USE: commercial applications, mathematical, scientific, engineering computation / $375,000 to $600,000 approx. or lease with option to buy / C24

Burroughs Corporation, *a / Burroughs 250 Electronic Data Processing System / DESCR: medium-scale, solid-state system which combines processing of punched cards, MICR documents and hand copy ledgers / USE: commercial applications; particularly suited for financial institutions / $225,000 to $385,000 / C24

Burroughs Corporation, *a / Burroughs 260 Electronic Data Processing System / DESCR: medium-scale, solid-state system, has high-speed processing of punched cards; capable of reading to 1600 cards/minute, punching 300 cards/minute and printing 700 lines/minute. Main magnetic core memory capacity, 4000 characters to 9600 / USE: commercial applications / $172,000 to $200,000 / C24

Burroughs Corporation, *a / B270 Electronic Data Processing System / DESCR: medium-scale solid-state system designed as high-speed punch card/magnetic tape processor with addressing memory; available for processing MICR documents in banking institutions / USE: commercial applications / $279,000 to $625,000 / C24

Dresser Electronics, SIE Div., a division of Dresser Industries, Inc. The Electro Nuclear Systems Corp. N. V. Electrologia, Stadhouwersplantse 214, The Hague, The Netherlands / X1-computer / DESCR: digital computer, high speed tape reader, input/output: punched tape, punched cards, magnetic tape, outputwriter, high speed printer, drum, transistorized magnetic core memory up to 32760 words / USE: commercial and scientific / N1. 550.000. -- to N1. 3,000.000 / C24

The English Electric Co., Ltd., English Electric House — see Di Epso, Inc., 275 Massachusetts Ave., Cambridge 39, Mass. / EPSCO Model 275 Controller-Processor / DESCR: electronic digital computer, automatically sequenced, stored programs, interval operating speeds, high speed reading/recording; magnetic tapes, automatic input data conversion, output data printing; analog, digital inputs/outputs / USE: real time control, scientific and business data processing, automatic checkout and data end up / C24

Ferranti Electric Inc. Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Dorchester, England / CANADA / GEMINI: solid-state, general purpose computer, built in peripheral control; 18,000 additions/second, 40% words of core storage; paper tape, card and tape writer input/output / USE: dual system for airline reservation, business data processing, scientific and general engineering / - / C24

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a / ATLAS / DESCR: large fast computer with single level addressable storage to over one million words. Addition time in floating point 1.3 μs, multiply time 3.6 μs. Wide variety of peripherals including cards, paper tape, printers, drums, magnetic tape. Eight magnetic tape transfers may occur simultaneously with operation of input and output equipment and computation / USE: scientific, research and data processing / $4,000,000 to $10,000,000 / C24

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a / ORION / DESCR: medium to large size computer. Core store 4096-32,768 words. Full time sharing system with inter-program protection. All peripheral transfers independent of central processor. No practical limit to numbers or types of peripheral equipment. Built in floating point hardware / USE: general purpose data control and scientific work / $900,000 to $2,000,000 / C24

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a / FPS000 / DESCR: digital GP information processing system. Time sharing parallel program execution computer, full program protection, internal and external in-
Products and Services

International Business Machines Corp., Data Processing Div., 1111 East Post Rd., White Plains, N.Y. / IBM RAMAC 305 (Random Access Method of Accounting and Control) / DESCRI: electronic data processing system offering access, within less than a second, to any one of up to 20-million characters stored in its magnetic memory / USE: continuous, or "in-line" accounting for all types of business / Selling price with punched card output, $1850 and up; with printed output, $2200 and up. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 604 Electronic Punching Unit / DESCRI: general purpose calculator consisting of 604 electronic calculating unit and 521 punching unit. Model 1 operates at 100 cpm; Model 2 at 50 cpm / USE: business and scientific problems / Selling price, Model 1 - $25,900; Model 2 - $330. All prices exclusive of tax / C24


International Business Machines Corp., Data Processing Div., *a / IBM 609 H-1 Calculator / DESCRI: advanced calculator identical to larger counterpart, the 609, in size, speed and general applications. Differs in number of program steps incorporated / USE: business and engineering problems / Monthly rental, $75 to $1099. Selling price, $36,000 to $50,390. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 650 Data Processing System / DESCRI: medium size system available in configurations including punched card, magnetic tape, paper tape, and RAMAC disk storage systems / USE: independent processor or auxiliary system, for business problems / Basic system: monthly rental, $55,200 and up. Selling price $2,520,000 and up. Orders accepted on availability basis. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 1401 Data Processing System / DESCRI: small to medium-size solid-state computer available in a wide variety of configurations, including punched card, paper tape, magnetic tape and RAMAC disk storage systems / USE: independent processor or auxiliary system, for business problems / Basic system: monthly rental, $55,200 and up. Selling price $2,520,000 and up. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 1410 Data Processing System / DESCRI: an advanced intermediate data processing system with two and one-half times the speed and capacity of the 1401. Configurations available: card, tape, and with RAMAC / USE: business problems / Basic system: monthly rental, $5365 and up. Selling price, $244,550 and up. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 1620 Data Processing System / DESCRI: a solid-state computer with up to 60,000 positions of core storage and paper tape and typewriter input/output; punched card I/O also available / USE: scientific and engineering applications / Basic system: monthly rental, $1600 and up. Selling price $74,500 and up. All prices exclusive of tax / C24
International Business Machines Corp., Data Processing Div., *a / IBM 7040 data processing system / DESCRI: medium to large scale transistorized system utilizing an integrated central processing unit and core storage with highly flexible input/output capability. An 8-microsecond memory is utilized in modules ranging from 4096 words to 32,768 words / USE: business and scientific applications / Typical system: monthly rental, $11,650; selling price, $720,700. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 7044 data processing system / DESCRI: similar in design to the 7040 with the following exceptions: utilizes 2.5 microsecond core memory; three modules range in size from 6192 words of core memory to 32,768 words / USE: business and scientific applications / Typical system: monthly rental, $7,150; selling price, $4,750. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 7070 data processing system / DESCRI: a scientifically-oriented intermediate data processing system for applications which do not require the high input-output speeds of the 7040 / USE: scientific applications / Typical system, including 1401: monthly rental $19,025; selling price $160,550. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 7072 data processing system / DESCRI: a scientifically-oriented intermediate data processing system for applications which do not require the high input-output speeds of the 7040 / USE: scientific applications / Typical system, including 1401: monthly rental $19,025; selling price $160,550. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div. / IBM 7074 data processing system / DESCRI: similar in design to the 7070, while twice as fast processing business data and up to twenty times as fast in scientific computation / USE: business and scientific problems / Typical system: monthly rental $29,300; selling price $1,264,300. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 7080 data processing system / DESCRI: transistorized system, completely compatible with 705 I, 705 II, 705 III, permits high-speed transfer of information between tape units and main data storage. Processes business problems up to two times faster than 705 / USE: business problems / Minimum system: monthly rental $45,575 and up; selling price $2,065,750 and up. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 7090 data processing system / DESCRI: large-scale transistorized computer with improved synchronization of data to and from input/output devices. Offers extremely fast computing time; 2.1 million instructions per minute; 2.1 microsecond memory / USE: business and scientific problems / Typical system: monthly rental $63,500; selling price $2,096,000. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 7094 data processing system / DESCRI: similar in design to the 7090 with the following exceptions: 2-microsecond memory speed, double-precision floating point arithmetic, seven index registers, new index complementing instructions. The 7090 and 7094 are compatible; all existing 7090 programs, with properly defined instructions, can be executed with the 7094 without change / USE: business and scientific problems / Typical system: monthly rental, $70,000; selling price $5,154,500. All prices exclusive of tax / C24

International Business Machines Corp., Data Processing Div., *a / IBM 1710 Control System / DESCRI: a 1710 multiplexer and terminal unit and a 171 data converter connected to a 1620 data processing system simplifies collection and analysis of analog data by using direct entry into the computer / USE: quality control applications, process studies and process optimization / Monthly rental, $3500-7000; Selling price, $140,000-280,000. All prices exclusive of tax / C24

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see 12

Librascope Div., General Precision, Inc. -- C24

Link Div., General Precision, Inc. -- see C22A

Litton Systems, Inc., Guidance & Control Systems Div., 5500 Canoga Ave., Woodland Hills, Calif. / LC-7000 / DESCRI: high speed, parallel-word, single address, general-purpose computer; average instruction-execution rate of 125,000 operations per second / USE: applications such as bombing-navigation, missile-control, and weapon-control systems / - / C24

Lockheed Electronics Corp.

Loral Electronics Corp.

Minneapolis-Honeywell Regulator Co., Aerospace Div. / 7040 Scientific Applicability, 13350 U.S. Highway 19, St. Petersburg, Fla. / computer and test equipment / DESCRI: digital, light weight, high speed, high capacity for airborne applications. General purpose and differential analyzers / USE: aircraft and missiles / $75,000 to $100,000 / C24

The National Cash Register Co.

Omicronics, Inc., Subsidiary of Borg-Warner Corp.

Packard Bell Computer Corp.

Philco Corp., a subsidiary of Ford Motor Co., 3933 Welsh Rd., Willow Grove, Pa. / Philco 2000 Electronic Data Processing Systems / DESCRI: high-speed asynchronous, large-scale system. Magnetic tape, paper tape, and card input/output -- up to 32,768 word magnetic core memory; auxiliary drum storage available. Printing output, 900 lines per minute / USE: communication, scientific data education of all types / $35,000 per month and up / C24

Philco Corp., a subsidiary of Ford Motor Co., Computer Div. -- see C22

Remington Rand Univac, 315 4th Ave., New York, N.Y. / UNIVAC File-Computer -- Model I, a medium-sized, general purpose, random access, digital, electronic computer / DESCRI: mina drum storage 1070 words (optional 2000 words core storage in lieu of 1070 words main drum storage); average access time, 2.5 milliseconds; basic add time 1.2 milliseconds. Input/output includes U-F-C Console, inquiry typewriter, 60 or 90 column punched card system, high speed paper tape units, 1-10 magnetic tape units, high speed printer. Large capacity random access storage, 1-10 general storage drums, each able to store 100,000 seven-bit alpha-numeric characters / USE: business and scientific applications / $8000 to $21,000 / C24

Remington Rand Univac, *a / UNIVAC 490 Real Time System / DESCRI: stored program computer with solid-state system; 16,384-32,768 words core memory. Access time 1.9 microseconds, address time 7.2-12 microseconds. System includes 12 input/output channels for handling magnetic tape, punched-card, paper tape, and on-line printer. Also communication equipment for remote devices such as UNICALL and units.
sets used in air lines reservation systems / USE: real-time, business and scientific applications / $18,000 and up / C24

Remington Rand Univac, *a / UNIVAC Solid State Model II computer systems 80- or 90-column / DESCR: magnetic, medium-scale data processing system with drum and magnetic core storage. Basic central processor includes 2000 words of storage; 1200 words of magnetic core storage; 9 index registers, 6200 words of drum storage may be added. Optional devices available including Randex drum units. Model II system may include 10 Randex drum units, each having 24 million digits capacity / USE: general purpose system for business and scientific applications / $7100 to $15,500 / C24

Remington Rand Univac, *a / UNIVAC II - large scale electronic digital computing system / DESCR: core memory, access time 20 microseconds. Basic add time 12 microseconds; input/output includes supervisory console, Uniprinter, Uniprinter, high-speed printer, 90-column tape units. Uniservo II. Peripheral equipment: card-to-tape and tape-to-card converters, tape verifier, business and scientific applications / $25,000 to $30,000 exclusive of tax / C24

Remington Rand Univac, *a / UNIVAC III - solid state, digital, electronic data processing system / DESCR: 0192-32,768 words core storage. Access time 4 microseconds. Basic add time 8 microseconds, maximum of 32 Uniservo III plus 6 Uniservos II. Transfer rate 24 million characters or 200,000 digits/second. Simultaneous read, write, compute, also available: 80-90 tabulating card reader and punch units, three index registers, paper tape reader and punch; high-speed printer / USE: business and scientific applications / $15,000 to $30,000 exclusive of tax / C24

Remington Rand Univac, *a / UNIVAC LARC / DESCR: general purpose computing system. Core memory 97,500 words. Access time 4 microseconds plus 100 words core memory with one microsecond access time. Basic add 4 microseconds. Maximum of 60 magnetic tape units can be used. Maximum drum memory 6,000,000 words. System can include wide variety of input/output devices / USE: scientific and business applications / $135,000 and up / C24

Remington Rand Univac, *a / UNIVAC 1103A, large-scale scientific, digital computer / DESCR: utilizes magnetic tapes with forward and reverse reading, a lattice arrangement to reduce drum access time. Core memory 4096-12,288 words; 8 microseconds access time; basic add time 6 microseconds; maximum 10 magnetic, tape. Also included on-line are 80 column card reader and punch, paper tape reader

Products and Services

and punch and typewriter. Program interrupt feature permits microsecond switching to another processor program / USE: scientific applications / $25,000 to $45,000 / C24

Remington Rand Univac, *a / UNIVAC 1105, transistorized, buffered version of 1105. Access time 6 microseconds; basic add time 6 microseconds, maximum 20 magnetic tape units; 32,000 words. Average access time 17 milliseconds. Addressable drum for programming versatility. Visual display attachable for on-line output. Program interrupt feature permits processing data from other on-line units on priority basis / USE: scientific and commercial applications / $40,000 to $55,000 / C24

Remington Rand Univac, *a / UNIVAC 1107 thin-film memory computer / DESCR: multi-purpose, high-speed system, 32,768 words, access time 1.0 microseconds. Thin-film memory, access time 300 billionths of a second. Basic add time 4 microseconds, access time 6 microseconds. Bi-directional input/output channels. Peripheral equipment: magnetic tape, paper tape punched-card, high-speed printer, mass storage, real-time devices / USE: scientific and real-time applications / $32,000 to $60,000 / C24

Remington Rand Univac, *a / UNIVAC Solid State Model I 80 and 90-column tape systems / DESCR: medium-scale data processing system. Magnetic drum storage capacity 5000 or 9200 words. Average access time from .425 to 1.7 milliseconds. Add time: 85 microseconds. Up to ten magnetic tape handling units (UNISERVO II). Transfer rate: 25,000 characters/second. Randex Storage optional / USE: business and scientific applications / $9000 to $13,000 / C24

Remington Rand Univac, *a / UNIVAC Solid State Model I 80 and 90-column tape systems / DESCR: expandable medium-scale data processing system. Magnetic drum storage of 2400 to 5000 or 9200 words. Average access time from .425 to 1.7 milliseconds. Add time: 85 microseconds. Three index registers, up to ten magnetic tape handling units can be incorporated (UNISERVO II). Randex Storage optional / USE: general purpose data processing system for business and scientific applications / $9000 to $13,000 / C24

Remington Rand Univac, *a / UNIVAC Solid State Model I 80 and 90-column card systems / DESCR: medium-scale data processing systems compatible with 50 or 90-column cards. Consists of high-speed reader, central processor, high-speed printer and read-punch unit. Reads 405 cards/minute, punches 150 cards/minute; prints 600 lines/minute. Many optional features available such as index registers and Randex Storage / USE: general purpose computer for business and scientific applications / $6950 to $10100 / C24

Remington Rand Univac, *a / UNIVAC Solid State Model I Step 80 and 90-column card systems / DESCR: medium-scale data processing system. Basic configuration consists of high-speed reader, central processor, high-speed printer and punch unit. Magnetic drum storage of 2400 or 9200 words. System expandable by addition of index registers and Randex Storage as well as paper tape reader and punch. Average access time from .425 to 1.7 milliseconds. Add time: 85 microseconds / USE: general purpose data processing system for business and scientific applications / $9650 to approx. $7500 exclusive of tax / C24


Scientific Data Systems, Inc., 1542 Fifteenth St., Santa Monica, Calif. / SDS 910, SDS 920 general purpose digital computers / DESCR: 900 Series computers utilize core memory and silicon solid-state components. Complete line of peripheral equipment is available for general-purpose and systems integration applications / USE: general-purpose, scientific and engineering computation, and systems integration / $41,000 to $100,000 / C24

Scientific Data Systems, Inc. -- see C12

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / digital computers / DESCR: data processing, programming, systems analysis, and machine services using IBM 650, 1401, 7070, 704, 709, 7099, 1620, and unit record equipment / USE: for business and scientific problems / on a contractual basis / C24


Tech Serv Inc.

Thompson Ramo Wooldridge Inc., RW Div., 8433 Fullbrook Ave., Canoga Park, Calif. / TRW-130 (AN/UYK-U) Digital Computer / DESCR: fully militarized; parallel address; core 8K word memory, expandable to 32K words; 15-bit word length; "stored logic" design permits variable word length, order structure and instruction repertoire; programmable at machine or problem-oriented language levels, asynchronous I/O, NTDS compatible, automatic interrupt system / USE: on-line real-time control and data processing / $93,500 / C24

TRW Computers Co., a div. of Thompson Ramo Wooldridge Inc., 4035 Fullbrook Ave., Canoga Park, Calif. / TRW-330 and TRW 340 Industrial Control Computer Systems / DESCR: drum and drum-core combination computer systems featuring high speed and 20,000 operations per second -- and up-time better than 99.9% / USE: on-line control of industrial processes such as

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as steel mills, power stations, and chemical and refining plants / $100,000 to $500,000 / C24
UNIVAC Military Operations of Sperry Rand Corp., Univac Park, St. Paul 16, Minn. / digital computing systems / DESCRI: research, design, development and manufacture of high-speed electronic digital computers, data processing systems, peripheral equipment and programming services / USE: airborne, ground based and simulation / $34,500 and up / C24
U.S. Army, Ballistic Research Laboratories
Westinghouse Electric Corp., Air Arm Div.
Westinghouse Electric Corp., Research & Development Center, Pittsburgh 35, Pa. / PRODAC Computer Systems / DESCRI: 1962 PRODAC computers designed for all forms of process control. 6 usec add time. 1.8 usec access core memory with auxiliary floating head drum; priority interrupt; flexible for all sizes of application, both present and predicted on line, open or closed loop control systems / $150,000 to $1,000,000 / C24

C24A, COMPUTERS, SPECIAL PURPOSE

ACF Electronics Div., ACF Industries Inc.
Air Defense Armaments, Inc. -- see C25
Applied Dynamics, Inc. -- see C23
AB&A Div. of All American Engineering Co., 135 Main St., Belleville 9, N.J. / special purpose analog computer / DESCRI: small electrically operated unit programmed to solve moderately complex equations. Functions are dialed in yielding a direct readout of the unknown / USE: design calculations / $100 to $500 depending on complexity of problem / C24A
Automation Management, Inc. -- see C25
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio / Bailey 710 Analog Computing System / DESCRI: system accepts analog data from measuring devices; computes using servos / USE: to compute efficiently, heat-rate, deviation from design, etc. / - / C24A
Beckman Instruments, Inc.
The Bendix Corp., Eclipse-Pioneer Div., Teterboro, N.J. / air data computer systems / DESCRI: utilized to convert basic characteristics of air training devices on which an aircraft is moving into information required in the operation of the aircraft and its systems / USE: aircraft installation / quotations supplied / C24A
Budd Electronics, 43-22 Queens St., Long Island City 1, N.Y. / special purpose computers / DESCRI: special computer design, component design, logic circuitry, encoders and decoders; storage systems, displays, print-outs, and a wide variety of EDP equipment / - / C24A
Clary Corp., 408 Junipero St., San Gabriel, Calif. / Clary DAC-2500 Arithmetic Center / DESCRI: a system component capable of accepting external input data and storing data, performing arithmetic and logical operations and providing data and control output / USE: component of a system / $10,000 / C24A
COMCOR, Inc.
Computer Logic Corp.
Delco Radio Div., General Motors Corp., Electronics Division / DESCRI: research, design, application, both present and prospective / USE: in training and control / on request / C24A
Dresser Electronics, SIE Div., a division of Dresser Industries, Inc.
The Electro Nuclear Systems Corp.
Electroproc, Inc.
The English Electric Co., Ltd., England / DESCRI: special purpose digital computer; incorporates electronic memory system with programmable typewriter, adding machine, cash register, telephone, paper tape input and printed hard copy, punched paper tape, vocal read out / USE: special purpose inventory control system / $750 per month / $1500 per month / C24A
Emm Industries
Industrial Nucleonics Corp., see A6
Lorad Electronics Corp.
Loral Electronics Corp.

Products and Services

Clary Corp., 408 Junipero St., San Gabriel, Calif. / Clary DAC-2500 Arithmetic Center / DESCRI: a system component capable of accepting external input data and storing data, performing arithmetic and logical operations and providing data and control output / USE: component of a system / $10,000 / C24A
COMCOR, Inc.
Computer Logic Corp.
Delco Radio Div., General Motors Corp., Electronics Division / DESCRI: research, design, application, both present and prospective / USE: in training and control / on request / C24A
Dresser Electronics, SIE Div., a division of Dresser Industries, Inc.
The Electro Nuclear Systems Corp.
Electroproc, Inc.
The English Electric Co., Ltd., England / DESCRI: special purpose digital computer; incorporates electronic memory system with programmable typewriter, adding machine, cash register, telephone, paper tape input and printed hard copy, punched paper tape, vocal read out / USE: special purpose inventory control system / $750 per month / $1500 per month / C24A
Emm Industries
Industrial Nucleonics Corp., see A6
Lorad Electronics Corp.
Loral Electronics Corp.

Litton Systems, Inc., Guidance & Control Systems Div., 5500 Canoga Ave., Woodland Hills, Calif. / DESCRI: special-purpose DDA computer / USE: for the guidance and control of projectiles; analyzes ballistics trajectory information received from the radar to determine both the origin and projectile impact point / - / C24A
Litton Systems, Inc., Guidance & Control Systems Div., *a / LC-200 / DESCRI: small, lightweight, special-purpose, incremental-type, digital computer with programming flexibility for variable word-length operations / USE: as a central computer to test new concepts in computing techniques / - / C24A
Litton Systems, Inc., Guidance & Control Systems Div., *a / LC-300 / DESCRI: special-purpose, whole-number, lightweight, high performance computer; incorporates 30,000 - 10 bit words and has a designed-in versatility applicable to a wide family of real-time systems / USE: for missile guidance / C24A
Litton Systems, Inc., Guidance & Control Systems Div., *a / LC-400 / DESCRI: real-time computer; four-address instruction word (core command, jump command, and multiply command). Execution of all four commands is simultaneous with each instruction word-time / - / C24A

Litton Systems, Inc., Guidance & Control Systems Div., *a / LC-500 / DESCRI: special-purpose computer / USE: for computations characteristic of helicopter flight, including a hybrid system of hyperbolic navigation, doppler dead reckoning, and inertial guidance. Also performs fuel-management and safe flight limit calculations / - / C24A

Litton Systems, Inc., Guidance & Control Systems Div., *a / LC-900 / DESCRI: this computer contains a complete command list; can perform 266 iterations per second; has combined incremental and whole number system / USE: for solving real-time airborne navigation problems / - / C24A

Litton Systems, Inc., Guidance & Control Systems Div., *a / LC-900 / DESCRI: this computer contains a complete command list; can perform 266 iterations per second; has combined incremental and whole number system / USE: for solving real-time airborne navigation problems / - / C24A

Loral Electronics Corp.
Management Assistance Inc., 40 Exchange Pl., New York 5, N.Y. / special purpose data processing equipment; data processing; systems engineering; and data processing consulting / DESCRI: WBC-452 selector expansion device / USE: to expand the selector capacity of IBM 400 and 500 series machines / $12,000 to $14,000 / C24A

Management Assistance Inc., *a / special purpose data processing equipment / data processing; systems engineering; and data processing con-
C25. COMPUTERS, TEST EQUIPMENT

Aircraft Armaments, Inc., Industry Lane, Cockeysville, Md. / test and checkout equipment / DESCR: miniature telemeasuring pre-flight (TITAN), component checkout (POLARIS), factory test (TERRIER), shipboard radar monitors (TERRIER, TALOS) / USE: for test and checkout of missile components and systems / custom / C25


Imm Industries

Harman-Kardon Inc., Data Systems Division -- see C26

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see C26

Minneapolis-Honeywell Regulator Co., Aeronautical Div., Florida Facility -- see C24

Non-Linear Systems, Inc.

Radiation Incorporated

Scientific Data Systems, Inc. — see C24

Sunshine Scientific Instruments -- see A7

C26. COMPUTER COMPONENTS

Aladdin Electronics, Div. of Aladdin Industries, Inc.

Alden Products Co., 1140 N. Main St., Brockton, Mass. / Alden "MITI" Modules / DESCR: low cost, injection molded modules, developed for Polaris program, are molded of nylon per MIL-P-20693 and are designed to contain circuit elements for interconnecting by welding or soldering to printed circuit board or matrix in a package of uniform insulation in the smallest practical size. Permits replacement of individual components, eliminates time consuming potting operation / USE: maximum density packaging of circuit elements / approx. 200 ea. in quantity / C26

Allied Control Company, Inc.

American Hydromath Corp.

Amperex Electronic Corp.

Applied Dynamics, Inc.

Astrometrics, Inc.

Atlas Precision Products Co., Div. of Prudential Industries, Inc.

Beckman Instruments, Inc.

Beckman Instruments, Inc., Berkeley Div.

Benson-Lehner Corp.

Bowman Instrument Corp.

The Bristol Co.

Cadre Industries Corp., 20 Valley St., Endwell, N.Y. / custom assembly / DESCR: complete facilities for manufacturing cable assemblies, wiring harnesses, plug-in modules, wire wrap panels, soldered control panels and/or consoles and complete sub systems / USE: sub-assembly for installation in finished computers / various prices / C26

California Instruments Corp.

Cinch Manufacturing Corp.

COMCOR

Computer Control Co., Inc.

Computer Equipment Corporation

Cornell-Dubilier Electronics, div. of Federal Electric Co.

Corning Electronic Components, Corning Glass Works

Datex Corp.

Daystrom, Inc., Weston Instruments Div.

Delco Radio Div., General Motors Corp.

Dialight Corp., 60 Stuart Ave., Brooklyn 3T, N.Y. / computer components / C26

Diamondite Products Mfg. Co.

DI/AN Controls, Inc.

Digital Development Corp.

Elecisco, Inc. -- see C22


Esinco, Inc.

Eco, Inc.

Ess Gee, Inc.

Fairchild Controls Corp.

Ferranti Electric, Inc.

Ferroxube Corp. of America

General Dynamics/Electronics

General Electric Co., Computer Dept.

General Electric Co., Specialty Devices Operation, 1801 Lemoine Ave., Syracuse, N.Y. / custom modules / DESCR: custom built integrated electronic devices for data processing use; military and commercial applications; also modules in missiles and satellites / USE: in computers and data processing equipment / $18 to $20,000 / C26


General Mills Electronics Group

Gilmore Industries, Inc.

GPE Controls, Inc. -- see C32 and 16

GPS Instrument Co., Inc.

Hermetic Industries, Inc.

Harman-Kardon Inc., Data Systems Div., Ames Ct., Plainview, L.I., N.Y. / digital logic and systems / DESCR: specialized solid state design group, oriented and experienced in application of digital techniques to problems of digital computation and data handling / USE: end products are digital systems and computers / price dependent on system, ranges from $30,000 to $150,000 / C26

Harvey-Wells Electronics, Inc.

Hathaway Instruments, Inc.

Heath Co., subsidiary of Daystrom Inc., Hewlett-Packard Co.

The Hoover Company, Electronics Div.

Houston Instrument Corp.

Hughes Semiconductor Division

Hydro Molding Company Inc.

IMC Magnetics Corp., Western Div., 6058 Walker Ave., Maywood, Calif. / solenoids / DESCR: N4° diameter to 4" diameter; DC, AC rectified, rotary. Solenoid switch assemblies with subminiature switches and special latching mechanisms. Rotary relays are manually latched, solenoid released. Solenoid computer modules / - / - / C26

Imm Industries

Indiana General Corp., Electronics Div.

Information Products Corp.

International Rectifier Corp.

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see C26

Librascope Div., General Precision, Inc., 600 Western Ave., Glendale 1, Calif. / analog and digital computer components / DESCR: complete range of computer components, including encoders, X-Y plotters, integrators, differentials, miniature servos, servo amplifiers / USE: in analog and digital computers / - / C26

Edwin A. Lipps Engineering

Liebedien Electronics Co.


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Magnetic Research Corp.
Midwestern Instruments, Inc. -- see
C3A, Fl, HI, S2A, and T2
Monarch Metal Products, Inc.
Monitor Systems, Inc.
F. L. Moseley Co.
Nucleonic Products Co., Inc.
Pacific Magnetic Corp.
Packard Bell Computer Corp.
Paradynamics Inc., Control Electronics Div.
The Perkin-Elmer Corp.
Polyphemus System Div.
Potter Instrument Co., Inc., Sunny-side Blvd., Plainview, L.I., N.Y. / develop and manufacture computer peripheral equipment / DESCRI: magnetic tape transports, high speed printers, perforated tape handlers, and magnetic record/playback heads / USE: data processing and computer systems / on request / C26
Radio Corp. of America, Semiconductor and Materials Div.
Raytheon Co., Industrial Components Div.
Raytheon Co., Semiconductor Div.
Regency Electronics, Inc.
Scientific Data Systems, Inc. -- see C12
F. W. Sickles Div., General Instrument Corp.
Soroban Engineering, Inc.
Sperry Farragut Co., Div. of Sperry Rand Corp.
Sperry Gyroscope Co., Div. of Sperry Rand Corp.
Superex Electronics Corp.
Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc.
Tech Serv Inc.
Techniques Inc.
Technitrol, Inc.
Texas Instruments Inc., P.O. Box 5012, Dallas 22, Texas / semiconductor components, resistors, capacitors / DESCRI: diodes, rectifiers, silicon controlled rectifiers, resistors, capacitors, semiconductor networks, thin film circuits, modular circuits / USE: electronic circuitry / - / C26
Texas Instruments Inc. -- see T14, T15, and T16
Texas Instruments Inc., Semiconductor Components Div., Box 5012, Dallas 22, Tex. / computer components / DESCRI: wide line of high-performance computer components including germanium and silicon transistors; solid circuit semiconductor networks; silicon diodes; silicon rectifiers; capacitors; resistors / USE: all areas of computer man­ufacturing / 1/24 (in qty.) to $450 / C26
Thompson Ramo Wooldridge Inc., NW Div. Transitron Electronic Sales Corp.
Trico Laboratories, Inc.
Univac Military Operations of Sperry Rand Corp.
Valor Instruments, Inc.
Veedil -- all in addition to the Veedil Division of the Perkin-Elmer Corp.
Victor Business Machines Division, Victor Comptometer Corp.
The Ward Leonard Electric Co.

Products and Services
Westgate Laboratory, Inc.
Wright Engineering Co., Inc.
Wright Line, a division of Barry Wright Corp.

C27. COMPUTING SERVICES (see also "Survey of Computing Services")
Allied Research Associates, Inc.
American Data Services, Inc., 2221 S. W. Fifth Ave., Portland 1, Ore. / computer services / payrolls, sales analysis, general ledger, accounting, accounts receivable and other financial and statistical data / USE: business, governmental and scientific groups / - / C27
Associated Sales Analysts, Inc., 220 West 42nd St., New York 30, N.Y. / data processing / DESCRI: data processing of all commercial, engineering and military applications. Programming, consulting and systems evaluation / - / - / C27
Automated Accounting Center of Connecticut
Automated Procedures Corp.
Beckman Instruments, Inc.
Bell Aerosystems Co.
Ernest E. Blancke & Associates, Inc.
C-E-I-R, Inc.
Civil Engineering Systems Laboratory Compatux, Inc. -- see C30
Computer Services, Inc.
Data Processing Corp., 311 S. Sharp St., Baltimore 1, Md. / data processing service / DESCRI: management consulting and data processing services for the solution of business problems, operations research, forecasting. Large staff of experienced business systems analysts and programmers / - / - / C27
Data-Service, Inc.
Denver Electronic Computing Service, Inc.
Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / analog computing service / DESCRI: Dian 120 Computers; 440 summing and integrating amplifiers, 70 multipliers, associated function-generating equipment, resolvers, diodes, relay amplifiers, recorders and plotting boards / USE: solution of scientific and engineering problems; simulation of physical systems / on request / C27

The Diebold Group, Inc.
Electro Boat Div., General Dynamics, Groton, Conn. / computer services / DESCRI: 32K IBM 704; 1401; analog to digital and analog equipment. Special programs for structure analysis and "do-it-yourself" pipe stress analysis / C27
Electronic Data Service, Inc., 002 Philadelphia Pike, Wilmington, Del. / data center / DESCRI: 80 column punched card tabulating service, 1401 IBM system / DESCRI: EDP system for lease; punched card and EDP educational program / USE: service / $4.50 to $250; hourly rates as fit need of client / C27
Electronic Processing Center Inc., 253 N. Broad St., Philadelphia 7, Pa. / data processing service / DESCRI: prepares weekly and monthly reports on computer and tab from punch card and punched paper tape. Special projects on both 650 card and 1401 / USE: as service to customers without data processing equipment / $50 to $10,000 / C27
Executive Computer Utilization, 161 W. Wisconsin Ave., Suite 5130, Milwau­kee 1, Wis. / computer services / DESCRI: system design, programming, and operations for companies not possessing adequate technical skills and/or equipment capabilities / systems and programming / $5 to $25 an hour / C27
Florida State University, Computing Center
Gannett Fleming Corddry and Carpenter, Inc., 600 N. Second St., Harrisburg, Pa. / computing and EDP services / consulting engineering firm with a 1620 IBM computer and other equipment doing work for own organization plus operating a service bureau / USE: as a service to customers / - / - / C27
General Dynamics/Astronautics a Div. of General Dynamics Corp.
General Kinetics Inc., 2611 Shirington Rd., Arlington 6, Va. / computing services / DESCRI: complete programming services; problem solving; programming research. Compiler development / - / hourly and contract rates / C27
GPS Instrument Co., Inc.
Gulton Industries, Inc.
Hammer Business Service

THE ITT DATA PROCESSING CENTER, Rte. 17 and Garden State Parkway, Paramus, N.J. / COMPLETE DATA PROCESSING SERVICES / IBM 704/5 / service from computer time to systems analysis
of sub-contractors reporting to prime contractors or Dept. of Defense / USE: as required / - / C27

Reeves Instrument Corp.

THE SERVICE BUREAU CORP., A SUBSIDIARY OF IBM, 425 Park Ave., New York 22, N.Y. / COMPUTING SERVICES / DESCR: data processing, programming, systems analysis, and machine services using IBM 650, 1401, 7070, 704, 709, 7090, 1620, dataplotting, MIRC reader-sorter, and unit record equipment. Extensive computer application experience in many fields. Preplanned applications include PERT (Program Evaluation and Review Technique); Rocket Fuel Analysis; Hydraulic Network Analysis; Military Parts Cataloguing; School Scheduling, Registration, and Grade Reporting; and others / USE: business and scientific problems / hourly or contractual basis / C27

Data Processing Corp. -- see C27
Data Processing Corp. -- see C27

Electric Boat Div., General Dynamics -- see C27

Electronic Processing Center Inc. -- see C27

The English Electric Co., Ltd., English Electric House -- see D1
Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ont., Canada / PEGASUS / DESCR: computer centre (at Toronto) is built around a Pegasus digital computer. Large program library available for this medium size digital general purpose computer / USE: applications in industry, science and engineering $65/hour / C20

General Dynamics/Astronautics a Div. of General Dynamics Corp.

General Kinetics Inc., 2611 Shirlington Rd., Arlington 6, Va. / digital computing services / DESCR: problem formulation, numerical analysis; programming; problem solving; programming systems development; compiler development / - / hourly and contract rates / C26

The I.D.R. Co. (Industrial Data Reduction)

Mesa Scientific Corp. -- see C27

Multnomah Data Processing Center, 430 N.W. 10th Ave., Portland 9, Ore. / computing services / DESCR: IBM 1620 card system, IBM 1401 magnetic tape system, full data processing support, with analysis and programming in engineering, statistics, and management science applications / - / C20


National Cybernetic Corp.

National Physical Laboratory, Mathematics Div., Teddington, Middlesex, England / digital computing service / DESCR: specialists in numerical analysis including problems in applied mathematics and theoretical physics / USE: data processing / £30 an hour on DEUCE; £15 an hour on ACE / C20

Philco Corp., Computer Div. (a Subsidiary of Ford Motor Co.)

Science Research Associates, Inc., Data Processing Div., 259 E. Erie St., Chicago 11, Ill. / digital computing services / DESCR: exclusive DocuTran(TM) photoelectric scanning service transcribes pencil marks to magnetic tape or cards; capability 5000 8x11 sheets/hour. Related application and data processing services available / USE: tests, surveys, cumulative records, census / - / C20

Scientific Computing Service

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / digital computer services /
C29. CONNECTORS

Richard D. Brew & Consolidated Cinch Amphenol Continental Connector Corp., Elco
Union Carbide

DESCR: data processing, programming, systems analysis, and machine services using IBM 650, 1401, 704, 709, 7090, 7070, 1620, and unit record equipment / USE: for business and scientific problems / a contractual basis / C28

Statistical Tabulating Corp. -- see C30
Technical Advisors, Inc.
Telecomputing Services, Inc. -- see C27

Union Carbide Nuclear Co., Central Union Carbide

电波 Research & Development Westgate Laboratory, Inc.


Alden Products Co. AMP, Inc.

Amphenol Connector Div., Amphenol-Bendix Electronic Corp., 1850 S. 54th St., Chicago 50, Ill. / Tiny Tim® Microminiature Connector / DESC: reliable microminiature rack and panel. Five to 33 contacts; 3 amps; 600 volts max.; 0.292" wide; 0.632" high; 0.650" to 2.243" long / USE: connecting device for miniaturized circuits / - / - / C29

Richard D. Brew & Co., Inc.

Burdy Corp., Norwalk, Conn. / connectors, printed circuit / DESC: edge-on HF/FE printed circuit connector with solderless removable contacts. Unique bifurcated spring design. 15, 22, 43 place sizers / USE: printed circuit boards / depends on quantity and size / C29

Burdy Corp., Norwalk, Conn. / connectors, miniature round / DESC: solder, solderless, and hermetically sealed BANTAN connectors which conform to requirements of MIL-C-5015; sold at $200/hr. / USE: connector applications / - / - / C29

Cinch Manufacturing Corp.

Continental Electrodynamics Corp.

DESCR: card cage, Special connectors / $0.75 to $15 / C29

Winchester Electronics, Inc., 19 Willard Rd., Norwalk, Conn. / manufacturers connectors, connector accessories, and terminals / DESC: connectors: coaxial cable; electrical AN or MIL-C-5015; hermetically sealed or pressurized; interlock; miniature; power; printed circuit; RF; removable contact; solderless; subminiature. Connect or hardware: hoods; shells; guides; plugs; potting forms; pins and sockets; terminals. Tools / USE: in all phases of electronic industries / - / C29

C30. CONSULTING SERVICES (see also "Survey of Consulting Services")


American Data Services, Inc.

The American University - EDPL

Applied Data Research, Inc.

Aries Computer Morgan Ave., South, Minneapolis 23, Minn. / consulting services / DESC: consulting in areas of automatic programming techniques, systems engineering, operations analyses, and simulation development / - / - / C30

Gannett Fleming

DESCR: consulting services / - / - / C30

Richard D. Brew & Co., Inc.

DESCR: consultants for industry and government in mechanical engineering, especially heat transfer, thermodynamics, dynamics, cryogenics, vibrations, mechanics; solid state physics; chemical engineering; design and electrical engineering / C30

Ebasco Services Incorporated

DESCR: consulting and engineering services / - / - / C30

H. S. Gelman & Co. Ltd.

General Kinetics Inc., 2617 Shillingstone Rd., Arlington 6, Va. / consulting services / DESC: mathematical studies; automatic programming; computer evaluation and selection; data handling methods; selection of peripheral equipment; magnetic tape
quality studies / - / hourly and contract rates / C30
Hammer Business Service
Hathaway Instruments Inc.
S. Himmelstein & Co.
Hollander Associates, P.O. Box 2270,
Fullerton, Calif. / consulting services / DESCR: consultation on analog and digital computer design and system organization. Comparisons of alternative designs and market value by unique analytic evaluation procedure. European liaison office / service / - / C30
Imm Industries
Informatics, Inc. -- see P124
Ingenio&firm Nordisk AAB
Institute for Scientific Information, Inc.
The ITT Data Processing Center -- see
C27
Jonker Business Machines, Inc. -- see
I2 and I2A
KCS Ltd.
Edwin A. Lipps Engineering
Management Assistance Inc. -- see
C30
IndustrialPk., Ft. Washington, Pa. / network planning and scheduling services / DESCR: consultation in application of Critical Path Method, PERT, etc. Production of special purpose scheduling computers. Application of modern mathematical techniques to management problems / USE: Skedufilo computer is analog of scheduling net / $5000 to
$10,000 / C30
H. H. Noyes & Co., Inc., 710 Walsle Ave.,
Philadelphia 21, Pa. / consulting service / DESCR: cost reduction programs to insure most effective use of equipment and staff / - / C30
McDonnell Automation Center Div.
McDonnell Aircraft Corp., Box 510,
St. Louis 66, Mo. / consulting services / DESCR: provide expert counsel to determine if or how data handling equipment can be most effectively utilized / - / C30
Mesa Scientific Corp., 12030 Weber
Way, Hawthorne, Calif. / consulting services / DESCR: consulting in systems engineering, logic design, and circuit design related to computers, automatic test equipment, guidance and control systems. Programming and development of programming systems / - / - / C30
Midwest Research Institute
Mountain Associates
Mountain Data Systems, Inc. -- see
C27
National Computer Analysts, Inc.
National Computer Analysis of New York, Inc., 107 Mamaroneck Ave.,
White Plains, N.Y. / consulting services / DESCR: specialists in systems design and programming of real-time data processing, communication systems, information systems and simulation techniques / - / - / C30
National Cybernetic Corp. -- see S9
Simon M. Newman
John K. Paden Co., 2624 Shelby St.,
Dallas 19, Tex. / consulting / Products and Services
DESCR: electronic data processing
management consulting / service / - / C30
Phileo Corp., Computer Div., (a Sub-
sidiary of Ford Motor Co.)
James Addison Potter
Science Research Associates, Inc.,
Data Services Div. -- see C29
Scientific Computing Service
H. M. Semarne
The Service Bureau Corp., a subsidi-
ary of IBM, 425 Park Ave., New York 22, N.Y. / consulting services / DESCR: analytical and engineering services / USE: to aid in the formulation and design of the solution of data processing problems in business, science, and engineering / - / C30
The Simulmatics Corp.
Soroban Engineering, Inc.
Statistical Tabulating Corp., 140 S.
Michigan Ave., Chicago 3, Ill. / C.A.M. Division (Computer Advisors to Management) / DESCR: professional consulting for business, science, and government in the economic evaluation and application of computer systems for management information and control / USE: prior to, during, or hour after installation of EDP/IPD / depends on nature and scope of problem to be solved / C30
Statistical Tabulating Corp. / a / SPACE Services Division / DESCR: support programs for space components and equipment. Logistics; technical writing; provisioning parts breakdown; illustrated parts documentation / USE: to co-ordinate logistics requirements of defense contractors / depends on nature and scope of problem to be solved / C30
TASK FORCE (division) / DESCR: organizational problem-solving with one or more temporary office personnel in various skill families (data processing and computer operators, programmers, supervisors; executive and technical; typing and stenographic; others) / USE: for computer and processing problems / to $6 million / C30
Nortonics, a div. of Northrop Corp.,
Electronic Systems & Equipment Dept.
Nortonics, a div. of Northrop Corp.,
Precision Products Dept.
Packard Bell Computer Corp., 1905
Amarco Ave., Los Angeles 25, Calif. /
digital system components / DESCR: an array of field proved digital system components which can be interconnected to build a variety of systems including automatic check out, data acquisition and recording, industrial control, and telemetry data reduction systems / - / $3000
to $6 million / C31
Phileo Corp., a subsidiary of Ford
Motor Co., Computer Div.
Philips Electronic Instruments
Republic Aviation Corp., Missile Sys-
tems Div.
Union Switch & Signal Div. of Westing-
house Air Brake Co.
Virginia-Darlington Inc.
Warren Leonard Electric Co.
Westgate Laboratory, Inc.
Wesco Instruments & Controls Co.,
1535 26th St., Santa Monica, Calif. /
digital temperature controllers / DESCR: digital set-point on-off and proportional types / varies / C31
C32. CONTROLS, AUTOMATIC
Airpax Electronics, Inc.
Amplifier Corp., of America
Bailey Meter Co., 1050 Ivanhoe Rd.,
Cleveland 10, Ohio / 720 Analog
Control System / DESCR: single
and multi-element control systems
using solid-state components / USE:
to control process variables accord-
ing to desired conditions / - / C32
The Bendix Corp., Eclipse-Pioneer
Division -- see C24A
Consolidated Controls Corp.
Datex Corp.
Fenwall, Inc.

COMPUTERS and AUTOMATION for June, 1962
Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ont., Canada / ARGUS / DESCR: small, medium, and large scale general purpose computer designed specifically for process control. Contains a revolutionary fixed program store using an inductive peg-board. Multiplies device with a high scanning rate, in excess of 10,000 points per second / USE: process control / $150,000 to $450,000 / C32

Giannini Controls Corp., Gilmore Industries, Inc.

GFE Controls, Inc., 240 E. Ontario St., Chicago 11, III. / flow transmitter / DESCR: extracts square root providing 5 watts output linear to flow from orifice signal. 0-25 volts output integral transmitter amplifier / / $450 to $735 / C01

GFE Controls, Inc., "a / low pressure transmitter / DESCR: .2" wc minimum span, 0 to 25 volts at 5 watts output / USE: to measure furnace pressure, etc. / $350 to $400 / C32

Hagan Chemicals & Controls Inc., Hagan Ctr., P.O. Box 1346, Pittsburgh 30, Pa. / analog control systems / DESCR: solid state components -- include recorders, transducers, control computers and control stations. May be tied in with data processing or digital computer equipment / USE: controls final control elements after analyzing continuous analog signals / / C32

The A. W. Haydon Co. / Imm Industries

Industrial Nucleonics Corp. -- see A6

Maxson Electronics Corp.

Shine Scientific Instruments -- see A7

Union Switch & Signal Div. of Western Air Brake Co.

C33. CONTROLS, SIGNALING

Radiation Incorporated

Sunshine Scientific Instruments -- see A7

Union Switch & Signal Div. of Western Air Brake Co.

C34. CONTROLS, SORTING AND COUNTING

Consolidated Electrodyamics Corp.

Ferranti Electric, Inc.

Societe D'Electroine et D'Automatic

Sunshine Scientific Instruments -- see A7

C35. CONVERTERS, ELECTRICAL

Audio Instrument Co., Inc., 135 West 14 St., New York 11, N.Y. / logarithmic converter / DESCR: newly released medium scale analog circuit. Output signal is instantaneous logarithm (without regard to sign) of input signal / USE: for recording of rapidly varying quantities

Products and Services

changing over a wide range of amplitude / $600 to $1500 / C35

Control Data Corporation

Connel-Dublifier Electronics, div. of Federal Pacific Electric Co.

Epsco, Inc.

Hagan Chemicals & Controls, Inc.

Hathaway Instruments Inc.

Walter Kidde & Co., Kidde Electronics Laboratories

C36. CONVERTERS, ELECTRICAL, HIGH FREQUENCY

C37. CONVERTERS, ELECTRICAL, LOW FREQUENCY

C38. CONVERTERS, ELECTRICAL, POWER FREQUENCY

Pacific Magnetic Corp., Electronic Center, Romoland, Calif. / static inverters / DESCR: develops square wave output at frequencies of 360 cycles per higher / USE: for DC-DC and DC-AC applications requiring frequency of 60 cycles and higher / $45 to $250 / C36

C39. CONVERTERS, INFORMATION

Autonetics Industrial Products, 3400 E. 70th St., Long Beach, Calif. / VersaTape Converter / DESCR: off-line paper tape preparation unit; records computer instructions and data on punched paper tape at low cost, saves valuable computer time / USE: prepares computer program tapes offline; manual 10-key keyboard / $2500 selling price; $100 per month lease price / C39

Beckman Instruments, Inc.

Benson-Lohner Corp.

Computer Equipment Corporation

Delco Radio Div., General Motors Corp.

DI/AN Controls, Inc.

Digital Development Corp.

Electro Instruments, Inc. -- see A3

General Data Corp., 1250 N. Parker St., Orange, Calif. / data processing accessories / DESCR: Converters; analog-to-digital and digital-to-analog. Multiplexers; operational amplifiers; generator, parity check / / C39

IMC Magnetics Corp., Westmin Div.

International Business Machines Corp., Data Processing Div., 112 East 20 Rd., White Plains, N.Y. / IBM 63 Card Controlled Tape Punch / DESCR: the 63, consisting of card reading and tape punching units, reads alphanumeric information in IBM punched cards and perforates 5-track telegraphic paper tape with that data / USE: to convert data from punched cards to telegraphic tape that can be transmitted by commercial wire services / Monthly rental $75; selling price $3600. All prices exclusive of tax / C39

International Business Machines Corp., Data Processing Div. -- see C47 and C48

Librascope Div., General Precision, Inc., 800 Western Ave., Glendale 1, Calif. / shaft position-to-digital converters / DESCR: a line of 31 converters including Size D, natural binary, binary-coded decimal, non-contact magnetic, Gray code, and nonlinear types / USE: data conversion / $176 to $1300 / C99

Lloyd Industries


C40. CONVERTERS, INFORMATION, ANALOG TO DIGITAL

Atlas Precision Products Co. Div. of Pralleltronics Inc., Beckman Instruments, Inc.

The Bendix Corp., Eclipse-Pioneer Div. -- see C2A

Capitol Sec. Systems Corp. -- see S9

Dutex Corp.

Dresser Electronics, SIE Div., a division of Dresser Industries, Inc.

Electro Instruments, Inc. -- see A3


Fischer & Porter Co., 330 Warminster Rd., Warminster, Pa. / analog-to-digital recorder / DESCR: analog-to-digital instrument records values in binary-decimal punched tape form; simultaneously supplies digital information in the form of electrical contacts / USE: may be used for telemetrying if desired. Tape can be read directly or translated in standard punched tape or cards for computer processing / $300 to $500 / C40

FMA, Inc.

General Data Corp. -- see C39

General Mills Electronics Group

Gunisonic, Inc., 2233 Federal Ave., Los Angeles 64, Calif. / analog pulse duration converter / DESCR: operates on principle of a square loop magnetic core with control and rundown windings. Signals can be fed into tape, punch or electronic counter which performs as monitor, controller and digitizer / USE: complete data acquisition system.
for monitoring or controlling temperature, pressure, chemical processing, atomic piles or for weighing and batching with sample and hold features available / $3000 and up, depending on number of channels required / C40

Gilmore Industries, Inc.

Gulton Industries, Inc.

IMC Magnetics Corp., Western Div. -- see C44

Lloyd Industries

NON-LINEAR SYSTEMS, INC., Del Mar Airport, Del Mar, Calif. / MODEL 15 ANALOG TO DIGITAL CONVERTER / DESCRI: One to 100 volts full scale, 15,000 complete conversions/second. Accuracy ±0.01% ±1 digit. Bipolar B-C-D or straight binary output / USE: to convert analog voltages into form needed for digital computer input / $4965 / C40

Packard Bell Computer Corp.

Raytheon Co., Communications and Data Processing Operation, 1415 Boston-Providence Turnpike, Norwood, Mass. / converters, analog-to-digital / DESCRI: ultra-high speed A/D converters for conversion rates from 200,000 to 5,000,000 per second with 5 to 10 bit quantizing accuracies / USE: converts wideband analog signals to digital form / $5000 to $13,500 / C40

Scientific Data Systems, Inc. -- see C12

Sperry Gyroscope Co., Div. of Sperry Rand Corp.

Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc. Telecomputing Services, Inc. -- see D2A

Veedee-Root Inc.

Westinghouse Electric Corp., Air Arm Div.

Winstco Instruments & Controls Co., 1535 26th St., Santa Monica, Calif. / converters, digital converter / DESCRI: change in resistance to change in frequency display on counter / - / $25 to $3000 / C40

C41. CONVERTERS, INFORMATION, CARD TO MAGNETIC TAPE

Beckman Instruments, Inc.

The English Electric Co. Ltd., English Electric House -- see D1

Gilmore Industries, Inc.

Packard Bell Computer Corp.


Remington Rand Univac -- see C24

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / card to magnetic tape converters / DESCRI: contractural data processing. Conversion equipment available at hourly rates / C41

Products and Services

C42. CONVERTERS, INFORMATION, CARD TO PAPER TAPE

American Data Machines, Inc., 7 Commercial St., Miskillsville, N.Y. / Data Converter / DESCRI: compact unit incorporating both reader and punch acoustically housed, eliminating 90% of normal punching noise / USE: creates punched paper tape from edge punched card master file / $2100 to $2800 / C42

Autometrics Industrial Products, 3400 E. 70th St., Long Beach, Calif. / Recomp X-Y Plotter / DESCRI: high-speed digital incremental plotter; provides graphic output of computer data. Fully transistorized, two axis discontinuous plotter / $5400 selling price; $220 per month lease price / C42

Autometrics Industrial Products -- see P16

Beckman Instruments, Inc.

Burroughs Corp.

Gilmore Industries, Inc.

Packard Bell Computer Corp.


The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / card to paper tape converters / DESCRI: contractural data processing. Conversion equipment available at hourly rates / C42

Systematics, a Div. of General Instrument Corp., 3216 W. El Segundo Blvd., Hawthorne, Calif. / converters / DESCRI: tape-to-card converter, card to tape converters, tape to tape converters, tape and card communication systems, data system input/output devices / - / $600 to $5000 / C42

C42A. CONVERTERS, INFORMATION, CODE

Autometrics Industrial Products -- see C39

Beckman Instruments, Inc.

Computer Control Co., 1501 34th Street, Wash., D. C. / converters / DESCRI: mechanical encoding of octal/decimal input to binary coded output via card-type code bars and SPDT snap action switches. Parity and hermetically sealed models / USE: conversion from octal or decimal input to binary-coded output / $580 / C42A

DI/AN Controls, Inc.

Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / Friden Tape-To-Tape Tape-to-Cartridge Converter / DESCRI: reads on code (5-, 6-, 7-, or 8-channel tape) and simultaneously converts to another; makes various paper tape coding systems compatible / USE: data processing, graphic addressing, teletype-setter, numerical control / - / C42A

Invac Corp.

Systematics, a Div. of General Instrument Corp. -- see C42

Trak Electronics Co., Inc., 59 Danbury Rd., Wilton, Conn. / Morse-to-Teletype Code Converter / DESCRI: solid state mil spec special purpose computer. Converts Morse from 10 to 110 wpm to electrical impulses that drive a standard teletypewriter / - / $19,000 to $50,000 / C42A

Westinghouse Electric Corp., Air Arm Div.

C43. CONVERTERS, INFORMATION, COMPUTING

Beckman Instruments, Inc.

Packard Bell Computer Corp.

Westinghouse Electric Corp., Air Arm Div.

C44. CONVERTERS, INFORMATION, DIGITAL TO ANALOG

Automation Management, Inc. -- see C23

Beckman Instruments, Inc.

Dressler Electronics, SIE Div., a division of Dresser Industries, Inc.

Electro Instruments, Inc. -- see A3

The Electro Nuclear Systems Corp.

The English Electric Co., Ltd., English Electric House -- see D1

FMA, Inc.

General Data Corp. -- see C39

Gulton Industries, Inc.

Howard-Edison Co., 1501 34th Street, Palo Alto, Calif. / hp Model 5804A Digital-to-Analog Converter / DESCRI: converts 3 digits of BCD information to an analog voltage / USE: with electronic counters for making X-Y or strip chart records / $525 / C44

IRC Magnetics Corp., Western Div., 6056 Walkover Ave., Maywood, Calif. / step-servo motors / DESCRI: variable reluctance and permanent magnet types ranging from size 5 (2.250" dia.) to size 23 (2.500" dia.). Power levels up to 100 watts. / USE: as digital to analog and analog to digital converter. Also as open loop positioning servo / - / C44

RMA Industries

Librascope Div., General Precision, Inc., 600 Western Ave., Glendale, Calif. / DIGILOG 1011 / DESCRI: solid-state converter capable of 5000 A/D or 10,000 D/A conversions per second / USE: input for computers, data logging systems, etc. / $3700 to $4700 / C44

NON-LINEAR SYSTEMS, INC., Del Mar Airport, Del Mar, Calif. / MODEL 16 DIGITAL TO ANALOG CONVERTER / DESCRI: 250,000 parallel conversions per second. ±10 volt range. ±0.01% accuracy. 0.05 ohm output impedance. B-C-D or binary input / USE: for entering digital computer output data into analog computers, recorders, etc. / $4965 / C44

Packard Bell Computer Corp.

Scientific Data Systems, Inc. -- see C12

Société D'Electronique Et D'Automatisme
C45. CONVERTERS, INFORMATION, MAGNETIC TAPE TO CARD

Autonetics Industrial Products -- see C42 and P16

Beckman Instruments, Inc.
Computer Control Co., Inc., Old Connecticut Path, Framingham, Mass. / 3C-210 Data Converter / DESCR: translates data to and from (1) magnetic tape in UNIVAC excess three code; (2) paper tape in UNIVAC II excess three code; (3) punched cards in IBM (Hollerith) 12 level code / USE: business and industry / $60,000 / C45

The English Electric Co., Ltd., English Electric House -- see D1

Packard Bell Computer Corp.

Remington Rand Univac -- see C24

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / magnetic tape to card converters / DESCR: contractual data processing, Conversion equipment available at hourly rates / C45

C46. CONVERTERS, INFORMATION MAGNETIC TAPE TO PAPER TAPE

Beckman Instruments, Inc.
Computer Control Co., Inc. -- see C45

Digitronics Corp., 1 Albertson Ave., Albertson, L.I., N.Y. / Digitronics converters / DESCR: all solid state; converts between paper and magnetic tape at high speed. Image conversion, translation, format control, compatibility with almost every type of computer system / USE: off-line / $1400 to $2400 a month rental / C46

Packard Bell Computer Corp.


Tally Register Corp., 1310 Mercer St., Seattle 9, Wash. / magnetic tape to paper tape converter / DESCR: prepares paper tape from magnetic tape. Conversion at 60 paper tape characters/second. Full character verification, and duplication of paper tapes is available / USE: machine tool control program tapes, conversion of data from one computer to another / $55,000 with tape deck / C46

C46A. CONVERTERS, INFORMATION, MAGNETIC TAPE TO MAGNETIC TAPE

Autonetics Industrial Products -- see M2

Beckman Instruments, Inc.
Computer Control Co., Inc. -- see C45

Packard Bell Computer Corp.

C47. CONVERTERS, INFORMATION, PAPER TAPE TO CARD

Autonetics Industrial Products -- see P16

Beckman Instruments, Inc.
Computer Control Co., Inc. -- see C45

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N.Y. / IBM 46 Tape-to-Card Punch / DESCR: reads alphabetic information from a punched paper tape (Model 1: 5 and 6 track) (Model 2: 8 track), and converts it into IBM punched cards / USE: for reading of paper tape and conversion to punched cards / Model 1: monthly rental $140, selling price $5700. Model 2: monthly rental $135, selling price $5450. All prices exclusive of tax / C47


Packard Bell Computer Corp.
The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / magnetic tape to paper tape converters / DESCR: contractual data processing. Conversion equipment available at hourly rates / C47

Systematics, a Div. of General Instrument Corp. -- see C42

Underwood Corp. -- see D1

C48. CONVERTERS, INFORMATION, PAPER TAPE TO MAGNETIC TAPE

Autonetics Industrial Products -- see M2

Beckman Instruments, Inc.
Computer Control Co., Inc. -- see C45

Digitronics Corp. -- see C46

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N.Y. / IBM 7765 Paper Tape to Magnetic Tape Converter / DESCR: solid-state 7765 transfers data from punched paper tape (chad or chadless) to magnetic tape (200 characters per inch Mylar) at 150 characters a second / USE: conversion of punched paper tape to magnetic tape for direct computer input / Monthly rental $1475; selling price $69,500. All prices exclusive of tax / C46

Omnitronics, Inc., Subsidiary of Borg-Warner Corp.

Packard Bell Computer Corp.

Systematics, a Div. of General Instrument Corp. -- see C42

Tally Register Corp., 1310 Mercer St., Seattle 9, Wash. / paper tape to magnetic tape converter / DESCR: takes information on paper tape; converts to magnetic tape in variety of formats. Conversion at 120 paper tape characters/second. Uses 5 through 8 level tapes / USE: to convert information from typewriters to computer input, etc. / $26,000 / C48

Underwood Corp. -- see D1

C49. CORDS

Engineered Electronics Co.

C50. CORES

Ferroxcube Corp. of America

Magnetics Inc. -- see C52

Raytheon Co., Industrial Components Div.

C51. CORES, FERRITE

Ferroxcube Corp. of America, 2900 E. Bridge St., Saugerties, N.Y. / ferrites / DESCR: pot cores, memory cores, planes and stack, rods, tubes, plugs, switch cores, and recording heads / USE: computers, coils, transformers, recorders / $5 and up / C51

Indiana General Corp., Electronics Div.

Lockheed Electronics Co., Arctronics and Industrial Products Div.

Radio Corp. of America, Semiconductor and Material Div.

Superex Electronics Corp.

C52. CORES, MAGNETIC

Alden Products Co.
The Arnold Engineering Co. -- see M1

Ferroxcube Corp. of America -- see C51

Magnetics Inc., Butler, Pa. / bobbin cores / DESCR: high permeability nickel, in widths from 1/32" to 1/4"; tape thickness from 1/80 mil to 1 mil, in Orthonol and 4-79 Permalloy / USE: for computer shift registers and buffers / $54 per 100 to $2 per 100 / C52

C53. COUNTERS

Beckman Instruments, Inc.

Bowmar Instrument Corp.

DI/AN Controls, Inc.

Engineered Electronics Co.

Gordon Enterprises

Raytheon Co., Industrial Components Div.

The Walkirt Corp.

C54. COUNTERS, ELECTRONIC

ANDEX INSTRUMENTS INC., 7617 Hayvenhurst Ave., Van Nuys, Calif. / DECADE COUNTER MODULE / DESCR: low cost solid state decade counter module with Nixie readout; 100 KC; fits 1-3/4" high rack mount; low power consumption; one power supply voltage required / USE: for display type decade counters / $75 to $95 / C54

ANDEX INSTRUMENTS INC., 7617 Hayvenhurst Ave., Van Nuys, Calif. / DECADE COUNTER MODULE / DESCR: low cost solid state decade counter module with Nixie readout; 100 KC; fits 1-3/4" high rack mount; low power consumption; one power supply voltage required / USE: for display type decade counters / $75 to $95 / C54

Computers and Automation for June, 1962
Autonetics Industrial Products -- see C54
Automated Procedures Corp. -- see T9
Automation Engineers
Automation Industral Products -- see T9

Bell Aerosystems Co., F.O. Box L, Buffalo 5, N.Y. / automatic computer processing / DESCR: five computers -- IBM 607, two 1401A, 704 and 7090 / USE: engineering computation, accounting, payroll, payrolls, budgets / -- / D1

The Bendix Corp., Eclipse-Pioneer Div., Teterboro, N.J. / Bendix Propulsion Data System / DESCR: provides a continuous check of engine performance, performs needed preflight and enflight engine computations, elin-...
automatic business machines tabula-
tors, computers a "common language" perforated tape / USE: sequentially combines fixed data, variable data, identification data, time and count data / $5000 to $5100 / D2

American Data Machines, Inc., a / Record-a-matic / DESCR: prints, punches in one operation weekly time on single 00-column IBM card which is direct input to all data processing systems now manufactured / USE: time clock / $1195 / D2

Automation Management, Inc. -- see C23 Autonetics Industrial Products -- see T9

Beckman Instruments, Inc.
The Bendix Corp., Eclipse-Pioneer Div. -- see D1

The Bristol

Bytex Corp., 60 Hunt St., Newtown 56, Mass. / multi-channel strain gage data loggers / DESCR: modular digital/recording systems for all combinations of strain gage and strain transducers / USE: may be read out on typewriter, tape punch, printer / $25,000 to $50,000 / D2

Comdata Inc. -- see T3

Consolidated Electrodynamics Corp.
Dashew Business Machines, Inc.
Datex Corp.

Dresser Electronics, SIE Div., a division of Dresser Industries, Inc.
The Electro Nuclear Systems Corp.

Electrometer, Inc. -- see C54

Ess Gee, Inc.

Fleet-Pak Porter Co. -- see C40

FMA, Inc.
The Foxboro Co.

General Dynamics/Electronics, P. O. Box 2449, San Diego 12, Calif. / S-C 4020 Computer Recorder / DESCR: records data from large scale digital computers onto 35mm microfilm and/or photorecording paper. Output takes form of plotted curves, tabular data, alphaneumic printing or combination; 17,400 characters/second or 12,500 graph plotting points/second / USE: on-line, off-line computer systems / $214,440, options extra / D2

General Electric Co., Computer Dept.

Gimmini Controls Corp.

Gilmore Industries, Inc.

Gordon Enterprises

Hagan Chemicals & Controls, Inc., Rte. 60 & Campbell's Run Rd., Pittsburgh 30, Pa. / Hagan "Optimate" Strip Chart Recorder / DESCR: electronic, solid-state, servo-powered 4-inch chart. One to 3 pens all in one case. 1-5 mA, 1-9 v or other standard DC or AC signals / USE: to record such variables as temperature, pressure or flow / $235 for single pen, $200 for each additional pen / D2

Hathaway Instruments, Inc.

Heinelt-Packard Co., 1501 Page Mill Rd., Palo Alto, Calif. / digital recorders / DESCR: prints to 11 columns of digits, rates to 5 lines/second, amplifiers to accept BCD, 10-line, or voltage-coded input; some with analog output for X-Y, strip chart recording / USE: with electronic counters, DWM's, other equipment to record data / $1150 to $2250 / D2

Houston Instrument Corp., P. O. Box 22254, Houston 27, Tex. / recorders / DESCR: manufacture X-Y recorders, strip chart recording, magnetic recording heads; voltmeters and electronic instruments / - / D2

Invac Corp.

LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / data recording equipment / DESCR: complete analog and digital recording systems / USE: data logging, aux., buffer and working (central) storage / - / D2

Librascope Div., General Precision, Inc., 800 Western Ave., Glendale 1, Calif. / Model 210 X-Y Plotter / DESCR: X-Y recorder with calibration accuracy of 0.05%, and push-button controls / USE: graphic presentations for analog data / $1800 to $2800 / D2

Midwestern Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7509, Tulsa 27, Okla. / strip chart recording equipment / DESCR: digital and analog tape transport, facsimile recorders, photographic and direct process oscillographs / USE: computer systems and information storage equipment / $1,500 to $17,000 / D2

Miles Reproducer Co., Inc.

Monitor Systems, Inc.

F. L. Moley Co.
The National Cash Register Co.
The Perkin-Elmer Corp., Main Ave., Norwalk, Conn. / digitized infrared spectro-photometer / DESCR: provides data link between laboratory analytical instruments and the many general purpose computers. The digitized spectro-photometer automatically produces analysis data not generally obtainable by conventional methods / USE: used with any instrument or device which produces data as a function of time or count versus time on a calibrated chart. Available in single, dual, triple or quadruple pens and multi-point models on 8", 11" or 25" / USE: in industrial plants, laboratories, etc. / $720 to $3000 / D2

Wiancko Engineering Co.

D2A. DATA REDUCTION EQUIPMENT

Automation Management, Inc. -- see C23

Beckman Instruments, Inc.

Bender-Lehmer Corp.
The Electro Nuclear Systems Corp.

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 10 Industry St., Toronto 15, Ontario, Can. / data rate changer / DESCR: magnetic tape unit, using loop of magnetic tape. High-speed input, slow-speed output, and vice versa. Synchronous or asynchronous operation. Transistorized read/write and control circuitry / USE: digital data transmission system / - / D2A

Fisk & Porter Co., Inc. -- see C40

General Dynamics/Astronautics a Div. of General Dynamics Corp.

Genisco, Inc.

Gordon Enterprises

Gulton Industries, Inc.

Industrial Nuclearco, Inc. -- see A6

Invac Corp.

Jonker Business Machines, Inc. -- see D2

LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / data reduction equipment / DESCR: time compression devices and systems, both standard and custom designed / USE: radar, sonar, communications, correlation data systems / - / D2A

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see D2

Non-Linear Systems, Inc.

Sanborn Company, 175 Wyman St., Wal-tham 54, Mass. / data-amplifiers / DESCR: floating input-floating output amplifiers with 0-10KC bandwidth;
DC to 100 CPS bandwidth. Outputs can be fed to digital voltmeters, tape recorders, oscilloscopes, etc. Models with higher power outputs are available to drive high frequency galvanometers / $400 to $800 (price does not include 9-channel or single channel power supply) / $2CA

Scientific Data Systems, Inc. — see C12, C24

Stellometrics
Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc.
Teledynamics Services, Inc., 8949 Reseda Blvd., Northridge, Calif. / data reduction services / DESCR: services available for the measurement of any type of camera film, oscilloscopes, paper charts, etc. Computer programming and computing services available on hourly basis / USE: engineering problems based upon examination of requirements / $2DA

Wang Laboratories Inc., 12 Huron Drive, Natick, Mass. / special purpose data reduction systems / DESCR: systems to measure analog voltage signals and/or shaft positions, translate, and provide outputs as displays, and/or print-out, and punch-out on paper tape or IBM cards / USE: to provide immediate calculated results or inputs for a computer / $1000 to $15,000 / $2DA

Westinghouse Electric Corp., Air Arm Div.

D3. DELAY LINES (COMPUTER TYPES)

ANDERSON LABORATORIES INC., 501 Now Park Ave., West Hartford, Conn. / DIGITAL DELAY LINES / DESCR: Custom design, engineering and manufacturing of solid digital, magnetostrictive, and electromagnetic delay lines. Closed loop serial memory units at data rates from 100 Kc to 30 mc / - / - / $3D

Arenberg Ultrasonic Lab., Inc.
Audio Instrument Co., Inc. — see T5
Beckman Instruments, Inc.
Richard D. Brew & Co., Inc.

Cornell-Dubilier Electronics, div. of Federal Pacific Electric Co.
Corning Electronic Components, Corning Glass Works
El-Ray Manufacturing Co., 4300 N. California Ave., Chicago 18, Ill. / delay lines / DESCR: both lumped constant and distributed constant types / USE: delay of pulses / $56 to $280 / D3

Ferranti Electric, Inc.
General Electric Co., Specialty Devices Operation

Products and Services
LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / delay lines / DESCR: ultrasonic and digital lines (quartz, glass & mercury). Custom-engineered with delays ranging from less than one to more than 1000 microseconds / USE: memory device in computers / D3

Paradynamics Inc., Control Electronics Div.
Polyphase Instrument Co., East 4th St., Bridgeport, Pa. / magnetic components / DESCR: pulse and speciality transformers; magnetic components; delay lines; magnetic amplifiers; filters / USE: circuit components / D3

Raytheon Co., Industrial Components Div.
Sangamo Electric Co., 1301 North 11th St., Springfield, Ill. / delay lines / DESCR: ultrasonic delay lines manufactured by MICROSONICS, a subsidiary of Sangamo Electric Co., are completely passive devices exhibiting wide bandwidth characteristics / USE: built for both commercial and military applications / $2D

F. W. Sickles Div., General Instrument Corp.
Technitrol, Inc., 1952 E. Allegheny Ave., Philadelphia 34, Pa. / delay lines / DESCR: complete line of stock distributed constant delay lines. In addition, magnetostrictive delay lines 500 microseconds to 5 milliseconds delay, 1 and 2 megacycle bit rates / USE: bit storage and delay / $2.50 to $250 / D3

Volor Instruments, Inc., 12314 Crenshaw Blvd., Gardena, Calif. / delay lines / DESCR: lumped constant, fixed, tapped, continuously variable in microsecond, nanosecond and millisecond regions / USE: temporary storage / $4 to $3000 / D3

Wright Engineering Co., Inc.

D4. DESK CALCULATORS

Friden, Inc., 3250 Washington Ave., San Leandro, Calif. / calculating machines / DESCR: full line of desk calculators including Model SRW (automatic square root) and Model SRQ (automatic square root and automatic squaring) / USE: solving mathematical problems / - / - / D4

Underwood Corp.

D5. DIASLS

Beckman Instruments, Inc.
Monroe Industries, Inc. — see V1
Reeves Instrument Corp.
Sunchine Scientific Instruments — see A7

D6. DIFFERENTIAL ANALYZERS

Gulton Industries, Inc.

Litton Systems, Inc., Guidance & Control Systems Division — see C24, C24A

Packard Bell Computer Corp.
Reeves Instrument Corp.

D7. DIODES (COMPUTER TYPES)

Calvert Electronics Inc.
Clevite Transistor
Fairchild Semiconductor, 545 Whistman Rd., Mountain View, Calif. / diodes / DESCR: planar and planar-epitaxial diodes / USE: components for logic circuits: switches, gates, flip-flops, etc. / varies / D7

Hughes Semiconductor Division
International Diode Corp. — see D8

International Rectifier Corp.
Motorola Semiconductor Products Inc. — see S2

Nuclearic Products Co., Inc.
Packard Bell Computer Corp.
Radio Corp. of America, Semiconductor and Materials Div.
Raytheon Co., Semiconductor Div.
Sanders Associates, Inc.
Sylvania Electric Products Inc., Semiconductor Div. — see S2

Texas Instruments Inc. — see C26

Thermoson, Inc.
Transitron Electronic Sales Corp.

D8. DIODES (COMPUTER TYPES) GERMANIUM

Clevite Transistor
Hughes Semiconductor Division
International Diode Corp., 90 Forrest St., Jersey City, N.J. / diodes / DESCR: fast-switching germanium crystal diodes, switching at a fraction of a nanosecond / USE: in switching devices such as computers and other circuits / D8

Motorola Semiconductor Products Inc. — see S2

Radio Corp. of America, Semiconductor and Materials Div.
Raytheon Co., Semiconductor Div.
Sylvania Electric Products Inc., Semiconductor Div. — see S2

Texas Instruments Inc. — see C26

D10. DIODES (COMPUTER TYPES) SILICON

Clevite Transistor
Fairchild Semiconductor — see D7

Hughes Semiconductor Division
International Rectifier Corp.
Motorola Semiconductor Products Inc. — see S2

Radio Corp. of America, Semiconductor and Materials Div.
Raytheon Co., Semiconductor Div.
Sperry Semiconductor Div. of Sperry Rand Corp.
Sylvania Electric Products Inc., Semiconductor Div. -- see S2
Texas Instruments Inc. -- see C26
Texas Instruments Inc., Semiconductor Components Div. -- see C26

D11. DISCS, MAGNETIC

**BRYANT COMPUTER PRODUCTS, DIV. OF EX-CELL-O CORP.**, 850 Ladd Rd., Walled Lake, Mich. / MAGNETIC DISC FILES / DESCR: Series 4000 random access disc files of modular construction, with capacities from 30,000,000 to 720,000,000 bits. Digitally-addressed, mechanical positioner for simultaneous positioning of up to 200 heads in 100 milliseconds. Parallel or serial recording. Selective alteration of information. Discrete clocking. Speeds of 900 or 1200 RPM / USE: commercial, industrial, military applications; communications / - / D11

**LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / magnetic discs / DESCR: standard or custom Bernoulli Disc devices and complete memory/storage systems. Rotating magnetic data storage device using Bernoulli principle to stabilize flexible recording medium / USE: computer or buffer memory; commercial or military applications / D11

Norton Associates, Inc. -- see H1
The Whitmon Mfg. Co., Route 6 and New Britain Ave., Farmington, Conn. / computer magnetic drumming / - / - / $750 to $12,000 / D11

D12. DRUMS, MAGNETIC

**BRYANT COMPUTER PRODUCTS, DIV. OF EX-CELL-O CORP.**, 850 Ladd Rd., Walled Lake, Mich. / MAGNETIC STORAGE: DRUMS / DESCR: standard 3", 5", 7", 10", 12", and 182" diameters; capacities to 25,000,000 bits; speeds to 60,000 RPM; access time low as 0.25 ms. Also special designs and complete systems. Fixed or aerodynamic heads. High pulse packing density / USE: commercial, industrial, military applications; general storage or buffer from $975 / D12

Cognitronics Corp., 549 Pleasantville Rd., Briarcliff Manor, N.Y. / magnetic storage drums / DESCR: high speed, compact memory units with speed operation up to 25,000 rpm. Matching read/write circuitry and associated digital electronics available / USE: digital storage, buffer applications, data reduction / $1500 to $10,000 / D12

Consolidated Controls Corp.

**Products and Services**

Digital Development Corp.
Ferranti Electric, Inc.
Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry Blvd., Toronto 15, Ontario, Can. / magnetic memory drum Type 217A / DESCR: MIL-E-5400C; three inc diameter, 11,250 RPM. Storage capacity 60,000 bits on 44 tracks / USE: buffer or program store; airborne computers / - / D12

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a* / magnetic memory drum Type 347 / DESCR: 10.5 inch diameter. Up to 1800 RPM. Storage capacity 5,000,000 bits on 576 tracks / USE: computer memory store; communications switching store / - / D12

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a* / magnetic memory drum Type 364 / DESCR: 12.5 inch diameter, 1800 or 3600 RPM. Storage capacity approximately 1,200,000 bits on 224 tracks. Air bearing/air servo head mounting columns / USE: computer memory / - / D12

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a* / magnetic memory drum Type 371 Series / DESCR: 10 inch diameter drums in 4, 9 and 12 inch lengths with 100, 200 and 300 tracks respectively; storage capacities 500,000 to 1,500,000 bits; 10-year grease packed AEC 7 ball bearings; 1800 or 3600 RPM / USE: computer memory / - / D12

FMA, Inc.
HBB-Singer, Inc., a subsidiary of The Singer Mfg. Co. -- see C24

LFE Electronics, Computer Products Division, A division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / magnetic drums / DESCR: HD file drum, 1800 or 3600 RPM. Storage capacity approximately 1,200,000 bits on 224 tracks. Air bearing/air servo head mounting columns / USE: computer memory / - / D12

Magne-Head Div., General Instrument Corp.

**MINNEAPOLIS-HONEYWELL REGULATOR CO., AERONAUTICAL DIV., FLORIDA FACILITY, 13350 U.S. Highway 19, St. Petersburg, Fla. / COMPUTER MEMORY DRUMS / DESCR: 24", 5", and 6" high packing density, internal stator, rugged / USE: as memory device in aircraft, missiles, shipboard, and land-based message distribution systems / - / D12

Norton Associates, Inc. -- see H1

**REX-MOUND-FAIRCHILD INC., 610 So. Arroyo Pkwy., Pasadena, Calif. / MAGNETIC DRUMS / DESCR: commercial and military; magnetic heads, read/write amplifiers and associated electronics; packed, engraved and recorded clocks / USE: computer memories / - / D12

Remington Rand Univac -- see C24
Sperry Gyroscope Co., Div. of Sperry Rand Corp.
Univac Military Operations of Sperry Rand Corp.
The Whitmon Mfg. Co. -- see D11

E0. ECONOMIC RESEARCH

Associated Sales Analysts, Inc. -- see C27
Automation Engineers
Battelle Memorial Institute -- see R12A
Bonne & Moore Associates, Inc., 6910 Fannin, Houston 25, Tex. / economic research / DESCR: consulting services in economic analyzes for industrial corporations -- manufacturing planning, marketing evaluation and strategy, investment analysis / - / E0
C-E-I-R, Inc.
Hollander Associates, P. O. Box 2276, Fullerton, Calif. / economic research / DESCR: technically-directed consulting and studies of computer-related products and industries, domestic and foreign. Evaluations, market identifications, and competitive comparisons by a unique analytical procedure / service / - / E0

KCS Ltd.
Midwest Research Institute
The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / economic research / DESCR: analytical services to aid in the formulation and design of the solution to data processing problems / USE: economic forecasting; survey analysis / - / E0
Statistical Tabulating Corp. -- see C30

E1. EDUCATION

The American University -- EDPL
Univac Corp., 150 Causeway St., Boston 14, Mass. / Univac Printer maintenance and servicing training program / DESCR: an intensive, comprehensive 3 week course, limited to 10 students per class, on the theory of operation, care, maintenance and servicing the Series 4-1000 High Speed Printer / USE: maintaining or field service repair of Univac high speed printer in data processing installations / $200 / E1

Business Electronics Inc., 420 Market St., San Francisco 11, Calif. / home study courses in computer programming / DESCR: courses include programming technology and systems design in terms of business applications. General programming techniques and specific training for IBM 1401 Data Processing System / USE: training, education / $135 to $175 / E1

Control Technology, Inc.
Daniel, Mann, Johnson & Mendenhall
Duke University, Computing Laboratory
Executive Computer Utilization, 161 W.
Glossary of Computer Terms

"Computers and Automation's" Fifth Edition of the "Glossary of Terms in Computers and Data Processing". 96 pages long, this edition contains over 860 computer terms and expressions with their definitions explained so that people new to the computer field can understand them. Returnable for full refund within 10 days if not satisfactory...$3.95

Please send your resume to:
R. J. GARNER
Personnel Manager

Packard Bell
Computer

1905 ARMACOST AVENUE
Los Angeles 25, California
GRanite 8-0051, Ext. 6107, 6108
An equal opportunity employer
F1. FACSIMILE EQUIPMENT

General Dynamics/Electronics
LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. — see D2
Midwestern Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7509, Tulsa 10, Okla. / 734 Magnetic Tape Facsimile Recorder/Reproducer / DESCR: stores facsimile signals indefinitely, high and low speed scanning / USE: information storage and retrieval, line buffering, high speed data transmission / $8000 to $10,000 / F1
Midwestern Instruments, Inc. — see D2, I3

F1A. FANS AND BLOWERS

Rotron Manufacturing Co., Inc., Hasbrouck Lane, Woodstock, N. Y. / fans, blowers, flowmeters, airflow switches / DESCR: simulating devices, i.e., fans, blowers and related proprietary items used primarily in the cooling of electronic equipments on land, shipboard and airborne (airplane and missile) applications. Rotron's products are built to either government or commercial standards and are principally the result of its own advanced engineering designs and manufacture / $5 to $300 / F1A

F2. FASTENERS AND FASTENING DEVICES

Alden Products Co.

F3. FIRE CONTROL EQUIPMENT

American Bosch Arma Corp.
Gordon Enterprises
LFE Industries
Librascope Div., General Precision, Inc., 808 Western Ave., Glendale 1, Calif. / fire control systems / DESCR: sensing and digital fire control systems for antisubmarine weapons / USE: Librascope-designed systems on 80% of Navy surface AW ships / F3
Litton Systems, Inc., Guidance & Control Systems Division — see C24, C24A
Maxxon Electronics Corp.
Sperry Farragut Co., Div. of Sperry Rand Corp.

F4. FIRE DETECTING & EXTINGUISHING EQUIPMENT

Femnal, Inc.
Kidde Ultrasonic & Detection Alarms Div., Walter Kidde & Co., Inc.
Walter Kidde & Co., Inc., Industrial & Marine Division

F5. FLOORS

Products and Services

F6. FUSES

Littelfuse, Inc.

G1. GENERATORS, FUNCTION

Beckman Instruments, Inc., Berkeley Div.
California Instruments Corp.
GNS Laboratories, a div. of Columbia Broadcasting Systems, Inc.
Elenco, Inc., 1231 Colorado Ave., Santa Monica, Calif. / electronic noise generator / DESCR: electronic device providing as output a random voltage used as an input to an analog computer. Analog computer component referred to as an input device / USE: input device or function generator for an analog computer / $995 to $1995 / G1
General Computers, Inc., 9000 W. Pico Blvd., Los Angeles 35, Calif. / Model 100 Diode Function Generator / DESCR: general purpose diode function generator featuring punched card programming. Functions can be changed in seconds and retained for years to 0.02% accuracy / USE: general purpose function generator for computation and simulation / $2750 / G1
General Data Corp. — see C39
GPS Instrument Co., Inc.
Howlett-Packard Co.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., Florida Facility
Radiation Incorporated
Strand Engineering Co.
Vernistat Division of the Perkins-Elmer Corp.
The Walkirt Co.

G2. GENERATORS, FUNCTION, ELECTRONIC

Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / diode function generator / DESCR: a four-quadrant unit employing diode cards with no permanently-committed amplifiers / USE: switches set breakpoint and slope polarity for each segment. Calibrated potentiometers set desired breakpoint and slope / on request / G2
Dian Laboratories, Inc., *A / photo-electric function generator / DESCR: photographed mask of a four-quadrant unit employing cathode-ray tube and photomultiplier tube. Circuity constant is used to trace the desired function / USE: generation of arbitrary functions / on request / G2
Elenco, Inc. — see G1
Howlett-Packard Co.
Intercontinental Dynamics Corp.
Pardynamics Inc., Wave Particle Div., 10 Stepar Place, Huntington Station, L.I., N.Y. / microwave swept signal sources / DESCR: compact light-weight signal source combining reliability, versatility, ease of adjustment, and operator convenience; frequency range 400 mc to 75.0 Gc PM 995's, high minimum power output / USE: signal sources in laboratory, production and field measurements / $2500 to $15,000 / G2
Radiation Incorporated
Reeves Instrument Corp.

G3. GENERATORS, FUNCTION, MECHANICAL

Sanjeno Electric Co., 1301 North 11th St., Springfield, Ill. / induction generator / DESCR: complete line of miniature two phase generators. With one phase excited it produces an output voltage proportional to the speed of the shaft / USE: system stabilizer or damping generator in a closed loop servo / $40 to $65 / G3

G4. GEOPHYSICAL APPARATUS

Dresser Electronics, SIE Div., a division of Dresser Industries, Inc.
Fairchild Controls Corp.
Gordon Enterprises
Morgan Instrument Corp.
Nortonics Div., a div. of Nortonics Corp., Electronic Systems & Equipment Dept.
Nortonics, a div. of Nortonics Corp., Precision Products Dept.
Sperry Gyroscope Co., Div. of Sperry Rand Corp.

H1. HEADS, MAGNETIC

The Electro Nuclear Systems Corp.
LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / magnetic heads / DESCR: standard and custom heads for digital and analog recording / USE: drums and discs / H1
Edwin A. Lipps Engineering
Magne-Head Div., General Instrument Corp.
Midwestern Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7509, Tulsa 10, Okla. / magnetic heads / DESCR: 7, 0, and 16 channel digital heads, high resolution analog and audio heads, precision gap alignment, shielded construction / USE: magnetic tape recording and playback / $100 to $2000 / H1
Potter Instrument Co., Inc.
Redmond-Fairchild Inc. — see D12

72
Dresser Electronics, SIE Div., a division of Dresser Industries, Inc. LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc. -- see H1 Edwin A. Lippis Engineering Midwestern Instruments, Inc. -- see H1 Norton Associates, Inc. -- see H1 Potter Instrument Co., Inc. -- see H1

H3. HEADS, MAGNETIC, RECORDING

Dresser Electronics, SIE Div., a division of Dresser Industries, Inc. Ferroxcube Corp. of America Houston Instrument Corp. -- see D2 LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc. -- see H1 Edwin A. Lippis Engineering Lockheed Electronics Co., Avionics and Industrial Products Div. Midwestern Instruments, Inc. -- see H1 Norton Associates, Inc. -- see H1 Potter Instrument Co., Inc. -- see H1

11. INDICATORS (COMPUTER TYPES)

Computer Logic Corp., 11800 W. Olymopic Blvd., Los Angeles 64, Calif. / decimal indicators DI-20 series / DESCR: incandescent type numeric indicators with 75 degree viewing cone, high light output, programmable digit color. Various sizes / USE: as system and instrument readouts for various decimal codes / $22.50 to $50 / I1 Daystrom, Inc., Weston Instruments Div. Dialight Corp. -- see L1 Engineered Electronics Co., 1441 E. Chestnut Ave., Sgnta Ana, Calif. / R-Series Minisig® Indicators / DESCR: sensitive indicator devices designed to operate from low-level signals; built-in amplifier minimizes loading of driving circuit / USE: systems designed for small signal excursions / $5.60 to $32.50 each depending on quantity and type / I1 The A. W. Haydon Co. Hewlett-Packard Co. Non-Linear Systems, Inc. Pendar, Inc. Raytheon Co., Industrial Components Div. Weston Instruments Div.

12. INFORMATION RETRIEVAL DEVICES

Automation Engineers, 364 W. State St., Trevorton, 8, N.J. / random-access file system / DESCR: random retrieval of file information, uses paper cards, punched cards, punched tape or magnetic cards; custom data to specifications / USE: separate unit or integrated into a data processing system / cost depends upon custom design specifications / I2

Products and Services

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio / 750 Information System / DESCR: solid-state system gathers analog data; scms, alarms, and logs digitally / USE: to provide simplified information display to plant operators / I2

Benson-Lehner Corp.
Consolidated Electrodynamic Corp.
Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 1 Industry St., Toronto 15, Ontario, Can. / rapid access look-up system (RALUS) / DESCR: locates coded microfilmed text automatically from keyboard input; typical look-up time for a loop of 500 microfilm frames is 1% seconds / USE: consulting of catalogues; telephone order handling / I2

FMA, Inc., 142 Nevada St., El Segundo, Calif. / FileSearch / DESCR: electronically retrieves documents stored on coded 35mm film. Consists of three units of office-sized equipment / USE: rapid retrieval of documented information / $114,500 to $129,500 / I2

General Kinetics Inc.
Invac Corp.
Jonker Business Machines, Inc., 26 N. Summit Ave., Gaithersburg, Md. / Termatremx and Minimatremx / DESCR: utilize principle of "concept coordination". Termatremx devices drill and readout full-size 10,000 item, superimposable cards; Minimatremx film devices and system item capacity / USE: information retrieval and correlation / $500 to $1,000 / I2

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc., 905 Commonwealth Ave., Boston 15, Mass. / $9000, random access storage and display system / DESCR: provides for storage of huge amounts of data coded in machine language; average access time, approximately 0.2 seconds. Selected reports can be displayed on television type tube or printed out / USE: for indexing, library systems, situational and tabular displays / $100,000 and up / I2

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc., *a / SM3 Display / DESCR: system accepts 5, 6, 7, or 8 bit characters from computers, keyboards, or communications lines; displays message on television type tube; messages can be stored and updated within system, called up, and displayed instantly as required / USE: to display transaction data, stocks, reservations, inventory status, schedules, equipment status / $15,000 to $60,000 / I2

Midwestern Instruments, Inc. -- see F1

Radio Corp. of America, Electronic Data Processing


Strand Engineering Co. -- see V1

I2A. INFORMATION ENGINEERING

Auerbach Corporation -- see C30 Battelle Memorial Institute -- see R12

Banzer Moore Associates, Inc., 6910 Fannin St., Houston 25, Tex. / information engineering services / DESCR: consulting in analyzing and developing improved means for handling the flow of information in industrial concerns; several proprietary computer programs developed for this task / I2A

International Business Machines Corp.
Federal Systems Division

Jonker Business Machines, Inc., Information Services Div., 26 N. Summit Ave., Gaithersburg, Md. / Information services / DESCR: consulting services in information system design, installation, and operation. Contract indexing, abstracting, and publication of abstract bulletins and indexes available. Training provided in above areas / USE: by proposed or operating information systems / $200 per day plus travel and expenses / I2A

Libramcope Div., General Precision, Inc., 808 Western Ave., Glendale 1, Calif. / Libramcope Operations Control System / DESCR: computer-based, electronic, data-gathering and reporting system for real-time management control / USE: control of complex industrial, military, or government operations / I2A

National Computer Analysts, Inc.

H. M. Semarno

Telecomputing Services, Inc. -- see C27

I.3. INPUT/OUTPUT DEVICES

Autometrics Industrial Products -- see C39, T9

Benson-Lehner Corp.

Budd Electronics

Burroughs Corp.

Comptum Inc. -- see T3

Consolidated Electrodynamic Corp.

Datamec Corp.

Datex Corp.

Daystrom, Inc., Weston Instruments Div.

Dennison Mfg. Co., Machines Systems Div. -- see P16

Electro Instruments, Inc. -- see A3

N. V. Electrotec

The Electro Nuclear Systems Corp.

Elgeno, Inc. -- see G1

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 1 Industry St., Toronto 15, Ontario, Can. / data transmitter-receiver / DESCR: up to 1300 bits/second without adjustment. Fully tested on telephone circuits to 5000 miles in length. Higher speed operation up to 2400 bits/second on shorter circuits / USE: for transmission of high-speed data over telephone lines / I3

COMPUTERS and AUTOMATION for June, 1962
The Foxboro Co.
Friden, Inc.
Midwestern Instruments, Inc.
HRB-Singer, Inc.
Omnitronics.
LFE Electronics. Systems Division. A
Litton Systems, Inc
National Data
Invac Corporation. 26 Fox Rd
Jonker Business Machines, Inc.

Model ACPTS / DESCR: accepts data
projects, and punches a paper tape
for subsequent processing / USE:
general data processing / - / 13
General Data Corp. -- see C9
General Dynamics/Electronics
HRB-Singer, Inc., a subsidiary of the
Singer Mfg. Co. -- see C24A, R6
Information Products Corp., 156 Sixth St.,
Cambridge, Mass. / random access
file interrogator / DESCR: high-speed
keyboard and CRT display device
to interconnect random access
files to remote user. User can add
data to file; update, change,
delete stored data; request data
from file / USE: in banking, reservations,
inventory control, etc. / $2000 to $10,000 / 13
Information Corporation, 26 Fox Rd.,
Waltham 54, Mass. / peripheral input/
output equipment and punched paper
tape / DESCR: alpha-numeric and
numeric photoelectric keyboards;
O-20 cps paper tape punches, photo-
electric readers; 0-250 cps punched
paper tape photoelectric readers;
on line and off line input/output
equipment / USE: data processing,
input/output equipment / - / 13
Jonker Business Machines, Inc. --
see I2
LFE Electronics, Systems Division, A
Division of Laboratory For Electron-
is, Inc. -- see I2
Litton Systems, Inc., Guidance and
Control Systems Div. -- see A4
Mace Corporation
Midwestern Instruments, Inc., 41st and
Sheridan Rd., P. O. Box 7509,
Tulsa 18, Okla. / input/output
equipment / DESCR: digital tape
systems, facsimile systems, analog
recorders, oscillograph recorders / USE:
computer systems, off-line
processing, information storage and
retrieval, data transmission, graph-
ic plotting / $1500 to $17000 / 13
Minneapolis-Honeywell Regulator Co.,
Aeronautical Div., Florida Facility
The National Cash Register Co.
National Data Processing Co., dept.
of UNIVAC Div. of Sperry Rand Corp.
Omnitronics, Inc., Subsidiary of Borg-
Warner Corp., 511 N. Broad St.,
Philadelphia 23, Pa. / electrostati-
tic tape recorder / DESCR: high
speed recording of coded and alpha-
numeric data on paper tape through
use of electrically driven
electrostatic process. Speed range
to 600 char. / sec. / USE: output from
digital computer, communications / $7000 to
$90000 / 13
Omnitronics, Inc., Subsidiary of Borg-
Warner Corp. -- see R7
Products and Services
Radiation Incorporated
Raytheon Co., Communications and Data
Processing Operation, 1415 Boston-
Providence Turpik., Norwood, Mass. /
multiplexer, ultra-high speed / DESCR:
ultra-high speed commutator-
multiplexer with switching speeds
up to one million per second. 24
channels per unit, attachable up to
24 units / USE: to sequentially
route analog signals to A/D convert-
ers / $5000 to $9000 / 13
Remington Rand Univ. -- see C24
Science Research Associates, Inc.
Data Services Div. -- see C28
Scientific Data Systems, Inc. -- see
C12, C54
Societe D'Electronique Et D'Automatie
Soroban Engineering, Inc.
Strand Engineering Co. -- see V1
Systematics, a Div. of General Instru-
ment Corp. -- see C9
The Teleregister Corp.
Underwood Corp.
Victor Business Machines Division,
Victor Comptometer Corp.
Wang Laboratories Inc.
Westinghouse Electric Corp., Air Arm
Div.

14. INTEGRATORS
Dresser Electronics, SIE Div., a divi-
sion of Dresser Industries, Inc.

15. INTEGRATORS, ELECTRIC
Andersen Laboratories Inc.

16. INTEGRATORS, MECHANICAL
Mace Corp. -- see A4
Reeves Instrument Corp.

L1. LIGHTS, INDICATOR
Alden Products Co.

M1. MAGNETS
The Arnold Engineering Co., Railroad
Ave. & West St., Marengo, Ill. / magnetic
materials / DESCR: permanent
magnets -- alnico, ceramic, cores -- silicotron transformer, high
permeability tape wound deltamax,
permalloy, supermalloy, supermendur,
obbin, molybdenum permalloy, carbonyl
iron; barium titanate transducers;
special magnetic materials / M1
The Bendix Corp., Division of Labo-
ratory For Electronics, Inc.
Eaton Products Co., Subsidiary of The
Singer Mfg. Co. -- see C24A
LFE Electronics, Systems Division, A
Division of Laboratory For Electron-
is, Inc. -- see I2
Midwest Research Institute -- see O2
National Cybernetic Corp.

National Data Processing Co., dept.
of UNIVAC Div. of Sperry Rand Corp.
The Service Bureau Corp., a subsidiary
of IBM, 425 Park Ave., New York 22,
N.Y. / inventory systems / DESCR:
contractual data processing for bus-
iness, science, and industry / - / 17
Statistical Tabulating Corp. -- see C30
Telecomputing Services, Inc. -- see C27

I0. INVESTMENT ASSISTANCE
LFE Electronics, Systems Division, A
Division of Laboratory For Electron-
is, Inc. -- see I2
Statistical Tabulating Corp. -- see C30

J1. JACKS
Aerovox Corp.
Alden Products Co.
Superex Electronics Corp.

K1. KEYBOARDS
Barroughs Corp.
Information Products Corp. -- see I3
LFE Electronics, Systems Division, A
Division of Laboratory For Electron-
is, Inc. -- see I2
Soroban Engineering, Inc.
Products and Services
processing and computer controls, etc. varies, depends upon material, quantity, and shape / M1

M2. MEMORY SYSTEMS
Autometics Industrial Products, 3400 E. 70th St., Long Beach, Calif. / Recomp Digital Magnetic Tape Memory System / DESCR: expands Recomp Computer from 4096 words to over 1,000,000 words. Features variable length blocks, bi-directional stop start, and erasure control. Built-in parity checks. / $20,000 selling price / $525 per month lease price


BRYANT COMPUTER PRODUCTS, DIV. OF EX-CELL-O CORP., 850 Ladd Rd., Walled Lake, Mich. / MEMORY SYSTEMS / DESCR: modular mechanical and electronic components for wide range of systems. Standard frequencies of DC to 500 kc; higher as required. Designed for complete magnetic drum or disc file systems, including read, write, selection, and interface circuitry. USE: commercial, industrial, military drum and disc file systems / M2

Cognitronics Corp. -- see D12
Computer Control Co., Inc.
Consolidated Controls Corp., 16 Durant Ave., Betholn, Conn. / memory drum / DESCR: low speed, moved by stepping motor or geared to process. Responds to polarity. No brushes or contacts. USE: variable delay memory, such as on sorting conveyors, recording automatic test equipment results, machine tool control / $1000 to $5000 / M2

Cybertronics, Inc. -- see T11.1
Delco Radio Div., General Motors Corp.
DI/AN Controls Corp., 944 Dorchester Ave., Boston 15, Mass. / buffers / DESCR: tape to printer, processor to printer. DI/AN's RBP Series Buffer & Control Units, flexible, compact, solid-state, magnetic-storge, circuitry with proven reliability / M2

Digital Development Corp.
N. V. Electrologica
Fabri-Tek Inc., Amery, Wis. / magnetic core memory systems and memory planes / DESCR: complete design and manufacture of either memory planes or memory systems using ferrite cores. Memory stacks from 100 cores to millions of cores; systems from 5000 to 200,000 bits / USE: central storage for digital computers, buffer storage for other applications / M2

Ferranti Electric, Inc.
Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept. -- see D12

General Dynamics/Astronautics, a Div. of General Dynamics Corp.
General Electric Co., Specialty Devices Operation

The DIALCO DATA MATRIX® Ready to Install in a compact “package”--

The DIALCO DATA MATRIX® Manufacturing Service aids you 3 ways:
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54 STEWART AVE., BROOKLYN 37, N.Y. • Area Code 212, HYacinth 7-7600

HRB-Singer, Inc., a subsidiary of The Singer Mfg. Co. -- see C24, C24A

Indiana General Corp., Electronics Div. LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / memory systems / DESCR: amplifiers, logic and selection circuitry, read/write/erase heads, magnetic discs and drums, registers -- complete system capability / USE: computers and data systems, digital and analog / M2

Edwin A. Lipps Engineering

Minneapolis-Honeywell Regulator Co., Aeronautical Div., Florida Facility
Radio Corp. of America, Semiconductor and Materials Div.

Rose Engineering, Inc., A & Courtland Sts., Philadelphia 20, Pa. / magnetic core memory systems / DESCR: magnetic core memories and buffers, speeds to 3.5 μ sec cycle time. Have military and commercial systems, including "Ministore II", now low cost random access memory system / M2

Servomechanisms, Inc. -- see T11.2

Sperry Gyroscope Co., Div. of Sperry Rand Corp.

Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc.

Techintrl, Inc.

Texas Instruments Inc. -- see C26

Univac Military Operations of Sperry Rand Corp.

M2A. MOTORS

Clifton Precision Products Co., Inc.


GAP Instrument Corp.
The A. W. Hayward Co.

INC Magnetics Corp., Western Div. -- see C24

Inm Industries

Redmond-Fairchild Inc. -- see D12

Sangamo Electric Co., 1301 North 11th St., Springfield, Ill. / induction and hysteresis motors / DESCR: complete line of miniature precision servo motors designed to operate from an alternating source. Power outputs to 1/100 horsepower. Frame sizes from 5 to 25 / USE: servo systems / $35 to $70 / M2

Servomechanisms, Inc.

M3. MULTIPLIERS

Daystrom, Inc., Weston Instruments Div.

GPS Instrument Co., Inc.

Morin Instrument Corp.

M4. MULTIPLIERS, DIODE

Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / diode multiplier / DESCR: product formed by quarter-square principle with diode-shaping cards and high-precision
**M4. MULTIPLIERS, ELECTRONIC**

Reeves Instrument Corp.

**M5. MULTIPLIERS, FREQUENCY**

Texas Instruments Inc., Apparatus Div., P. O. Box 6015, Dallas, Tex. / multipliers / DESCRL varactor diode solid-state frequency multipliers of proven design capable of furnishing outputs through K band / / - / M4

**M6. MULTIPLIERS, SERVO**

Dian Laboratories, Inc. *a* / servo multiplier / DESCRL product of any variable with any of four others obtained on each servo. 0.05% 10 turn potentiometers. Readout dial indicates polarity and voltage to .02 volts / USE: all inputs and outputs available on patchbay / on request / M7

Feedback Controls, Inc. / Reeves Instrument Corp.

**O1. OFFICE MACHINES**

Automation Engineers, 344 W. State St., Trenton 8, N.J. / Automatic intercoupler / DESCRL intercoupling device to program and transmit direct data between different types of office machines; for example, a multiplying typewriter and an accounting machine / USE: direct cable connection between machines for simultaneous operation / $5000 to $4000 / O1

Burroughs Corp. / Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / office equipment / DESCRL complete line of adding, calculating, data processing machines and related equipment / USE: high speed computing and analytical services in: linear programming; mathematical modeling, computer applications studies for industry and government related to intelligence systems, command control systems, data acquisition and reduction / - / - / O2

Midwest Research Institute, 425 Volker Blvd., Kansas City 10, Mo. / operations research / DESCRL re- search in inventory and production control, forecasting, and control systems / - / O2

National Cybernetic Corp. / see C30

**P5. PATCH CORDS**

Alden Products Co. / AMP, Inc.

**P6. PLOTTERS**

Automations Industrial Products -- see C42

Benson-Lehner Corp. / Electro Instruments, Inc. -- see A3

Hathaway Instruments, Inc. / Electro Instruments, Inc. -- see A3

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. / plotters / DESCRL contract data processing. Dataplotter available on an hourly basis / / - / P6

Westgate Laboratory, Inc. -- see B1

**P6A. PLUGBOARDS**

Cybernetics, Inc. -- see T11.1

**P7. POTENTIOMETERS (COMPUTER TYPES)**

Analogue Controls, Inc., 200 Frank Rd., Hicksville, L.I., N.Y. / precision potentiometers / DESCRL: precision potentiometers to .005% linearity, linear and functional; single & multiple turn; single & multi-gang; 3/8" diam. to 15" diam. / USE: aircraft, missiles, space vehicles, computers, control systems / $20 to $2000 / P7

Beckman Instruments, Inc.

Bourns, Inc., Trimpot Division, 1200 Columbia Ave., Riverside, Calif. / Trimpot potentiometers and relays / DESCRL: adjustment potentiometers, rectangular and square wirewound types; rotary potentiometers; precision potentiometers; subminiature relays / USE: to match, balance, and adjust circuitry in computer systems / $1.50 to $25 / P7

CENTRALAB (The Electronics Div. of Globe-Union Inc.), 900 E. Keefe Ave., Milwaukee 1, Wis. / electronic components / DESCRL: potentiometers / USE: as basic components to circuits / varies / P7
The M3000 digital tape transport features a unique positive pressure tape drive principle that provides high performance start-stop characteristics with the ultimate in gentle tape handling. A constant flow of low pressure air through uniformly porous drive capstan surfaces forms an air bearing that completely isolates the tape surface from mechanical contact with the capstans. Driving force to accelerate the tape is provided by high pressure air directed against the tape in opposition to capstan air bearing. The opposing air pressures generate viscous coupling between the tape and drive capstan and cause rapid and uniform tape acceleration virtually free from dynamic oscillation, tape distortion, mechanical skew, and velocity overshoot. Both drive and braking pressures are switched by high speed, transistor driven, digital pneumatic valves designed for reliable operation in excess of 100 million cycles under conditions of extreme vibration and shock loading.

inquiries invited for full specifications
lations which require high capability and print speed / - / P10

A Nelex Corp., *a / Series 4-6624 and 6672 High Speed Printers / DESCR: 24 and 72 column printers with 66 character choice operating at a print rate of 600 lines per minute alpha-numeric or 1200 numeric. Designed for small computers or lister type operations / USE: banking, communications, checkout and missile and space programs / - / P10

A Nelex Corp., *a / Series IV Print Static Print / DESCR: complete high speed printing system for off-line operation from large scale computers prepared high or low density magnetic tapes / USE: EDP applications at industrial, scientific, or military installations where volume document production is required / - / P10

A Nelex Corp., *a / Model 300 Complete High Speed Printer System / DESCR: new complete low cost 120 column 300 lpm printer system containing all of the power electronics, buffered logic / USE: banking, scientific and commercial installations / - / P10

Beckmann Instruments, Inc. Clary Corp. -- see P9 N. V. Electrologica

The English Electric Co., Ltd., English Electric House -- see DL

General Dynamics/Electronics, P. O. Box 2449, San Diego 12, Calif. / S-C 3070 Message Printer / DESCR: high speed message printer used in edp, and digital communication systems. A synchronously prints a character at a time upon receipt of signals from digital computer / USE: on-line, off-line with digital computer systems is compatible with most available data transmission terminals / $15,000 to $16,000 for basic unit / P10

Omicronics, Inc., Subsidiary of Borg-Warner Corp. -- see DL

Philip Corp., a subsidiary of Ford

Motor Co., Computer Div.

Pitkin Instrument Co., Inc.

Radiation Incorporated -- see P9

Radio Corp. of America, Electronic Data Processing

Rank Precision Industries Ltd., Electronics Dept., Sulgrave Rd., Hammersmith, London W. 6, England / Xeronic High Speed Computer Printer / DESCR: selects and prints from computer signals 2800 lines per minute of variable data and also basic forms. CRTs and xerography / USE: on or off line / $200,000 to $300,000 / P10

Remington Rand Univac -- see DL

Societe D'Electronique Et D'Automatisme

Univac Military Operations of Sperry Rand Corp.

PI1. PRINTERS, KEYBOARD

Clary Corp., 408 Junipero St., San Gabriel, Calif. / Clary Input Keyboard / DESCR: a data input unit, fits any system. Ten-key keyboard with up to 30 control keys and

Products and Services

indicator lights. Can be rack or console mounted / USE: for direct entry of data / $175 to $199.50 / P11

Invac Corp. -- see DL

P12. PRINTERS, LINE-A-TIME

A Nelex Corp. -- see P10

Clary Corp. -- see P9

Electro Instruments, Inc. -- see A3

The English Electric Co. Ltd., English Electric House -- see DL

Friden, Inc. 2550 Washington Ave., San Leandro, Calif. / Friden PRC Printer / DESCR: electro-mechanical digital printing device. Solenoid keyboard accepts 1200 digits per minute. Negative values print in red / USE: digital printing / - / P12

P12A. PROGRAMMING SERVICES (see also "Survey of Consulting Services")

Amber & Amber -- see C30

American Data Services, Inc.

Applied Data Research, Inc.

Aries Corporation -- see C30

Associated Sales Analysts, Inc. -- see C27

Auerbach Corporation -- see C30

Autonetics Industrial Products -- see C39

Baner & Moore Associates, Inc., 6910 Fannin St., Houston 25, Tex. / programming services / DESCR: consulting in programming analysis and development; several proprietary packages in mathemathical programming and data reduction / - / P12A

C-E-I-R, Inc.

Compumatix, Inc.

Computer Associates, Inc.

Computer Concepts, Inc.

Computer Operations, Inc.

Computer Services, Inc.

Computer Systems Consultants -- see DL

Computer Usage Company, Inc. -- see C28

Control Data Corporation

Control Technology, Inc.

Data Sciences, Inc.

Data-Service, Inc.

Datatrol Corp.

The Diebold Group, Inc.

Electric Boat Div., General Dynamics -- see C27

Electronic Processing Center Inc. -- see C27


Executive Computer Utilization -- see C27

E-Z Sort Systems, Ltd.

General Kinetics Inc., 2611 Shirlington Rd., Arlington 6, Va. / programming services / DESCR: programming; recommendation, design, and construction of automatic programming systems; mathematical studies; numerical analysis; compiler development / - / hourly and contract rates / P12A

Gulton Industries, Inc.

Informatics, P. O. Box 5569, Sherman Oaks, Calif. / systems and programming in information processing / DESCR: consulting, programming, systems design, and systems implementation in information processing / - / P12A

The ITT Data Processing Center -- see C27

LFE Electronics, A Division of Laboratory For Electronics, Inc., Monterey Laboratory, 35 G Webster St., Monterey, Calif. / Services -- computer programming; operations research; systems analysis / DESCR: programming services and operations research; systems and scientific programming; mathematical studies; operations research and systems analysis studies / - / P12A

McDonnell Automation Center, Div. of McDonnell Aircraft Corp., Box 516, St. Louis 66, Mo. / programming services / DESCR: provide package applications or develop programs for specific industries or applications / - / P12A

Mesa Scientific Corp., 12839 Weber Way, Hawthorne, Calif. / programming services / DESCR: develop programming systems; problem oriented compilers and programming languages. Program digital differential analyzers, real-time computers for navigation and control, automatic checkout and instrumentation systems / - / P12A

Mountain Associates

Mountain Data Systems, Inc. -- see C27

National Computer Analysts, Inc.

National Computer Analysts of New York, Inc.

National Cybernetic Corp. -- see C30

Pacific Tabulating & Statistical Ltd. -- see C27

THE SERVICE BUREAU CORP., A SUBSIDIARY OF IBM, 425 Park Ave., New York 22, N.Y. / PROGRAMMING SERVICES / DESCR: programming, systems analysis, data processing, and machine services using IBM 650, 701, 709, 7090, 1620, datalplotting, MIG SIS, and DART, and unit record equipment. Fields of extensive programming experience include: chemical engineering; civil engineering and management; insurance, banking and brokerage; public utilities; etc. Preplanned programs include: PERT (Program Evaluation and Review Technique); piping flexibility analysis; survey data processing; automated inventory for dealerships; etc. / USE: for business and scientific problems / services on a contractual basis; equipment on an hourly basis / P12A

Statistical Tabulating Corp. -- see C30

Sylvania Electronic Systems Systems Research Group, Inc.

Telecomputing Services, Inc. -- see C27

Univac Military Operations of Sperry Rand Corp.

U. S. Naval Weapons Laboratory, Computation and Analysis Labs., and Wolf Research & Development Corp.
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Milwaukee • Arthur Engineering Sales Co., 11216 West Mallory Avenue, Hales Corners, Wisconsin
New York • Brogan Associates, 220 Jericho Turnpike, Mineola, New York
Philadelphia • Brogan Associates, P.O. Box 781, Levittown, New Jersey
San Francisco • Calma Company, 5545 Amby Drive, San Jose, California
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Washington, D.C. • Gregory M. Bell, Jr., 927 15th Street, N.W.
Paris • Comptoirs Internationaux, 39, Rue Francois Arago, Montreuil
Tokyo • Muzing International, Inc., 20, 1-Chome, Yotsuya, Shinjuku-ku

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CalComp Computer Products, Inc.
8714 Cleta Street • Downey, California

Computers and Automation for June, 1962
Philco 2000 systems feature balanced four-way processing for maximum speed and optimum hardware utilization. The Philco 2000 has always been characterized by its unique controlling of magnetic tape by way of unrestricted four-way multiplexing. The ability to read or write concurrently on any four of its tape units is a time-proven feature of the Philco 2000 Electronic Data Processing System. The four-way processing capabilities of the 2000 were increased with the introduction of Philco's one- and two-microsecond memories which are partitioned into four independently functioning banks and thus allow overlapping of four read or write memory cycles.

The Model 212 Computer is the first of the Philco 2000 series main frames to incorporate four-way processing. The computer is functionally partitioned into four logically independent units to allow overlapped processing of up to seven instructions. This new logical design contributes significantly to the high speed of the new computer.

The availability of the Model 212 Computer with 240 KC tapes and 960 KC disc files completes a balanced system utilizing four-way processing.
NEW CENTRAL PROCESSOR

MODEL 212. The new Philco 212 Central Processor affords up to 18-to-1 speed-up over previous models while maintaining software and hardware compatibility. • Asynchronous design • Full software and hardware compatibility • Four-way processing • 248 instructions • Four modes of automatic index register modification • Expanded repeat functions for automatic looping of up to four instructions.

NEW PERIPHERAL EQUIPMENTS

ADVANCED SATELLITE COMPUTER—COMPLETES THE BALANCED SYSTEM
Philco's newly designed Satellite Computer is a stored-program machine which relieves the Philco 2000 of input formatting and verification; conversion; file searching; and output editing. In on-line operation, it communicates directly with other Philco 2000 components; runs more than one program concurrently; and provides a wide variety of high speed input-output devices.

960 KC FILE with 40-million character disc file
Philco Disc File System provides 960 KC rapid-access storage. Data flows directly between the discs and memory without interfering with other input-output operations. An order for data from the disc is transmitted and stored in the Disc File System, allowing the Central Processor to proceed immediately with previously read-in data while concurrently processing the disc order. The input or output of the disc is multiplexed with all other accesses to memory. Each Single File unit stores 41,991,040 alphanumeric characters. Minimum access entails no latency; maximum access requires 170 milliseconds positioning time.

1.0 µs MAGNETIC CORE STORAGE with 0.5 µs read access
Philco's One-Microsecond Magnetic Core Storage System provides high-speed storage for the Philco 212 Central Processor. The memory is partitioned to permit up to four concurrent accesses. Four words can be read from or written into memory in one microsecond. Only one-half microsecond read access time is required for a full word.

240 KC MAGNETIC TAPE SYSTEM with unrestricted 4-way read-write multiplexing
Philco High-Performance Magnetic Tape System has an instantaneous transfer rate of 240,000 alphanumeric characters per second per tape unit, and storage capacity of up to 66.4 million alphanumeric characters per reel. Any tape may be written forward, read forward and reverse, and searched for file marks forward and reverse. Any four magnetic tape units on an Input-Output Processor may be concurrently transmitting data. Units are connected to the memory of the Central Processor through Magnetic Tape Input-Output Processors. Input-Output orders for other Philco Tape Systems are compatible with this system.

NEW PHILCO 2000 SOFTWARE

PERT—A complete PERT system handling up to 7000 activities internally. Compatible with Air Force standards.

STATISTICAL SYSTEM—A complete system for generating edited statistical reports.

LINEAR PROGRAMMING—An improved version of LP-2000; input is compatible with SHARE format.

ALTAC III—An improved version of Philco's Algebraic Translator—ALTAC.

ALTAC IV—Compatible with the latest changes in the most common formula translator system. Designed especially for Philco 2000 systems with a 32K memory.

COBOL—Meets all U.S. Government standards.

TOPS II—An improved version of TOPS, Philco's own Business Oriented Language.

REPORT GENERATOR—Selects pertinent records from designated input files to produce edited reports.

PHILCO OPERATING SYSTEM SYS, Version D — A complete operating and service routine system, including program segmentation. Permits user to add specialized functions.

For detailed information about these and other Philco EDP equipments, wire, write or phone (215-0L 9-7700)

COMPUTER DIVISION, WILLOW GROVE, PA.

PHILCO A SUBSIDIARY OF Ford Motor Company
Chancery House, Chancery Lane, London, W.C.2, England / publication (monthly) "Computer Abstracts" and "Computer News" / DESCRIPT: international coverage of technical literature, patents, commercial news, etc. / USE: supplied to computer manufacturers and users, libraries, documentation centers, etc. / 95¢ per annum / P15

P16. PUNCH CARD MACHINES

American Data Machines, Inc., 7 Commercial St., Hicksville, N.Y. / Mek-a-Punch / DESCRIPT: portable, about 30 lbs. 80-column IBM type tab card. 12 or 10 manually positioned lever keyboard / USE: requiring no electricity, Mek-a-Punch can be used anywhere / $395.50 to $465.50 / P16

Automated Accounting Center of Connecticut

Electronics Industrial Products, 2400 E. 70th St., Long Branch, Calif. / Reader-Inscriber / DESCRIPT: equipment allows computers to perform machine accounting functions by converting computer output signals to form acceptable to IBM 204 or 205 printing card punch equipment / USE: computer control / $4250 selling price / $150 per month lease price / P16

Burroughs Corp.

Data Computing Corp. -- see C27

Dennison Mfg. Co., Machines Systems Div., 300 Howard St., Framingham, Mass. / Dennison Print-Punch Marking Machine / DESCRIPT: machine prints and code-punches tags and tickets in a single operation and at a speed of 200 stabs per minute. Expands the principle of automatic data processing to include forms used for inventory control, production control, payroll, and other industrial operations. Print-Punch tickets may be converted into IBM cards for use in tabulating equipment / USE: to provide single or multiple stub-coded basic input media / machine is not sold / P16

Gordon Electronics

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N. Y. / IBM 1401 Optical Character Reader / DESCRIPT: solid-state 1410 reads typed, printed or imprinted information from paper or card documents for direct input to an IBM 1401 / USE: for conversion of numerical data into machine language, which it feeds to IBM 1401 for processing / Monthly rental $2600 to $2900; selling price $120,300 to $133,800. All prices exclusive of tax / P2

Link Division, General Precision, Inc. -- see C22A

R2.5 READERS, FILM

Benson-Lehner Corp.

Link Div., General Precision, Inc.

R3. READERS, MAGNETIC CARD

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N. Y. / IBM Magnetic Character Sensing Equipment / DESCRIPT: utility, proof and unit inscriber, magnetic character readers, reader sorters. Readers can be used with IBM 1401 and 1410 data processing systems and as independent units / USE: automatically deposit accounting and other banking operations / Prices: 1201 proof inscriber: monthly rental $252, selling price $13,950. 1202 utility inscriber: monthly rental $75, selling price $1050, 1203 unit inscriber: monthly rental $145, selling price $5900. 1210 reader sorter: monthly rental $1750, selling price $71,800. 1219 reader sorter: monthly rental $2025, selling price $102,100. 1412 magnetic character reader: monthly rental $2000, selling price $91,400. 1419 magnetic character reader: monthly rental $2275, selling price $110,500. All prices exclusive of tax / P3

R4. READERS, MAGNETIC TAPE

N. V. Electrologica

The English Electric Co., Ltd., English Electric House -- see D1

Edwin A. Lips Engineering

Midwestern Instruments, Inc. -- see T2

Packard Bell Computer Corp.

Sangamo Electric Co., 1301 North 11th St., Springfield, Ill. / magnetic tape recorder/reproducer / DESCRIPT: analog type instrumentation magnetic tape recorder/reproducer. A single unit is capable of both FM and direct record/reproduce operations / USE: widely used in the instrumentation field / $18,000 to $35,000 / P4

R5. READERS, MECHANICAL

Packard Bell Computer Corp.

R6. READERS, PAPER TAPE

Addo-x, Inc. -- see T8

Automatics Industrial Products, 3400 E. 70th St., Long Beach, Calif. / Facitape AETR-510 High-Speed Tape Reader / DESCRIPT: high speed paper reader for computer input, reads 300 ch/sec, stops on a character; capacitance type reader / USE: high speed paper tape input to computer / $4750 selling price / $125 per month lease price / P6

Automatics Industrial Products -- see T9

Barroughs Corp.

Digitronics Corp., 1 Albertson Ave., Albertson, L.I., N.Y. / tape readers and handlers / DESCRIPT: high-speed, photoelectric, solid state perforated tape readers and handlers, speeds, 100 to 2000 CPS / USE: with digital computers, machine tool controls, ground support equipment, instrumentation / $745 to $5250 / R6

The English Electric Co., Ltd., English Electric House -- see D1

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ontario, Can. / tape reader, Type 1968 / DESCRIPT: 1000 ft. tape, which synchronizes start-stop speed to 200 char/sec.; free run speed, 300 char/sec.; speeds to 400 ch/sec. available; bi-directional built-in test facility solid-state electronics throughout / USE: computer input, check-out and control systems / - / R6

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., a

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/ paper tape reader Type 260 /
DESCR: designed and constructed to MIL-E-16400. Cassette storage of 50 feet endless loops of paper tape; cassettes readily removable to allow interchange of pre-programmed tapes / USE: data processing, check-out or control requiring repetitive input / - / R6

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a / paper tape reader, Type 271 / DESCR: designed and constructed to MIL-E-4970. Free run speed 300 char/sec; fast 1000 char/sec advance or rewind; card file mounting of logic circuitry; transistorized / USE: high-speed data processing; programming and control / - / R6

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., *a / paper tape block reader, Type 290 / DESCR: capable of reading to twelve characters simultaneously; free run speed 260 char/sec; synchronized start-stop speed up to 180 char/sec; transistorized module construction / USE: input, check-out and control systems / - / R6

Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / paper tape reader / DESCR: operate in conjunction with Friden Flexowriters, Computypers, or other tape-controlled machines (such as numerical control devices), Electro-mechanical / USE: general data processing, numerical control / - / R6

Friden, Inc., *a / edge-punched card readers / DESCR: similar to tape readers except that they are able to handle edge-punched cards (paper tape coding punched on cards) / USE: general data processing / - / R6


Invac Corp. -- see I3

Omnitronics, Inc., Subsidiary of Borg-Warner Corp. -- see R7

Packard Bell Computer Corp., Radio Corp. of America, Electronic Data Processing

Remington Rand Univac -- see C24

Soroban Engineering, Inc.

Tally Register Corp., 1510 Mercer St., Seattle 9, Wash. / paper tape reader / DESCR: asynchronous, bi-directional panel mounted reader. Tape handling facilities included. Contacts are full form C, precious metal. 0-60 char/sec (0-120 ips available) / USE: input to computers, tape processing systems, input to digital plotters, machine tool control. 

Wang Laboratories, Inc.

R7. REaders, PHOTOELECTRIC

American Bosch Arma Corp.

Digitionics Corp.

The Electro Nuclear Systems Corp.

Invac Corp. -- see I3


Packard Bell Computer Corp.

Science Research Associates, Inc., Data Services Div. -- see C28

R8. REaders, PUNCH CARD

The English Electric Co., Ltd., English Electric House -- see D1

Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / Friden tab card reader / DESCR: a second input source to Friden Flexowriters and Computypers; interprets data in 90-column tab cards which is then read out on master machine / USE: general data processing / - / R8

Gordon Enterprises

A. Kimball C. Packard Bell Computer Corp.

Radio Corp. of America, Electronic Data Processing

Remington Rand Univac -- see C24

Taurus Corp.

R9. RECORDING PAPERS

The Bristol Co.

Clarkson Press Inc., 189 Van Rensselaer St., Buffalo 10, N.Y. / GC Data Processing Forms / DESCR: continuous forms (single or multiple part) / USE: printing data on regular or high-speed printers / - / R9

Hathaway Instruments Inc.

Midwestern Instruments, Inc., 41st and Sheridan Rd., Box 7509, Tulsa 18, Okla. / recording papers / DESCR: photographic and direct recording papers, standard and super thin base, full selection of widths and roll lengths / USE: data recording in Midwestern Instruments oscillographs / $3 to $45 / R9

Westronics, Inc. -- see D2

R10. RECTIFIERS

Clevite Transistor


Hughes Semiconductor Division

International Rectifier Corp.

International Resistance Co.

Philco Corp. $575 to $650 / R6

Motorola Semiconductor Products Inc. -- see S2

Raytheon Co., Semiconductor Div.


MITRE is expanding its effort on the design and development of computer programs for critical experiments in the area of large-scale computer-based command and control systems. Test facilities are now equipped with 7090, 1401, and AN/FPSQ-7 (SAGE) computers. These facilities will soon be expanded to include a 7030 STRETCH computer.

MITRE is an independent nonprofit corporation working with — not in competition with — industry. Formed under the sponsorship of the Massachusetts Institute of Technology, MITRE is Technical Advisor to the Air Force Electronic Systems Division, and charter to work for such other Government agencies as FAA.
Products and Services

R12A. RESEARCH

Battelle Memorial Institute, 505 King Ave., Columbus 1, O. / research / DESCR: Systems engineering, operations research, information engineering, economic research. Also mathematical modeling, computer design, numerical machine control, self-organizing networks, information theory. / R12A

Duke University, Computing Laboratory Rockf ord Research Institute Inc. Zator Co.

R13. RESISTORS

Aerovox Corp.

Arnhold Ceramics, Inc., 1 E. 57 St., New York 22, N. Y. / STENC 0 and RESISTAl ELECTRONIC COMPONENTS / DESCR: subminiature carbon potentiometers and trimmers, high quality carbon and metal film resistors / $5 to $5 / R13

Beckman Instruments, Inc., Berkeley Div.

CENTRALAB (The Electronics Div. of Globe-Union Inc.), 900 E. Kearf Ave., Milwaukee 1, Wis. / ELECTRONIC COMPONENTS / DESCR: resistors / USE: as basic components to circuits / varies / R13

Corning Electronic Divs., Corning Glass Works

Dale Electronics, Inc., F. O. Box 488, Columbus, Nebr. / resistors / DESCR: wire wound (precision and precision power), metal film, deposited carbon / USE: component in all types of circuits / prices on request / R13

Daystrom, Inc., Weston Instruments Div.

Electro-Mec Instrument Corp.

Ferrocube Corp. of America


Imm Industries


Nucleonic Products Co., Inc.

Resistance Products Co., 914 S. 13th St., Harrisburg, Pa. / electronic component precision resistors / DESCR: singular or complex resistor units of wire-wound coils, carbon films, metal films, or any combination thereof. Complex units: groups of singular resistors or singular envelope containing multiple resistor elements / USE: in electronic equipment requiring components of precise resistance or impedance / $1.35 to $450 / R13

Sage Electronics Corp., Box 3926, Rochester 10, N. Y. / precision power resistors / DESCR: miniature wire-wound power resistors 1/2 to 10 watts, silicon coated; metal sheathed chassis mount types, 10, 25, 50 watt rating; non-inductive windings for fast rise time circuitry / USE: DC or pulsed power loads / approximately 500 per box and up, depending on value, tolerance, quantity / R13


Sprague Electric Co.

Texas Instruments Inc., see C26

Texas Instruments Inc., Semiconductor Components Div. -- see C26

Transitron Electronic Sales Corp.

R11. REGISTERS, SHIFT

Delco Radio Div., General Motors Corp.

DI/AN Controls, Inc.

Epac, Inc.

General Electric Co., Specialty Devices Operation

Imm Industries

Scientific Data Systems, Inc. -- see C12

Servomechanisms/Inc. -- see T11.2

Sprague Electric Co.

R12. RELAYS (COMPUTER TYPES)

Allied Control Company, Inc.

Assembly Producers, Inc.

AUTOMATIC ELECTRIC SALES CORP., Northlake, Ill. / (1) SERIES V 51 MERCURY WETTED CONTACT RELAY; (2) CLASS W WIRE-SPRING RELAY / DESCR: (1) up to 100 operations/second for over billion operations with no contact bounce; contacts and armature assembly sealed in glass capsule with mercury pool; make-before-break contacts (Form D) switch 250 volt-ampere loads, max. 5 amps., 500 volts; high power or low level operations. (2) provides up to 51 Form C (break-make) contacts: wire wrap (solderless) terminals / USE: (1) for high-speed circuit switching in computers. (2) for transferring up to 51 circuits / $20 to $55 / R12

Bowins, Inc., Trimplot Division

The Bristol Co.

C. P. Clare & Co.

Cornell-Dubilier Electronics, div. of Federal Pacific Electric Co.

Daystrom, Inc., Weston Instruments Div.


Hathaway Instruments Inc.

The A. W. Hayden Co.

Walter Kidde & Co., Inc., Kidde Electronics Laboratories

Mace Corp. -- see A4

Phillips Control Co., 59 W. Washington St., Joliet 1, Ill. / micro-miniature, power, and telephone relays / DESCR: compact, hermetically sealed micro-miniature relays, power relays, and telephone relays / USE: for all types of commercial, industrial, and military applications in computers, data processing, miniature circuits, switching / $0.50 to $20 / R12

Potter & Brumfield

Radiation Incorporated

Raytheon Co., Industrial Components Div.

Soroban Engineering, Inc.

Telex/Aemco, a Div. of Telex, Inc.

Union Switch & Signal Div. of Westinghouse Air Brake Co.

Ward Leonard Electric Co.

Battelle Memorial Institute, 505 King Ave., Columbus 1, O. / research / DESCR: Systems engineering, operations research, information engineering, economic research. Also mathematical modeling, computer design, numerical machine control, self-organizing networks, information theory. / R12A

Duke University, Computing Laboratory Rockf ord Research Institute Inc. Zator Co.

Aerovox Corp.

Arnhold Ceramics, Inc., 1 E. 57 St., New York 22, N. Y. / STENC 0 and RESISTAl ELECTRONIC COMPONENTS / DESCR: subminiature carbon potentiometers and trimmers, high quality carbon and metal film resistors / - / $5 to $5 / R13

Beckman Instruments, Inc., Berkeley Div.

CENTRALAB (The Electronics Div. of Globe-Union Inc.), 900 E. Kearf Ave., Milwaukee 1, Wis. / ELECTRONIC COMPONENTS / DESCR: resistors / USE: as basic components to circuits / varies / R13

Corning Electronic Divs., Corning Glass Works

Dale Electronics, Inc., F. O. Box 488, Columbus, Nebr. / resistors / DESCR: wire wound (precision and precision power), metal film, deposited carbon / USE: component in all types of circuits / prices on request / R13

Daystrom, Inc., Weston Instruments Div.

Electro-Mec Instrument Corp.

Ferrocube Corp. of America


Imm Industries


Nucleonic Products Co., Inc.

Resistance Products Co., 914 S. 13th St., Harrisburg, Pa. / electronic component precision resistors / DESCR: singular or complex resistor units of wire-wound coils, carbon films, metal films, or any combination thereof. Complex units: groups of singular resistors or singular envelope containing multiple resistor elements / USE: in electronic equipment requiring components of precise resistance or impedance / $1.35 to $450 / R13

Sage Electronics Corp., Box 3926, Rochester 10, N. Y. / precision power resistors / DESCR: miniature wire-wound power resistors 1/2 to 10 watts, silicon coated; metal sheathed chassis mount types, 10, 25, 50 watt rating; non-inductive windings for fast rise time circuitry / USE: DC or pulsed power loads / approximately 500 per box and up, depending on value, tolerance, quantity / R13


Sprague Electric Co.

Texas Instruments Inc., see C26

Texas Instruments Inc., Semiconductor Components Div. -- see C26


R14. RESOLVERS

Beckman Instruments, Inc., Berkeley Div.

The Bendix Corp., Eclipse-Pioneer Div

Clifton Precision Products Co., Inc.

Control Data Corporation

Giannini Controls Corp.

R15. RESISTORS, COORDINATE TRANSFORM

Reeves Instrument Corp.

R16. RESOLVERS, PRODUCT

Daystrom, Inc., Weston Instruments Div.

Reeves Instrument Corp.

R17. RESISTORS, SINE-COSINE

Clifton Precision Products Co., Inc.

Reeves Instrument Corp.

R18. ROBOTS

Consolidated Controls Corp., 16 Durant Ave., Bethel Conn. / robot / DESCR: Unimate, a teachable industrial robot, whose memory controls a powerful arm and hand. Can remember 200 sequential operations at a time, and learn new operations easily / USE: to replace an industrial worker on repetitive or hazardous jobs / $25,000 / R18

S1. SCANNERS

Datex Corp.

Electro Instruments, Inc. -- see A3

The Electric Nuclear Systems Corp.

Farrington Electronics Inc.

Gilmore Industries, Inc.
S2. SEMICONDUCTORS

Amperex Electronic Corp.
Calvert Electronics Inc.
Clevite Transistor
Cornell-Dubilier Electronics, div. of Federal Pacific Electric Co.
Delco Radio Div., General Motors Corp.
Fairchild A26
General Electric Co., Specialty Devices Operation
Imm Industries
Motorola Semiconductor Products Inc., 5005 East McDowell Rd., Phoenix 8, Ariz. / semiconductors / DESCR: silicon germanium alloy switching transistors; germanium and silicon epitaxial mesa transistors; silicon junction and bonded diodes; silicon 2, 3, and 4 junction multiple planar diodes / USE: high-speed switching, computer, and general use / S2
Raytheon Co., Semiconductor Div.
Sanders Associates, Inc.
Sparrow Semiconductor Div. of Sparry Rand Corp.
Sylvania Electric Products Inc., Semiconductor Div., 100 Sylvan Rd., Woburn, Mass. / semiconductors / DESCR: germanium alloy switching transistors; silicon and germanium epitaxial mesa transistors; silicon planar epitaxial transistors; silicon junction and bonded diodes; silicon 2, 3, and 4 junction multiple planar diodes / USE: high-speed switching, computer, and general use / S2
Texas Instruments Inc. -- see C26, T14, T15, T16
Texas Instruments Inc., Semiconductor Components Div. -- see C26

S2A. SERVOMECHANISMS

Andersen Laboratories Inc.
Astronautics Corp.
Atlas Precision Products Co., Div. of Prudential Industries, Inc.
Beckman Instruments, Inc.
The Bendix Corp., Eclipse-Pioneer Div., Clifton Precision Products Co., Inc.
GAP Instrument Corp.
Gianini Controls Corp.
Imm Industries
Librascope Div., General Precision, Inc., 800 Western Ave., Glendale 1, Calif. / servomotors / DESCR: line of servomotors for analog-and-digital data transmission, computation, conversion, and display. Exceeds military requirements / USE: fire-control, process-control, checkout and communications systems / - / S2A
Librascope Div., General Precision, Inc., "A" Model 100-2 servos / DESCR: miniature servo with 0 components. Weight, 12.5 oz. Length, 3'/2 in. / USE: fire-control, spacecraft-guidance, navigation systems / $1200 to $3000 / S2A
Mace Corp. -- see A4
Midwestern Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7509, Tulsa 18, Okla. / servo components / DESCR: high frequency proportional solenoids, "torque motor" rotary and linear actuators, hydraulic servo valves, digital pneumatic valves / USE: high performance electromechanical systems and peripheral equipment / $100 to $500 / S2A
Moog Servocontrols, Inc.
Moron Instrument Corp.
Nortronics, a div. of Northrop Corp.
Precision Products Dept.
Reeves Instrument Corp.
Westgate Laboratory, Inc. -- see B1

S3. SIMULATORS

ACF Electronics Div., ACT Industries Inc.
Aircraft Armaments, Inc., Industry Lane, Cockeysville, Md. / simulators / DESCR: air traffic control, missile training (REDSTONE, SERGEANT, ATLAS, POLARIS, NIXE), radar target, 3-axis flight / USE: training, test and evaluation of components and systems / custom / S3
Cybertronics, Inc. -- see T11.1
Datapulse Inc., 509 Hidny Ave., Ingwod, Calif. / Model 200 Data Generator / DESCR: generates programmed serial pulse data up to 100 bits in one channel or bits in 2 channels at clock rates to 2 mc. Plug-in output units available provide 12v into 50a variable linear rise time pulses, variable DC level output, pulse modulated sub-carrier output, or 5 nansec. rise times / USE: data simulation, simulation of data, development of logic circuits / $3600 to $4500 / S3
Datapulse Inc., "A" Model 202 Data Generator / DESCR: digital signal data in 2 channels with 16 bit cycle length at clock rates to 5 mc. Plug-in output amplifiers available provide 12v into 50a variable DC level output, pulse modulated sub-carrier, or 5 nanosec. rise time pulses / USE: data simulation, logical circuit design / $1700 to $2600 / S3
Dunn Laboratories, Inc., 611 Broadway, New York 12, N.Y. / reactor simulator / DESCR: simulator for the
study of reactor kinetic, control and start-up problems / USE: model of reactor is mechanized on computer for dynamic and accident studies / var/s S3

Elgenco, Inc.

General Dynamics/Astronautics a Div. of General Dynamics Corp.

Link Division, General Precision, Inc.

Reflectronics Electronics, Inc., a subsidiary of Universal Match Corp., W. Main St., Stamford, Conn. / training systems, special purpose computers, power supplies and control equipment / DESCR: design, produce large-scale, electronic training systems. Simulation of weapons and defense systems involving analog and digital techniques, data transmission and automatic programming / USE: military and industrial training / - / S3

Scientific Development Corp.


Sylvania Electronic Systems, a Div. of Sylvania Electric Products Inc. Westgate Laboratory, Inc. -- see Bi

S3A. SOCKETS

Cinch Manufacturing Corp.

Elco Corp. -- see C29

S4. STORAGE SYSTEMS

Benson-Lehner Corp.

Bryant Computer Products, Div. of Ex-Cell-O Corp., 850 Ladd Rd., Walled Lake, Mich. / storage systems / DESCR: modular mechanical and electronic components for wide range of systems. Standard frequencies of DC to 500 kc; higher as required. Designed for complete magnetic drum or disc file systems, including read, write, selection, and interface circuitry / USE: commercial, industrial, military drum and disc file systems / - / S4

Budd Electronics

Calvert Electronics Inc.

Cognitronics Corp. -- see D12

DI/AN Controls, Inc.

Eisco, Inc.

FMA, Inc. -- see D12

Image Instruments, Inc., 2300 Washington St., Newton Lower Falls 62, Mass. / recording storage tube systems / DESCR: single-gun, dual-gun, multi-tube systems for video data storage, scan conversion, analog data processing, computer data display storage / USE: slowed television signals, color to TV conversion, etc. / $14,000 to $27,500 / S4

LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / storage systems / DESCR: magnetic drum and disc systems, analog and digital. Complete memory/storage system capability / - / - / S4

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see D12

Radio Corp. of America, Electronic Data processing Societe D'Electronique Et D'Automatisation

Sorobah Engineering, Inc.

Univac Military Operations of Sperry Rand Corp.

S5. STORAGE SYSTEMS: MAGNETIC

Alden Products Co.

Bryant Computer Products, Div. of Ex-Cell-O Corp. -- see M2 and S4

Burroughs Corp.

Consolidated Controls Corp. -- see M2 Consolidated Electrodynamics Corp.

Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ontario, Can. / large memory systems / DESCR: drum memory system 8,500,752 bit storage, modular construction, built-in NCV test, power and control facilities MIL-E-41508. Drum modules complete with removable air bearing magnetic shell, read/write amplifiers, drum controls. 9ns access via 1.5 mcs transfer circuitry for remote (100 ft.) or direct coupling to GP solid state computer. Standard model 33 bits/word. Storage expandable to 16 megbit capacity / USE: with computing or data processing systems / $300,000 to $900,000 / S5

HRB-Singer, Inc., a subsidiary of The Singer Mfg. Co. -- see C24, C24A

LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. / magnetic storage systems / DESCR: complete memory/storage systems utilizing a rotating magnetic data storage device using the Bernoulli principle to stabilize the flexible recording medium -- with complete electronics / USE: computer or buffer memory; commercial or military application / - / S5

LFE Electronics, Computer Products Division, A Division of Laboratory For Electronics, Inc., -- see D11, D12 and S4

LFE Electronics, Systems Division, A Division of Laboratory For Electronics, Inc. -- see D12

Univac Military Operations of Sperry Rand Corp.

Wright Engineering Co., Inc.

S6. SWITCHES

Aerovox Corp.

Allied Control Company, Inc.

Astrometrics, Inc.

The Bristol Co.

CENTRALAB (The Electronics Div. of Globe-Union Inc.), 900 E. Keefe Ave., Milwaukee 1, Wis. / electronic components / DESCR: switches / USE: as basic components to circuits / varies / S6

Consolidated Controls Corp.

Control Switch Div., Controls of America

Dialcorp, Inc. -- see Li

Electro-Miniatures Corp.

Fairchild Controls Corp.

Hathaway Instruments Inc. Imm Industries

Markite Corp.

Micro Switch, a division of Minneapolis-Honeywell Regulator Co., 11 W. Spring St., Freeport, III. / precision switches / DESCR: complete line of precision snap-action and mercury switches, from modular lighted display and pushbutton devices to synchronized "one-shot" switch-circuit devices / USE: control, indication and minute operation / $3 to approx. $25 / S6

Minneapolis-Honeywell Regulator Co., Aeronautical Div., Florida Facility

Pondar, Inc.

Rotron Manufacturing Co., Inc. -- see FIA

Stellarmetrics

Sylvania Electronic Systems

Telex/Aemco, a Div. of Telex, Inc.

Transitron Electronic Sales Corp.

S7. SWITCHES, STEPPING

AUTOMATIC ELECTRIC SALES CORP., Northlake, Ill. / ROTARY STEPPING SWITCHES / DESCR: types 40, 44, 60 and 60-small; 10, 20, 30, 22 or 33 point selection -- up to 12 bank levels; type 45 -- two to twelve 25-point bank levels; capacities -- 25 points, 16 levels; 50 points, 8 levels. Also available with solderless terminals, hermetic sealing and other special features / USE: circuit scanning, etc. / $15 to $50 / S7

C. P. Clare & Co.

Hathaway Instruments Inc.

Hillburn Electronic Corp., 55 Greenpoint Ave., Brooklyn, N.Y. / high speed digital stepping switch / DESCR: high speed stepping switch with direct visual and printed circuit readout. Ten position switch with carry at "O" and auto homing to "O" / USE: digital clock, counter, programmer, signal initiation / $16 to $50 / S7

Imm Industries

S9. SYNCHROS


Control Data Corporation

Giannini Controls Corp.

IMC Magnetics Corp., Western Div., 6058 Walker Ave., Maywood, Calif. / synchros / DESCR: size 0 and size 11, 7° and 5° units covering com-
complete span of practical impedance levels. Available with transparent end caps for rear alignment of electrical zero. Stainless steel or aluminum housing / / - / / 58
Reeves Instrument Corp.

S9. SYSTEMS ENGINEERING

Aircraft Armaments, Inc. -- see C25, S3
American Data Services, Inc.
American Research and Manufacturing Corp.
Aries Corporation -- see C30
Arkay Engineering, Inc.
Auerbach Corporation -- see C30

AUTOMATIC ELECTRIC SALES CORP.,
Northlake, Ill. / SYSTEMS ENGINEERING / DESCR: consultants, designers and manufacturers of customized, automatic data handling systems. Business data instantly routed to any one or a number of destinations over diversified transmission paths. Other systems include systems for traffic control, oil and gas pipeline control systems, railroad dispatching, communications-network switching, municipal emergency services, etc. / / - / / 59

Battelle Memorial Institute -- see R12A
Beckman Instruments, Inc.

C-E-I-R, Inc.
Civil Engineering Systems Laboratory
Clifton Precision Products Co., Inc.
Cognitronics Corp.
Compumatix, Inc. -- see C30
Computer Logic Corp.
Computer Systems Consultants -- see C30
Computer Usage Company, Inc. -- see C20
Condenser Products Co.
Consolidated Systems Corp., 1500 So. Shamrock Ave., Monrovia, Calif. / engineering systems design / DESCR: electronic and electro-mechanical systems. Analog to digital conversion systems / USE: for analog and digital data handling, ground and space support, industrial control and electro-optical applications / - / - / 59

Control Data Corporation
Control Technology, Inc.
Daniel, Mann, Johnson & Mendenhall Data Sciences, Inc.
Denver Electronic Computing Service, Inc.
Designers for Industry, Inc.
Dynatech Corp.
Electro Instruments, Inc. -- see A3
Executive Computer Utilization -- see C27
Fair Instrument Corp.

Products and Services

General Kinetics Inc.
Giannini Controls Corp.
Gulton Industries, Inc.
Harman-Kardon Inc., Data Systems Division -- see C26
Hathaway Instruments Inc.
S. Himmelstein & Co.
Im Industries
Informatics, Inc. -- see P12A
International Business Machines Corp., Federal Systems Division
International Electric Corp., Route 17 and Garden State Parkway, Paramus, N.J. / electronic systems management / DESCR: over 1000 mathematicians, engineers, programmers, psychologists, administrators for designing, developing, manufacturing, installing, maintaining and operating data transmission, processing, automatic display, human factors engineering systems / USE: business, engineering, industry, science, government / / - / 59

The ITT Data Processing Center -- see C27
Laboratory for Electronics Inc., Monterey Laboratory
Management Assistance Inc. -- see C24A

MESA SCIENTIFIC CORP., 12360 Weber Way, Hawthorne, Calif. / SYSTEMS ENGINEERING / DESCR: consulting, systems analysis and synthesis, and logic design related to general-purpose computers, digital differential analyzers, guidance and control systems, automatic checkout and instrumentation systems / 59

Midwest Research Institute
Mitre Corp., P. O. Box 208, Bedford, Mass. / technical advice -- system engineering / DESCR: assists the Air Force Electronic Systems Div. in their systems management responsibility by systems planning and engineering / - / - / 59

National Computer Analysts, Inc.
National Cybernetic Corp., 111 Broadway, Room 51, New York, N.Y. / system engineering / DESCR: computer feasibility studies, system e-valuation, data processing, programming, data transmission systems, application research / USE: consulting service / - / 59

Nortronics, a div. of Northrop Corp., Systems Support Dept.
Pacific Tabulating & Statistical Ltd.
H. M. Senseny, Space Technology Laboratories, Inc. -- see C27

Sperry Rand Corp., Div. of Sperry Rand
Statistical Tabulating Corp. -- see C30

Stearlarmetrics
System Development Corp.
Tally Register Corp.
Tech Serv Inc.
Thompson Rano Wooldridge Inc., RW Div. Traid Corp.
U. S. Naval Weapons Laboratory, Computer and Analysis Lab.
Wisnuck Engineering Co., 255 No. Halstead Ave., Pasadena, Calif. / FM

The Federal Aviation Agency has selected MITRE to establish an experimental air traffic control "test bed." Operations, equipment, and computer program techniques will be designed, implemented, tested, and evaluated in the "system test bed" prior to incorporation in a new national air traffic control system.

Challenging assignments are now available for individuals with demonstrated ability in any of the following areas:

* Operations Research or Operations Analysis related to real time control systems
* Large-scale system design, test, or evaluation
* Computer program design for real time systems

Scientists and engineers are needed immediately for this important job and thereafter for MITRE's expanding role in the design and development of real time computer-based systems.

Recent college graduates with high scholastic achievements and an interest in these fields are also invited to apply. MITRE is located in pleasant suburban Boston.

Write in confidence to Vice President -- Technical Operations, The MITRE Corporation, P. O. Box 208, Dept. MFS, Bedford, Mass.

MITRE is an independent, nonprofit corporation working with not in competition with -- industry. Formed under the sponsorship of the Management Systems Laboratory, MITRE is Technical Advisor to the Air Force Electronic Systems Division, and chartered to work for such other Government agencies as FAA.

THE
MITRE
CORPORATION

An Equal Opportunity Employer
"building-block" systems / DESCR: compatible FM system components which can be assembled for numerous applications: e.g., direct read-out multiplication, summation and ratios of temperature, pressure, force, etc. / $1250 and up / $9 Woods, Gordon & Co.

T1. TACHOMETERS

Electro Products Laboratories, Inc. Giannini Controls Corp.
The A. W. Haydon Co.
Howlett-Packard Co.
Sangamo Electric Co., 1301 North 11th St., Springfield, ILL / tachometer generator / DESCR: miniature motor generator with drag cup rotor. With one phase excited generator produces output voltage proportional to speed of the shaft / USE: rate tachometer in velocity servo / $70 to $150 / T1

T2. TAPE HANDLERS

Amplifier Corp., of America, 398 Broadway, New York 13, N. Y. / TAPE HANDLERS / DESCR: special cartridges for protection, simplified handling and storage of endless-loop, punched-tape programs / T2

J. H. Bunnell & Co.
Burroughs Corp.
Consolidated Electrodynamics Corp. -- see T5

Dresser Products Inc., P. O. Box 2035, Providence 5, R. I. / punched tape handling equipment and filing supplies / DESCR: folders, winders, rewinder to facilitate tape handling. Envelopes and file folders standard and custom made for housing punched tapes / - / - / T2

General Kinetics Inc., 2611 Shirlington Rd., Arlington 6, Va. / TAPE HANDLERS, tape extractors, ultrasonic tape cleaners, KINESONIC tape cleaners / DESCR: special purpose and custom made transports with speeds up to 240 i.p.s. Special purpose tape recorders and tape testers / $2445 and $35,000 / T2

Invac Corp.
Midwest Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7509, Tulsa 10, Okla. / $3000 digital tape system / DESCR: high performance handlers; IBM compatible; special systems; solid state; pressure drive for utmost reliability / USE: computer systems; off-line processing; control systems / $9000 to $17,000 / T2

Midwest Instruments, Inc. -- see T3A

Monarch Metal Products, Inc. -- see T3A


Products and Services

Radio Corp., of America, Electronic Data Processing
Tally Register Corp., 1310 Mercer St., Seattle 9, Wash. / tape preparation and automatic typing system / DESCR: utilizes either IBM Selectric (155 words per minute) or IBM Model B (120 words per minute) full error correction and code search features available / USE: tape preparation, editing, hard copy print-out / $4200 to $5640 / T2

Wright Line, Div. of Barry Wright Corp.

T3. TAPE, MAGNETIC


Automated Accounting Center of Connecticut

Comptron Inc., 122 Calvary St., Waltham, Mass. / COMPUTE / DESCR: high quality, high density, heavy duty data processing and instrumentation tape. Offered at guaranteed certification of 556 bits and 900 bits (NRZ) / USE: magnetic tape transports. Input and output media / quoted upon request / T3

Control Data Corporation

Cybertronics, Inc., 132 Calvary St., Waltham 54, Mass. / magnetic tape cleaner / DESCR: lint, dirt, loose oxide and Mylar particles removed from both sides of magnetic tapes by harmless mechanical method. Minimizes dropouts; produces uniform output signal level / USE: cleans magnetic tapes on digital computer, instrumentation and telemetering applications / $900 to $1200 / T3

General Dynamics/Astronautics a Div. of General Dynamics Corp.

Monorox Corp., N. V. Electrologica

Potter Instrument Co., Inc.

Reeves Soundcraft Corp.

Remington Rand Univac -- see C24

T3A. TAPE, MAGNETIC, FILING SYSTEMS

Burroughs Corp.

Monarch Metal Products, Inc., MacArthur Ave., New Windsor (Newburgh), N. Y. / TAPE HANDLING, tape filing, storage and moving accessories / DESCR: different types of cabinets and racks; for filing or storage of magnetic tape reels; trucks for transporting reel containers / USE: filing, storing, moving magnetic tape reel containers / - / T3A

Wright Line, Div. of Barry Wright Corp.

T4. TAPE, MAGNETIC, READERS

The English Electric Co., Ltd., English Electric House -- see D1

Midwestern Instruments, Inc. -- see T2 N. V. Electrologica

Potter Instrument Co., Inc.

Tally Register Corp. -- see R6

T5. TAPE, MAGNETIC, RECORDERS

Amplifier Corp., of America, 398 Broadway, New York 13, N. Y. / TAPE RECORDERS / DESCR: transistorized magnetic tape recorders and tape decks; also continuous loop tape recorders and playback equipment / T5

Audio Instrument Co., Inc., 135 West 14 St., New York 11, N. Y. / TAPE TIME DELAY UNIT / DESCR: magnetic tape recorder-reproducer using a magnetic tape loop. Playback head position adjustable to change delay time / USE: element in simulation systems; provide delay in analog system / $1400 to $20,000 / T5

Burroughs Corp.

Consolidated Electrodynamics Corp., 360 Sierra Madre Villa, Pasadena, Calif. / DR-2700 / DESCR: magnetic tape transport for computer, industrial control, and laboratory applications; high performance, vacuum-buffered units with forward and reverse speeds of 150 and 75 ips / - / T5

Datamec Corp., 345 Middlefield Rd., Mountain View, Calif. / digital magnetic tape unit / DESCR: IBM compatible; 10" tape, 10" reels, 30 ips, vacuum column tape buffers, 5 millisecond bi-directional start/stop times. Reads/writes 200 bpi; 555 bpi magnetic tapes in IBM format / USE: as on line computer input/output; offline for card to tape and printers / $3000 to $9000 / T5

The English Electric Co., Ltd., English Electric House -- see D1

General Kinetics Inc. -- see T2

Hagan Chemicals & Controls Inc.

Midwest Instruments, Inc. -- see T2

Potter Instrument Co., Inc.

Sunborn Company, 175 Wyman St., Waltham 54, Mass. / 7-channel FM tape recorder, Model 2000 / DESCR: 7-channel, 4 speed FM or direct record/reproduction. Meets IBM type standards. All solid state electronics. Occupies 7" of panel space; uses standard 10" tape on 101£ reels / - / $6000 / T5

T5A. TAPE, MAGNETIC, REELS

Comptron Inc. -- see T3

General Kinetics Inc., 2611 Shirlington Rd., Arlington 6, Va. / TAPE REELS / DESCR: special tape reels and packaging designed for maximum protection of tapes during handling and long term storage; 50¢ to $50 / T5A

T6. TAPE, PAPER

Creed & Co., Ltd. (assoc. of ITT Corp.)

Friden, Inc. -- see P4

Invac Corp.

Mountain Data Systems, Inc. -- see C27

Tally Register Corp., 1310 Mercer St., Seattle 9, Wash. / TAPE PRODUCTION, duplication, and verification console / DESCR: to prepare tapes from a keyboard, to verify and duplicate copy tapes from a master tape. Speed is 60 characters per second / USE:
Products and Services

multiple tape copies for ground check-out equipment, machine tool control / $3965 to $4758 / T6
Telecomputing Services, Inc. — see D2A

T7. TAPE, PAPER, FILING SYSTEMS

Addo-x, Inc., 300 Park Ave., New York 22, N. Y. / tape punches and readers / DESCR: punch for mylar or paper tape; up to 60 characters per second; 5, 6, 7, or 8 hold code; non-synchronous operation / USE: as output device for computers or data processing equipment / $400 to $2000 / T8

Addo-x, Inc. — see T8

Automatic Industrial Products — see T9

N. V. Electrologica

Radio Corp. of America, Electronic Data Processing

Remington Rand Univac — see C24

Société D’Electronique Et D’Automatisation

Soroban Engineering, Inc.

Systematics, a Div. of General Instrument Corp. — see C42

Tally Register Corp., 1310 Mercer St., Seattle 9, Wash. / paper tape perforator / DESCR: asynchronous, 0-60 character/second, will perforate paper, aluminum foil or mylar tapes. Panel mounted, tape handling included. 5 through 8 levels can be perforated interchangeably / USE: computer output, data acquisition systems, tape preparation systems / $1000 to $3000 / T8

Teletype Corp.

T9. TAPE, PAPER, READERS

Addo-x, Inc. — see T8

Automatic Industrial Products, 3400 E. 70th St., Long Beach, Calif. / Facitape Console / DESCR: reliable high-speed tape handling console unit which incorporates 600 ch/sec reader and 150 ch/sec punch into a single semi-portable unit / USE: computer peripheral equipment / $16,950 selling price; $500 per month lease price / T9

The English Electric Company, Ltd., English Electric House — see D1

Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / tape readers / DESCR: used with Friden Flexowriters, Friden Computers, and allied equipment as second input source / USE: general data processing / - / T9

Invac Corp. — see T10

HRB-Singer, Inc., a subsidiary of the Singer Mfg. Co. — see R6

Omnitronics, Inc., Subsidiary of Borg-Warner Corp. — see R7

Potter Instrument Co., Inc.

Radio Corp. of America, Electronic Data Processing

Remington Rand Univac — see C24

Société D’Electronique Et D’Automatisme

Soroban Engineering, Inc.

Tally Register Corp. — see T6

Teletype Corp.

Wang Laboratories Inc.

T10. TELEMETRY SYSTEMS

Aircraft Armaments, Inc. — see C25

Airpax Electronics, Inc.

Astrometrics, Inc.

Beckman Instruments, Inc.

Dorrsett Electronics, Inc., 119 W. Boyd, Norman, Okla. / telemetry systems and components / DESCR: airborne and mobile telemetry systems designed to meet specific requirements of customers / USE: data transmission / various / T10

Dresser Electronics, SIE Div., a div. of Dresser Industries, Inc.

The English Electric Co., Ltd., English Electric House — see D1

Epso, Inc.

Gulton Industries, Inc.

The Hoover Company, Electronics Div.

Maxson Electronics Corp.

Midwest Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7509, Tulsa 10, Okla. / FM telemetry system components / DESCR: subcarrier discriminators, voltage controlled oscillators, mixer amplifiers, reference oscillator subcarrier mixers, compensation delay units / USE: instrumentation systems, data transmission / $1000 to $2,500 / T10

Shand and Jurs Co., a subsidiary of General Precision Equipment Corp., 2600 Eighth St., Berkeley 10, Calif. / telemetering systems / DESCR: RATE — Remote Automatic Telemetering Equipment. Data gathering, control and constant alarm scanning / USE: for the petroleum, chemical and allied industries / - / T10

Wiancko Engineering Co.

Wincso Instruments & Controls Co.

T11. TERMINALS

AMP, Inc.

Cinch Manufacturing Corp.

Sylvania Electronic Systems

ANAXE Instruments inc., 7671 Hayvenhurst Ave., Van Nuys, Calif. / TAPE PERFORATING PUNCH / DESCR: punch for mylar or paper tape; up to 60 characters per second; 5, 6, 7, or 8 hold code; non-synchronous operation / USE: as output device for computers or data processing equipment / $400 to $2000 / T8

Computers and Automation for June, 1962

89
STL PROGRAMMERS

STL's Computation & Data Reduction Center, one of the nation's largest and most advanced computation facilities, is expanding to permit the solution of increasingly complex problems in converting physical concepts into specifications for advanced space systems.

This Center is part of STL's new Space Technology Center, which adds a new dimension of competence to the total space and missile capabilities of Thompson Ramo Wooldridge. This ultra-modern, advanced complex at Redondo Beach, just south of LA International Airport, is specifically designed for research, development, fabrication, integration, and test of spacecraft, and all associated space-qualified hardware, including subsystems, components and aerospace ground support equipment.

Immediate assignments exist for programmers and mathematicians in the following areas:

GENERAL SCIENTIFIC PROGRAMMERS

BS in Math or Physics plus experience in high speed digital computers, to assist in the solution of problems arising in missile and space vehicle engineering, with responsibility for direction, programming, debugging and analysis of computer solutions.

TEST EVALUATION PROGRAMMERS

BS or advanced degree in Math or the Physical Sciences, with programming experience on high speed digital computers, and experience with scientific test data and statistical methods. Responsibilities will include mathematical and computational aspects of physical problems, and the formulation and programming of test evaluation programs employing data obtained from various test facilities and systems, including flight test telemetry.

MANAGEMENT SYSTEMS PROGRAMMERS/ANALYSTS

BS or advanced degree in Math or the Physical Sciences, with experience in processing systems to develop and present computer-supported management information systems. Responsibilities will include design, presentation and computer implementation of management information-data processing systems.

NUMERICAL ANALYSIS/APPLIED MATH./STATISTICS

PhD for investigation of analytical and/or computational solutions, theoretical and experimental studies related to new numerical methods, and research in applied mathematics including non-linear mechanics and continuum mechanics. Statistician requirements include mathematical statistics or electronic engineering, with experience in Stochastic processes and Information Theory.

Qualified applicants are invited to write to Dr. R. C. Potter, Manager of Professional Placement and Development at STL, an equal opportunity employer.

STL MATHEMATICIANS

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SPACE TECHNOLOGY LABORATORIES, INC.

One Space Park, Department P., Redondo Beach, California a subsidiary of Thompson Ramo Wooldridge Inc.
Cybertronics, Inc., *a / digital pattern generator / DESCR: ferro-magnetic programmer with ten outputs each having 4 serial bits for one-shot or cycling operation at 250 kc. Pulses changeable. External or internal triggering / USE: testing and simulation of digital and magnetic tape systems. Flexible fixed random access storage / $300 to $700 / T11.1

Datapulse Inc., 509 Hindry Ave., Inglewood, Calif. / Model 102 3 mc Pulse Generator / DESCR: provides ±50v into 50a-pulses at 10 nanosec. rise time, repetition rate to 6 mc, duration 50 nanosec. -- 10 milliseconds. / USE: clock signal pulse testing / $720 to $820 / T11.1

Datapulse Inc., *a / DESCR: Model 103 Transistorized Pulse Generator / DESCR: generates single or double pulses, with separate delay, at repetition rates to 5 mc. Plug-in output amplifiers available provide ±15v into 50a variable DC level output, pulse modulated sub-carrier, or 5 nanosec. rise time pulses / USE: clock and pulse test signal generator / $1000 to $2200 / T11.1 Datapulse Inc., *a / Model 104 10 mc Pulse Generator / DESCR: ±40v into 50a-pulses at 10 nanosec. rise time, rep. rate to 10 mc, duration 10 nanosec. -- 50 milliseconds. / USE: clock and signal pulse tests, magnetic device testing / $1790 / T11.1

Deleo Radio Div., General Motors Corp. Digital Service Labs

DIT-MCO, Inc., Electronics Div.

Electro-Mec Instrument Corp., 47-51 33rd St., Long Island City 1, N. Y. / oscilloscopes / DESCR: single measuring fixture for precise measuring and testing of potentiometers, sync-chron and similar rotary electronic components / $375 to $410; special on quotation / T11.1

General Dynamics/Astronautics a Div. of General Dynamics Corp.

Harman-Kardon Inc., Data Systems Div. -- see C54

Hathaway Instruments Inc.

The A. W. Haydon Co. -- see T11.3

Hewlett-Packard Co., 1501 Page Mill Rd. Palo Alto, Calif. / oscilloscopes / DESCR: models from dc to 100 k to dc to 40 mc. sampling oscilloscope to 1000 mc. Some with dual trace, delayed sweep, X-Y output for recording / USE: viewing measuring waveforms, rise and decay time, time interval, etc. / $475 to $3500 / T11.1

Ibm Industries

Kay Electronics Co.


Maxon Electronics Corp.

Midwestern Instruments, Inc., 41st and Sheridan Rd., P. O. Box 7650, Tulsa 18, Okla. / recording oscillographs / DESCR: photographic, direct process, 6 kc flat frequency response, up to 60,000 record speed to 170 ips, internal programmable available / USE: test instrumentation and recording / $1500 to $9000 / T11.1


Radiation Incorporated

Sunshine Scientific Instruments -- see A7

TriO Laboratories, Inc.

Univac Military Operations of Sperry Rand Corp.

Westgate Laboratory, Inc.

Wiencko Engineering Co.

MINNESOTA

T11.2 THIN-FILMS, MAGNETIC


Texas Instruments Inc. -- see C26

T11.3 TIMING DEVICES

Amplifier Corp. of America

Bowmar Instrument Corp., 8000 Bluffton Rd., Ft. Wayne, Ind. /USE:

Events Indicator 1909 / DESCR: electrically operated unit reads digitally to 9999 events, operates to 10 counts/second. Mounts to panel with flange. Measures 6.70" diameter, 1.660" long / USE: equipment testing reliability studies, periodic maintenance / $70 each* ($100 lots) / T11.3

Bowmar Instrument Corp., *a / Elapsed Time Indicator 1440 / DESCR: time indication to 9999 hours, readable to 6 feet away. Utilizes digital counter in .670" diameter window, instead of "wrist watch" presentation. Ac and dc types available / USE: records operating time for all equipment types / $55 each* to $60 each* ($100 lots) / T11.3

Chrono-log Corp., 2563 W. Chester Pike, Broomall, Pa. / internal computer clock systems / DESCR: enters time and date into computer memory under program control for automatic job billing and automatic monitor programs. Available for 709, 7090, Burroughs 220, others / -- / $735 to $1500 / T11.3

Computer Equipment Corporation

Electro-Counters, Inc. -- see C54

Ginnini Controls Corp.

Harman-Kardon Inc., Data Systems Div. -- see C26

The A. W. Haydon Co., 222 N. Elm St., Waterbury 20, Conn. / electromechanical, electronic timing devices, timing motors, automated test equipment / DESCR: timers, events counters, stepping devices. 3/4 oz. time and events indicators, digital readout. Transistorized and binary crystal-controlled electronic timers. Portable and console electronic system analyzers / USE: to control and test operation of military, commercial equipment and systems / -- / T11.3

TeleX/Amoco, a Div. of TeleX, Inc.

The expanding utilization of NCR's computer systems has created new opportunities for experienced programmers familiar with automatic programming techniques. College education, plus 2-5 years' experience with large scale magnetic tape systems can qualify you for a rewarding career with NCR, one of the world's leading business machine manufacturers. Recognized and respected wherever men trade, NCR stands alone for its creative and flexible approach to business system development.

Aside from the opportunities present in Programming Research, other openings in our expanding operation include:

- Installation Representative: experience required, covers magnetic tape system programming, knowledge of complete business systems, and ability to work effectively as a representative of NCR.

- Programmer: for small systems work which requires good background in data processing as related to normal business functions and some knowledge of programming of magnetic tape systems. Intermittent customer contact.

- Instructor: experience and education should be such that the person employed can effectively train programming personnel. Familiarity with math and business systems is desirable. Programming of magnetic tape systems necessary.

Other opportunities may more nearly meet your particular experience and aspirations. To investigate, you need only write, sending complete resume to:

T. F. Wade, Technical Placement, The National Cash Register Company, Main & K Streets, Dayton 9, Ohio

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Products and Services

TIIA. TRANSDUCERS

The Bristol Co.
Bytrex Corp., 50 Hunt St., Newton 58, Mass. / transducers / DESCR: semiconductor strain gage pressure, load force transducers / TIIA
Consolidated Controls Corp.
Consolidated Electrodynamic Corp.
Electro Products Laboratories, Inc.
Fairchild Controls Corp., 225 Park Ave., Hicksville, N. Y. / 35-6 family — silicon semiconductor strain-gage pressure transducers / DESCR: piezoresistive sensing elements; d.c. signal as high as 5v.; has infinite resolution, temperature compensation, highest repeatability. Auxiliary modules: internal calibration, supply voltage regulation; follower output for flow output impedance / USE: for applications where size and weight are not critical considerations / custom depending on quantity / TIIA
Fairchild Controls Corp., on / potentiometric pressure transducers / DESCR: rugged, precision instrument for measuring absolute, gauge or differential pressures of corrosive and non-corrosive gaseous or liquid media, with static or dynamic inputs / USE: for measuring altitude, airspeed, pressure ratio and Mach number / custom depending on quantity / TIIA
Giannini Controls Corp.
Gulton Industries, Inc.
Hagan Chemicals & Controls Inc.
Hewlett-Packard Co.
Hydropoise Inc., 230 S. Wells Fargo Ave., Scottsdale, Ariz. / turbine flow transducers / DESCR: transducer inserted in fluid line produces pulses proportional to flow. 0.5 to 12 inches diameter, covers flows 1.0 to 10,000 GPM. Associated readout, control equipment / USE: for indicating, recording and control of liquids and gases / $335 to $6500 / TIIA
Industrial Nucleonics Corp. — see A6
International Resistance Co.
Pacific Magnetic Corp., Electronic Center, Romoland, Calif. / magnetic speed transformer / DESCR: special designs to meet customer requirements. Transforms mechanical motion into AC with frequency proportional to speed / USE: to register count of rpm of a rotating device and speed of moving objects / $25 to $300 / TIIA
Sanborn Company, 175 Wyman St., Waltham 54, Mass. / transducers / DESCR: velocity (linear), DCFT displacement, pressure, displacement probes, transducer converters (permit use of AC transducers with DC or 115V, 60 CPS, AC), linear motion displacement / $15 to $200 / TIIA
Servomechanisms/Inc.
Applied Dynamic Programming

By Richard Bellman and Stuart Dreyfus. Dynamic programming, introduced as a theory which offered a versatile mathematical approach to diverse complex situations involving multistage decision processes, has become a valuable tool for treating many challenging problems in economic, industrial, scientific, and even political spheres of modern life. This book deals with computational aspects of applying dynamic programming to problems which stretch the confines of conventional mathematical theory. A RAND Corporation Study. Approx. 400 pages. $8.50

Order through your bookstore
Princeton University Press
Princeton, New Jersey

Series F2-2000 / USE: telemetry and test stand instrumentation / $665 to $1500 / T11
Winston Instruments & Controls Co., 1533 26th St., Santa Monica, Calif. / temperature transducers / DESCR: resistance types; range -150 to -2000°F / varies / T11A

T12. TRANSFORMERS

Airpax Electronics, Inc., Aladdin Electronics, Div. of Aladdin Industries, Inc.
Amplifier Corp. of America
Microtronics, Inc.
Pacific Magnetic Corp., Electronic Center, Romoland, Calif. / transistors / DESCR: industrial and military types custom designed from miniature to CAVAs. Specialize in epoxy molded utilizing slush molding process; brings tooling costs down to a minimum / USE: AF and power applications / 75¢ to $350 / T12
Polyphase Instrument Co. -- see D3
Sola Electric Co., 1717 Busse Rd., Elk Grove Village, Ill. / constant voltage transformers / DESCR: Sola constant voltage transformers are static-magnetic voltage regulators / USE: in computing systems, analog computers, data processing equipment, digital computers, and computational equipment / $15 to $900 / T12
Superex Electronics Corp.
Tele-Relay, Ballston, 1701 N. Calhoun St., Fort Wayne 7, Ind. / specialty transformers / DESCR: design, development and production of specialty transformers, including power, saturable core devices, and pulse. Engineering assistance if required / - / - / T12

T13. TRANSFORMERS, PULSE

Aladdin Electronics, Div. of Aladdin Industries, Inc.
El-End Manufacturing Co., 4300 N. California Ave., Chicago 18, Ill. / pulse transformers / DESCR: all types for coupling and blocking oscillator applications. Power levels from ½ watt/microsec to 10 watt/microsecond / USE: as above / $1, up / T13
Ferroxcube Corp. of America
Polyphase Instrument Co. -- see D3
Sprague Electric Co.
Technitol, Inc.
Telex/Ballastron -- see T12
Valor Instruments, Inc., 13214 Cronshaw Blvd., Gardenia, Calif. / pulse transformers / DESCR: miniature / USE: pulse coupling, pulse inverting and blocking oscillator applications / $1 to $25 / T13

T14. TRANSISTORS

Calvert Electronics Inc.
Clevite Transistor
DI/AN Controls, Inc.
Fairchild Semiconductor, 5455 Whisman Rd., Mountain View, Calif. / transistors / planar and planar-epitaxial transistors. High-speed nonsaturating, high-speed saturating switching types of transistors / USE: components for logic circuits: switches, gates, flip-flops, etc. / varies / T14
Hughes Semiconductor Division
Motorola Semiconductor Products Inc. -- see S2
Radio Corp. of America, Semiconductor and Materials Div.
Raytheon Co., Semiconductor Div.
Sanders Associates, Inc.
Sperry Semiconductor Div. of Sperry Rand Corp.
Sparque Electric Co.
Tech Serv Inc.
Texas Instruments Inc., P. O. Box 5012, Dallas 22, Texas / transistors / DESCR: complete spectrum of PNP-NPN germanium and silicon including field-effect, darlington, unijunction and avalanche; covering 1/100,000 to 25 amps and frequencies 2,000,000,000 cps / USE: high and low speed logic; tape, disc, drum, core, and thin film drivers; photo, tape and memory read amplifiers; power supplies; punch and printer drivers; analog to digital and digital to analog converters / - / T14
Texas Instruments Inc. -- see T15, T16

T15. TRANSISTORS, GERMANIUM

Clevite Transistor
Delco Radio Div., General Motors Corp.
Motorola Semiconductor Products Inc. -- see S2
Philco Corp., Lansdale Div., a subsidiary of Ford Motor Co.
Radio Corp. of America, Semiconductor and Materials Div.
Raytheon Co., Semiconductor Div.
Sylvania Electric Products Inc., Semiconductor Div. -- see D7
Texas Instruments Inc., P. O. Box 5012, Dallas 22, Texas / transistors / DESCR: PNP-NPN mesa, planar, epitaxial, grown junction, field effect, darlington, unijunction and avalanche; including 1 amp thin-film drivers with rise times under 1/20,000,000,000 seconds through 25 amp power units / USE: high and low speed logic; tape, disc, drum, core and thin-film drivers; photo, tape and memory read amplifiers; power supplies; punch and printer drivers; analog to digital and digital to analog converters / - / T14
Texas Instruments Inc., Semiconductor Components Div. -- see C26
Transistor Electronic Sales Corp.
T17. TRANSLATING EQUIPMENT

Beckman Instruments, Inc.  
Benson-Lohner Corp.  
Computer Concepts, Inc.  
Control Data Corporation  
General Dynamics/Astronautics  
LFE Electronics, Systems Division, a Div. of Laboratory for Electronics, Inc. — see 12  
Radio Corporation of America, Electronic Data Processing  
Soroban Engineering, Inc.  
Trak Electronics Co., Inc., 59 Danbury Rd., Wilton, Conn. / TXA-to-CCITT for numerical control; allow two-way customer to customer Telex calls between foreign and domestic stations. Operate with standard teletype equipment / - / $16,000 / T17

T18. TYPEWRITERS, ELECTRIC, CONTROLLED

Benson-Lohner Corp.  
Friden, Inc., 2350 Washington Ave., San Leandro, Calif. / Friden Flexowriter Automatic Writing Machine / DESCR:-automatics under control of punched paper tape, edge-punched cards or tab cards; produces documents; punches new tape or cards for further processing / USE: general data processing, computer input/output, numerical control, etc. / - / T10  
Friden, Inc., 49A / Friden Numerical Control Flexowriter / DESCR: produces and verifies punched paper tape (with tab cards) on the master Flexowriter. Several models available / USE: document preparation / - / T18  
Friden, Inc., 49A / Friden CTB Computer / DESCR: prepares documents that require writing and computing, with tab card output. All data (numeric and alphabetic) entered from standard electric typewriter keyboard. Automatic computing / USE: billing and other writing-computing applications / - / T18  
Friden, Inc., 49A / Friden DCP Computer / DESCR: prepares documents that require writing and computing, with tab card output. All data (numeric and alphabetic) entered from standard electric typewriter keyboard. Automatic computing / USE: billing and other data processing / - / T18  
International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N. Y. / IBM 024 Typewriter Card Punch (with non-printing card punch) and IBM 026 Typewriter Card Punch (with printing card punch) / DESCR: each machine has two units: IBM electric typewriter and printing (024) or non-printing (024) card punch / USE: products and services prepare punched cards for accounting use as an automatic by-product of typing operations / Monthly rental $95 to $145; selling price $3700 to $7400. All prices exclusive of tax / T18  
International Business Machines Corp., Data Processing Div., 4H / IBM 070 Document Writing System / DESCR: system allows operator to produce business information simultaneously in three forms: typewritten copy, punched data on paper tape. Input may be from punched cards, punched paper tape and keyboard / USE: for creating documents in three forms for accounting and computing use / Monthly rental $145 to $450; selling price $6300 and up. All prices exclusive of tax / T18  
LFE Electronics, Systems Division, a Div. of Laboratory For Electronics, Inc. — see 12  
N. V. Electrológica  
Soroban Engineering, Inc.  
Underwood Corp.

T19. TUBES, ELECTRONIC

Amperex Electronic Corp.  
Calvert Electronics Inc.  
Ferranti Electric, Inc.  
General Electric Co., Receiving Tube Div., Dept. 7,000 a-c  
Graham, N. Y. / receiving tubes and thermionic devices / DESCR: receiving tubes: glass and metal octal, miniature, sub-miniature, industrial, planar type metal-ceramic miniature, micro-miniature, ceramic octal, miniature tubes and cells; thermionic integrated micro-module circuits; relay reed switches / USE: in telecommunications equipment / - / $40 to $100 / T19  
Nucleonic Products Co., Inc.  
Raytheon Co., Industrial Components Div.  
Thermoson, Inc., 375 Fairfield Ave., Stamford, Conn. / special purpose vacuum tubes / DESCR: temperature limited diodes; true rms sensing of a-c waveforms independent of frequency or distortion / USE: reference devices in power supplies and voltage regulators. Also as noise sources for RFI testing and as reference device in special meters / $4.40 to $15 / T19  
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y. / electronic tubes / DESCR: complete line of tubes including receiving and special purpose, image pick up and storage display tubes, cathode ray display, multiplier phototubes, electrical-electrical storage tubes / USE: electronic information transmission and signal pick up and display devices / $1 to $7500 / T19

VI. VISUAL OUTPUT DEVICES

Anadex Instruments Inc.  
Beckman Instruments, Inc., Berkeley Div.  
Budd Electronics  
Control Data Corporation  
Electro Instruments, Inc. — see A3  
The Electro Nuclear Systems Co., Schools Division, Ferranti-Packard Electric Ltd., Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ontario, Can. / magnetic matrix modules / DESCR: range of magnetic encoding, reflective, character-forming display modules; switch rapidly with two millisecond pulse; magnetic memory techniques hold display without power / USE: display arithmetical display; military status displays / - / V1  
General Dynamics/Electronics  
Genisco, Inc.  
GVL Div. — General Precision, Inc., Pleasantville, N. Y. / GVL Microtelevision / DESCR: provides local or remote magnification (up to 300X) and viewing of microfilm, roll, film, or solid objects / - / V1  
GVL Div. — General Precision, Inc., 9A / industrial/commercial television / DESCR: standard and high resolution equipment; banks, plants, broadcast studios, under water, pipedriving, wide-angle / USE: industrial and commercial applications / - / V1  
Image Instruments, Inc.  
Information Products Corp. — see 13  
International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N. Y. / IBM 740/780 Cathode Ray Tube Recorder / DESCR: electronic output device for TIV, TIV9, provides an output for recording data points on the faces of two television-like tubes at 7,000 a second / USE: scientific, engineering and design problems / Monthly rental $2850; selling price $112,000. All prices exclusive of tax / V1  
LFE Electronics, Systems Division, a Div. of Laboratory For Electronics, Inc. — see 12  
Midwestern Instruments, Inc. — see C3A  
Monroe Industries, Inc., 924 36th St., S.E., Grand Rapids, Mich. / illuminated components for visual displays / DESCR: lighted plastic pointers, dials, bezels, spheres and counter wheels. Precision machining marking, engraving; injection molding. 3-dimensional engraving. Lackon® edge-lighted instrument panels. Precision silk screening / USE: illuminated instrument readout displays / - / V1  
Non-Linear Systems, Inc.  
The Perkin-Elmer Corp.  
Radiation Instruments Div.  
Strand Engineering Co., 7300 Huron River Dr., Dexter, Mich. / Datronics LG-9 / DESCR: generates straight lines on CRT upon digital specification of end points and constant writing rate with digital commands for intensity modulation. Full scale speed: 40 microsec nominal / USE: as a display positioner component / $70,000 to $15,000 / V1

(Please turn to page 156)
Are you interested in exploring the capabilities of the computer?

Some of the most important programming developments are taking place now at IBM.

The broad scope of work underway at IBM offers important advantages to members of our professional programming staff. They have the opportunity to work on projects taken from the broad range of programming. They are face to face with the frontiers of applied, scientific and administrative programming. For example, what advanced programming techniques interest you the most: multiprogramming systems... compilers... problem-oriented languages and processors? Programmers at IBM are exploring these techniques and many more.

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At IBM, you would find yourself in the kind of atmosphere that encourages accomplishment. You would help to design new hardware systems. You would work side by side with men of eminent professional stature: scientists, engineers and mathematicians who pioneer in the research and development that make new computing systems possible.

What's more, you would be able to give your projects the time they deserve. Time for thinking. Time for achievement.

The scope of programming at IBM stimulates professional growth. It offers possibilities which merit serious consideration whether you are a master of the skills of programming or a relative newcomer to the field. Salaries and benefits at IBM are excellent. If you have experience in scientific or commercial programming, we would like to acquaint you with the wide range of responsible positions on our programming staff.

Programming facilities are located in San Jose, Calif.; Washington, D.C., area; Lexington, Kentucky; Rochester, Minnesota; Omaha, Nebraska; and New York, Endicott, Kingston, Owego, Poughkeepsie and Yorktown Heights, New York. IBM is an Equal Opportunity Employer.

For further details, please write, outlining your background and interests, to: Manager of Professional Employment, IBM Corporation, Dept. 539S, 590 Madison Ave., New York 22, N.Y.
SURVEY OF
COMPUTING SERVICES

Following is a survey of computing services.

The survey form asked for:

1. Brief description of the quantity and types of computing machines and equipment which you have?
2. Brief description of the types of computing problems which you specialize in?
3. Number of employees? ______
4. Year established? ______
5. Any remarks? ______

Filled in by: __________________________
Organization __________________________
Address ________________________________

For school, college, and university computing services, see the section of the directory "School, College, and University Computer Centers".

See also in the "Roster of Products and Services", entries under the heading "C27. Computing Services".

Each full entry from an organization that replied to the survey is in the form of: Name and address of computing service / Equipment / Problems specialized in / Size (number of employees) Established year of establishment. Other entries should be self-explanatory.

The abbreviations used include the following:

Ss - Small size, up to 50 employees;
Ms - Medium size, 50 to 500 employees;
Ls - Large size, over 500 employees;
Se - established a short time ago, 1951 or later;
Me - established a "medium" time ago, 1931 to 1950;
Le - long established organization, 1930 or earlier;
*C - "Checked" by the organization; "62" means "in 1962", etc.
G60 - "information gathered in 1960 but not checked by the organization"

All additions, corrections, and comments will be welcome.

Actuarial Computing Service, Inc., 1399 Peachtree St., N.E., Atlanta 9, Ga. / EQPM: - / PROB: specializing in computing applications for the insurance industry / Ss(7) Se(1956) / 660
Admiralty Research Laboratory, Queens Rd., Teddington, Middlesex, England / EQPM: Ferranti Pegasus / PROB: - / G62
ALWAC Computer Div., El-Tronics, Inc., 13040 S. Cerise Ave., Hawthorne, Calif. / EQPM: ALWAC III-E general purpose electronic digital computer, a drum storage serial binary machine with 8192 words main memory, 128 words fast access, completely alpha-numeric; decimal input-output equipment with 60-column card in and out; high speed paper tape in and out; and two magnetic tape units / PROB: general service bureau applications including accounting, numerical research, engineering, cataloging / Ms(60) Se (1952) / 6C 61
American Data Services, Inc., 2221 S.W. 5th Ave., Portland 1, Ore. / EQPM: Burroughs 205 EDP machine system, 4 magnetic tapes, paper tape, card in and out, on-line printer; typewriter output. Also, complement of IBM punch card equipment / PROB: engineering, commercial and scientific / Ss(20) Se(1959) / 6C 61
American Machine & Foundry Co., Digital Computer Facility, 140 Greenwich Ave., Greenwich, Conn. / EQPM: IBM 650 magnetic drum machine with alphabetic and special character device; IBM 653 floating decimal arithmetic unit and 3 index registers; digital plotter (10-2 x 17"), plus standard peripheral equipment / PROB: general engineering calculations; shock and vibration; nuclear reactor, electrical, and petroleum engineering; data processing / Ms(6) Se(1956) / 6C 62
Armour Research Foundation, 10 West 35 St., Chicago 16, Ill. / EQPM: UNIVAC 1105 computer and off-line high-speed printer; 8,192 words core storage, 32,768 words magnetic drum storage, 17 magnetic tape units buffered from central computer / PROB: engineering and scientific problem-solving, programming-system development, management-science/calculations / Ls(1250) Me(1936) / G60

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Computing Services


Automated Accounting Center of Conn., 7 Field St., Waterbury 20, Conn. / EQPM: Bendix G-15D general purpose computer, National Cash Register Electronic Magnetic Ink Reader-Sorter coupled to and under control of G-15D, 2 magnetic tape units with search and erase/rewrite feature, AN-1 paper tape reader and punch G, 6, 7 or 8 channel tape), off-line Flexwriters, Automated Postonics for ledger posting, magnetic ink printing equipment and paper tape to magnetic ink conversion equipment / PROB: commercial data processing including accounting functions, inventory and production control, payroll, demand deposit accounting, engineering, and miscellaneous applications / Ss(7) Se(1959) / °C 62

Bell Aerosystems Co., P.O. Box 1, Buffalo 5, N.Y. / EQPM: IBM 7090 computer; 2 IBM 1401's; IBM punch card equipment / PROB: engineering calculations, payroll, production control, budgeting, inventory control, accounts payable / Ms(90 in Data Center) Mc (1956) / °C 62

Bell Telephone Manufacturing Co., Automation Systems Division, Berkenrodelei, 33 Hoboken Antwerp, Belgium / EQPM: STANTEC computing system / PROB: - / °G 62

Bendix Computer Div. of the Bendix Corp., 5630 Arbor Vitae, Los Angeles 45, Calif. / EQPM: not generally considered a service bureau, but do market time on Bendix G-15's at factory-marketing headquarters / PROB: no specialty, programming services available / Ls(700) Se (1952; computer div.) / °C 62

Bendix Systems Division, 3300 Plymouth Rd., Ann Arbor, Mich. / EQPM: Bendix G-20 large scale digital computer, 32,000 word case storage, 8 magnetic tape stations, high speed printer and other off-line capabilities. High speed analog computer. COED II Digital Display and control console. Punched card processing facilities. PERT, linear programming, operation analyses, other management services and a FORTRAN compiler are available / PROB: engineering, satellite and missile simulations, data processing and reduction; linear programming and PERT, etc. / Ms(55 computer related employees of 1200 Bendix Systems Div. personnel) Se (1956) / °C 62

Berkeley Division, Beckman Instruments, Richmond Computation Center, 2200 Wright Ave., Richmond, Calif. / EQPM: 50-amplifier general analog computer / PROB: research and computer techniques, general purpose problem solving / Ss(5) Se(1956) / °C 62

Ernest E. Blanche & Associates, Inc., 10353 Kensington Pkwy., Kensington, Md. / EQPM: IBM 1401 System with magnetic tape and punch card input and output (4 tape drives), high speed printer; 38 IBM punch card machines; high-speed microfilm camera (18-1 and 30-1 reduction; 3 microfilm readers (1-18 and 1-30 magnification) / PROB: statistical analysis, correlation analysis, analysis of variance, frequency distributions, probability, forecasting; accounting - large volumes; traffic analysis - origin-destination studies, projection of traffic, highway and transit loading; engineering - cut and fill, highway design, highway construction; mathematical computations / Ms(9) Se(1955) / °C 62

Booz-Allen Applied Research, Inc., 4241 Fulton Pkwy, Cleveland 9, Ohio / EQPM: access to general purpose digital and analog computers; communication computers; data acquisition, analysis and presentation equipment; control and processing equipment and specialized instrumentation. Services in all technical areas and all phases of scientific consulting from basic research through prototype design, development, and test / PROB: system analyzing, equipment selection, system management, development of detailed software, special purpose circuit design, special purpose equipment design, prototype development and other technical studies / Ls(300) Le(1914) / °C 62

Broadview Research Corp., 1811 Trousdale Dr., Burlingame, Calif. / EQPM: arranged for / PROB: design and implementation of automatic programming systems, including the construction of scientific and business-oriented compilers; symbolic assembly programs; design and implementation of special-purpose, problem-oriented compilers; analysis and programming of scientific problems, including applications in celestial mechanics, photogrammetry, geodesy, civil engineering, and statistical analysis of data from experiments / Ms(80) Se(1951) / °G 60

Burroughs Corp., Computer Facility, Marketing, 460 Sierra Madre Villa, Pasadena, Calif. / EQPM: Burroughs 220 (10,000 words core, complete punched card and paper tape input-output, 9 magnetic tape units, 25 lines per second high speed printer with 1 magnetic tape unit) / PROB: all types, scientific, data processing, etc. Used by the Marketing Div. for software development, sales promotional demonstrations, and customer training / Ss(6, plus engineers) Se (1964) / °C 62

Canadian Armament Research and Development Establishment, P.O. Box 1427, Quebec, Canada / EQPM: ALMAC III-E / PROB: - / °G 62

Computing Services

Control programs, design of experiments and field tests, engineering and industrial research, electronics and communications, radio-spectrum utilization, value engineering, etc. / PROB: machine time / (1959) / °C 62

Clary Corp., Computer Div., 408 Junipero St., San Gabriel, Calif. / EQPM: Clary DEC-60 digital computer, oriented console, subroutine cartridges and automatic program control unit / PROB: numerical problems whose programming time on a large scale computer is at least five times greater than the computation time; preliminary and checksee computations that become tedious on a rotary calculator / Ms Se (1958) / °C 62

Collins Radio Co., Information & Science Center and Communication & Data Processing Div., 19700 San Joaquin Rd., Newport Beach, Calif. / EQPM: -- / PROB: computing services / Ls (1200) Me (1933) / °C 660

Computafix, Inc., 440 So. Brentwood Blvd., St. Louis 5, Mo. / EQPM: LGP-30, IBM 702, IBM 705 / PROB: automatic data processing, systems studies and operations research studies; computing equipment and programming staff available / Ms (10) Se (1956) / °C 660

Computech, Ind., 1177 Madison Ave., New York 22, N.Y. / EQPM: tape IBM 1401 with ancillary equipment / PROB: scientific and commercial data processing, computer programming and computer processing services as well as methods design, systems design, market research / Ms (40) Se (1957) / °C 62

Computer Advisors to Management (CAM), Division of Statistical Tabulating Corp., 104 South Michigan Ave., Chicago 3, I11. / EQPM: 14 data processing and computer centers, nationwide, containing IBM 1400-series card tape systems plus peripheral equipment and conventional punch card tabulating data processing machines / PROB: professional counseling for business, science, and government in the economic evaluation and application of computer systems for management information and control / Ls (5000) Se (1933) / °C 62

Computer Data Processing Company, Detroit, Mich. / EQPM: IBM 650 and peripheral equipment / PROB: all types; staffed with mathematicians, engineers and accountants / Ms (7) Se (1957) / °C 61


Computer Sciences Corp., Palos Verdes, Calif., and New York 22, N.Y. / EQPM: small to large scale computers available; 1107 computer and associated equipment in Los Angeles / PROB: computing, consulting, analysis and programming, and machine computation services; provides contracted analysis, programming and/or machine computation of engineering, scientific and business data processing problems; also feasibility studies for computer choice, staffing and other installation problems / Ms (135) Se (1959) / °C 62


ComputerMat, Inc., 1028 Milshire Blvd., 1 Angeles 27, Calif. / EQPM: IBM 1620 Data Processing System, complete data processing or "self-serve" use / PROB: civil, structural, petroleum and chemical engineering, numerical control, process and systems analysis, operations research, economic analysis, feasibility studies / Ms (7) Se (1960) / °C 62

ComputerMat II, 14027 Ventura Blvd., Sherman Oaks, Calif. / EQPM: IBM 1620 Data Processing System / PROB: civil, structural, petroleum and chemical engineering operations research, economic analysis, feasibility studies, business data processing / Ms (4) Se (1962) / °C 62


Control Data Corp., 501 Park Ave., Minneapolis 15, Minn. / EQPM: Control Data Model 1604 digital computer, advanced, large scale, solid state; Model 160 digital computer, desk-size, solid state; Model 160 data collector / PROB: business and accounting, engineering, scientific, data processing / Ms (460) Se (1957) / °C 660

Cook Research Laboratories, subdivision of Cook Electric Co., Morton Grove, Ill. / EQPM: Univac Solid State 90 Computer, card input-output and high speed printer / PROB: trajectory calculations; data reduction; many varied scientific problems; inventory control; payroll / Ls (4700) Ls (1967) / °C 62

Data Processing Corporation, 229 Baldwin Rd., Hempstead, N.Y. / EQPM: IBM 1401's and peripheral equipment / PROB: business, accounting, engineering and statistical projects / Ms (80) Se (1954) / °C 62

Diam Laboratories, Inc., 611 Broadway, New York 12, N.Y. / EQPM: Diam 120 computers, 444 summing and integrating amplifiers, 70 multipliers, associated function-generating equipment, recorders and plotting boards / PROB: ordinary and partial differential equations; heat transfer, aircraft guidance and control, nuclear reactor kinetics, process control, simulator design / Ms (12) Se (1955) / °C 62

Computing Services

EAI Computation Center at Los Angeles, Inc., 1500 E. Imperial Highway, El Segundo, Calif. / EQPM:
10 EAI Analog Computers: including 8 Pace 231R computers, 1 model TR-10, 1 model TR-48 (total of 730 amplifiers and associated non-linear equipment). High-speed repetitive operation available on three consoles, i.e., one 120 amp., one 80 amp. (Rep-op), one 100 amp., two 40 amp., two 80 amp. computers / PROB: pneumatic and hydraulic control systems; aircraft, missile and aerospace applications; microwave electronics, petroleum-chemical process control; nuclear reactor simulations; physiological medical applications; water conservation studies; statistical correlation studies; iterative and hybrid applications / Ss(11) Se(1956) / °C 62

Electronic Associates, Inc., P.O. Box 582, Princeton, N.J. / EQPM: 3 model 231-R fully expanded analog computer systems, each equipped with 8-channel rectilinear recorder and 11" X 17" X-Y plotter, one Model TR-10 desk-top transistorized analog computer, 1 repetitive operation excessory for oscilloscope display, 1 prototype HYDAC (Electronic Associates' new Hybrid-Digital-Analog Computer) / PROB: aero-space and weapons systems analysis, industrial process and chemical industries studies relating to the design optimization and analysis of processing engineering problems and related complex engineering problems requiring mathematical formulation and computer solution. Bulletins, rate schedule, and unclassified problem reports available on request / Ss(30) Se(1954) / °C 62


Ferranti-Packard Electric Ltd. (Electronics Div.), 16 Industry St., Toronto 15, Canada / EQPM: Ferranti Limited Pegasus Digital Computer; large program library available for this medium-size, digital, general purpose computer / PROB: applications in industry, science and engineering / Ms(400) Le(1913) / °C 60

GPS Instrument Co., Inc., 180 Needham St., Newton, Mass. / EQPM: compressed timescale analog computer, including statistical and iterative analyzers and programmers. Equipment available includes both non-linearity simulators such as multipliers, function generators, log units, etc. Available equipment will handle all conventional applications / PROB: statistical and iterative techniques, including automatic control, basic physical phenomena, evaluation of data, expressible by differential and algebraic equations. Specialize in wide bandwidth operation for high dynamic accuracy in compressed timescale computing with ability to read out in real time / Ss(414) Se(1955) / °C 62

IBM World Trade Corporation Data Center, Avda. Pte. Roque Sáenz 933, Buenos Aires, Argentina / EQPM: IBM 650; IBM 1401 with 4 units; complete IBM peripheral equipment / PROB: program courses and conferences on the possible applications for the future use of IBM equipment in Latin America / °C 62

The I.D.R. Co. (Industrial Data Reduction), 4740 Spruce St., Philadelphia 39, Pa. / EQPM: large scale digital computing equipment. IBM 1401 on premises, other machines used as needed / PROB: full line of data processing. Service from analysis through execution. Publishing industry services a specialty / Ss Se(1961) / °C 62

Ing. f. a Nordisk ABB AB, Faack, Solna 1, Sweden; Subsidiaries: Nordisk ABB, Waerner & Co., Römistrasse 8, Zürich, Nordisk ABB Deutische GmbH, Bonner Strasse 117, Dusseldorf, Tyskland Iberica ABB, Torre de Madrid, Madrid 13, Spain / EQPM: Facit EDB 3 computer with 4000 core memory and 8000 drum memory, magnetic type and carousel type. Line plotter, made by Dobbie Melness (Electronics) Ltd., Scotland / PROB: field data processing in civil engineering, road calculations, and a special department for structure calculations / Ss(25) Se(1959) / °C 62

Institut für Angewandte Physik Abteilung Rechen­maschine, Schloss-Platz 5, Münster (Westfalen) Germany / EQPM: 22 electronic computer / PROB: - / °C 62

Institute for Scientific Information, 33 S. 17th St., Philadelphia 3, Pa. / EQPM: 10 IBM 026 K.P., 8 IBM 956 Ver., 1 IBM 082 Sort. / PROB: scientific information, processing scientific journals, abstracting chemical literature, indexing scientific literature / Ms(65) Se(1958) / °C 62

I/S Datacentralen of 1959, St. Kongensgade 456, Köbenhavn K, Denmark / EQPM: 2 IBM 1401-4K-3/729-2; 1 IBM 7070-10K-6/729-4; input: 80 cts., punched card - magnetic tape; output: magnetic tape-1401 printing or punching; early card read 7070, tape switching device: 7070 up to 8 tapes, floating decimal; 1401 up to 3 tapes / PROB: management consultant services; problem definition; planning; programming; test, etc.; machine operating; quality control; available to all public institutions and to customers outside the state, municipalities and the parish organizations for all sorts of computations / °C 62

The ITT Data Processing Center, P.O. Box 285, Paramus, N.J. / EQPM: 1 IBM 7090 large computer, 1 IBM 7070 large computer, 4 IBM 1401 medium computers, one 407 tabulator, two 519 reproducers, one 557 interpreter, one 007 collator, two 082 sorters, five 056 verifiers, fourteen 026 keypunches transceivers, 250 programmers and analysts. Control our own IBM 7090 computer with a backup of communications equipment from the whole ITT System / PROB: business data processing, scientific computing, engineering calculations, statistical analysis, programming, systems analysis, 7090, 7070, and 1401 block time, communications, data transmittal / Ms(300) Se(1958) / °C 62

KCS Ltd., 20 Spadina Rd., Toronto 4, Canada, and KCS (Quebec) Ltd., Suite 104, 640 Cathcard St., Montreal, Canada / EQPM: IBM 650; 4 tapes and ancillary equipment / PROB: traffic research; data processing; scientific calculations; linear programming; simulation; etc.; for business, industry and government / Ms(65) Se(1954) / °C 61

Laboratoire de Calcul Numérique du Centre National de la Recherche Scientifique (CNRS), 11, Rue Pierre Curie, Paris, V, France / EQPM: Elliot 403C; Gamma AET Bull, large capacity magnetic drum storage and small rapid access memory; IBM 650, built-in floating point, index registers and magnetic storage; soon to have IBM 7044 / PROB: data processing / Ms(65) Se(1957) / °C 61
Computing Services


Minneapolis-Honeywell Regulator Co., Electronic Data Processing Div., 63 Walnut St., Wellesley 61, Mass. / EQPM: Honeywell 800 in operation at Wellesley, Mass., also McDonnell 153 and 200 volt analog; Honeywell 800 in operation at Brighton and Boston, Mass., on Honeywell Service Bureau assignments. A second Honeywell 800 Service Bureau will be established in August at the Univ. of Southern Calif., Los Angeles. A Honeywell 400 system will be installed at the Wellesley Bureau early in 1962 / PROB: business data processing and scientific computation. Honeywell Service Bureaus at present are not accepting outside work, but are principally engaged in pre-delivery check-out of customer programs and check-out of Honeywell automatic programming aids / Ms(90) Se(1956) / °C 61

National Physical Laboratory, Mathematics Div., Teddington, Middlesex, England / EQPM: DEUCE and ACE / PROB: numerical analysis, applied mathematics, theoretical physics, data processing / Ms(60) Me(1915) / °C 62

Naval Research Establishment, Grove Street, Darien, L. Scotia, Canada / EQPM: ALMAC III / PROB: - / °C 62

Northrop Corp., Norair Div., Information Processing Center, 1001 E. Broadway, Hawthorne, Calif. / EQPM: Univac 1401-4 - 7300 magnetic tapes, 12K memory, hardware multiply divide, advanced programming, etc. Data processing equipment includes: 2 IBM 407's, 3 sorters, 2 collators, 2 tape-to-card, etc. / PROB: in addition to regular data processing operations, specialize in running engineering, statistical, and management science applications on our computer, using available library programs, modifying them where necessary, or writing new ones / ss(40) Se(1950) / °C 62

Mathematischer Beratungsdienst, Kleppingstr. 26, Dortmund, Germany / EQPM: electronic computer ELECTROLOGICA X; 6192 core store memory; 49% words fixed store; 2 punched tape readers (150 ch/sec); 1 high speed punched tape reader (1000 ch/sec); punched card read and punch unit; 1 high speed paper tape punch (300 ch/sec); 14/48 millimeters CREED); 1 paper tape punch (25 ch/sec); one type-writer / PROB: civil engineering, bridge building; highway engineering, chemical technology; operations research, data processing with punched tape and punched card; engineering, ship building; other mathematical and physical problems / ss(40) Se(1957) / °C 62

McDonnell Automation Center, division of McDonnell Aircraft Corp., Box 516, St. Louis 66, Mo. / EQPM: IBM 7090, 7090 and eight 1401's; also FAME, CEAC and Analog Computer facilities: desk size computers include two IBM 1620 /
Computing Services

if. / EQPM: Digital: IBM 7090 (second IBM 7090 by 1 November 1962); 3 IBM 1401's (two to have double printers); 3 IBM 7044's on order for mid 1963; 2 IBM 1301's on order for early 1963; 1 IBM 407 with 407 and high-speed plotter; miscellaneous punch card equipment. Analog: (as calculators) 416 d-c operational amplifiers; 20 servo multipliers; 30 channels of electronic multiplication; 4 resolvers; 37 function generators; 8 recorders; 4 special coefficient racks. Analog: (as simulators and model testers) 142 d-c operational amplifiers, 5 recorders. Data Reduction: (for reducing test data) 1 Tele再也 miscellaneous other equipment / PROB: all types of digital and analog engineering calculations; simulation and model testing; Manufacturing Control; numerically controlled manufacturing tool tapes and 6 pre-processors; war gaming; operations research; reconnaissance data handling; engineering and scientific research and development; all business data processing including financial, manufacturing, materiel, etc.; integrated management systems supported by integrated data processing / Ms(200) Me(1949) / *C 62

Nuclear Development Corp. of America, 5 New St., White Plains, N.Y. / EQPM: Burroughs 205 data processing machine, 2 magnetic tape units, paper tape input / PROB: nuclear reactor and shielding calculations. Several large scale Monte Carlo codes for neutron simulation studies in various geometrical shields. A code for the numerical solution of the Boltzmann equation in spherically symmetric geometries was conceived, analyzed and coded at NDA. Complete performance of problem analysis, coding, and running of production problems / Ms(276) Me(1948) / *C 61

N.V. Electrologica, Stadhoudersplantsoen 214, The Hague, Netherlands / EQPM: Electrologica X-1; basic unit, memory 12283 words; input: punched tape, punched cards; output: punched tape, punched cards, outputwriter punched card read and punch unit (7200 cards per feed per hour), fast card reader (42000 cards per hour) / PROB: programming, system analyses / G 62

Ontario Dept. of Highways, Downsview, Ontario, Canada / EQPM: IBM 659 - 4000 word memory, 543 input unit; 544 output unit, 4 mag. tapes, I.A.S.; floating point arithmetic, 1 IBM 407; 12 IBM 026 keypunch; 8 IBM 056 verifier, 5 IBM 063 / PROB: traffic studies; minimum route gravity model, traffic assignment; annual average daily traffic prediction from minimum counts, bridge design; aid in general way on request / G 62


Philco Corp., Computer Div., Service Bureau, 3900 Welsh Rd., Willow Grove, Pa.; also Western Computing Center, 3875 Fabian Way, Palo Alto, Calif. / EQPM: Philco 2000: asynchronous operation, parallel logic, transistorized circuit design, fixed word of 48 bits in units of 4,096 to 32,768 words with 10 microsecond ac-

cess time / PROB: all scientific and commercial applications / Ss(48), in Service Bureau Se(1958) / *C 62

Quantaum, Inc., Lubury Ave., Wallingford, Conn. / EQPM: IBM 1620 tape with peripheral equipment / PROB: engineering and scientific, management operational programming and analysis, consulting / Ss(30) Me(1948); computing center, 1960) / *C 61

Rand Corporation, Santa Monica, Calif. / EQPM: Johnniec, IBM 7090 / PROB: linear programming, modelling, scientific computing generally / Ls (1100; 100 in Computer Sciences Dept.) Me(1947) / *C 62

RCA Electronic Data Processing Center, 45 Wall St., New York, N.Y.; Cherry Hill, Delaware Township, Camden 6, N.J.; 1725 K St., N.W., Washington 6, D.C.; 110 N. Wacker Dr., Chicago 6, Ill.: 343 Sansome St., San Francisco, Calif. / EQPM: maximum complement RCA 501 and peripheral equipment / PROB: specific services available for any commercial or government applications, as follows: systems analysis, system design, programming, machine coding, electronic data processing from source documents to completed results, computer facility design and construction supervision, services of operating personnel, package programs for market forecasting, site selection, attitudinal surveys, economic forecasting / Ms(200) Se(1959) / G 60

Recording & Statistical Corp., 100 Sixth Ave., New York 13, N.Y. / EQPM: Univac No. 1 with peripheral equipment / PROB: fire and casualty insurance; commercial / Ms(214) Le(1910) / *C 62

Reeves Instrument Corp., Roosevelt Field, Garden City, N.Y. / - / - / Ls(1690) Me(1946) / *C 62

Republic Aviation Corp., Missile Systems Division 223 Jericho Turnpike, Mineola, L.I., N.Y. / EQPM: extensive, 200 amplifier analog, computer facility with associated nonlinear equipment available for rental / PROB: facility suitably interconnected for independent small problem solutions or a large simulation. Engineering specialists experienced in large scale guidance and control simulations and other dynamic studies can be retained / Ms(250) Se(1952) / *C 61

Saab Aircraft Co., Bureau for Numerical Analysis and Engineering Data Processing, Linkoping, Sweden / EQPM: SARA digital computer / PROB: analysis, programming and machine time services in the fields of science, engineering and data processing / Ls(550) Me(1949) / *C 61

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N.Y. (and offices in 70 cities) / EQPM: IBM 650, 1401, 7070, 709, 7090, data plotting, MICR sorter-reader and unit record equipment / PROB: data processing, programming, systems analysis, and machine services on a contractual basis for business and scientific problems. Equipment available on an hourly basis / Ls(1600) Me(1932) / *C 61
Computing Services

Southwestern Computing Service, Inc., 910 So. Boston, Tulsa 19, Okla. / EQPM: one Alvac III and one IBM 604 / PROB: process design, heat exchange, inventory control, etc. / Ss(10) Se (1953) / *c 61

Space Services Division, Division of Statistical Tabulating Corp., 104 South Michigan Ave., Chicago 3, Ill. / EQPM: Support Programs for Aerospace Components and Equipment, Logistics, technical writing, provisioning parts breakdown, illustrated parts breakdown, spares documentation; provisioning conferences counseling / PROB: professional counseling for business, science, and government in the economic evaluation and application of computer systems for management information and control / Intimate knowledge of both logistic support specifications (government or manufacturer) and data processing techniques / Ls(5000) Me (1933) / *c 62

Space Technology Laboratories, Inc., 2400 E. El Segundo Blvd., El Segundo, Calif. / EQPM: two IBM 7090's and related peripheral equipment plus a special purpose Data Reduction Center and Analog Computation Center / PROB: systems engineering and technical direction of the U.S.A.F. Ballistic Missile Program and related space probe projects / Ls(4400) Se (1964) / *c 61

Statistical Tabulating Corp., 104 South Michigan Ave., Chicago 3, Ill. / EQPM: 14 data processing and computer centers, nationwide, containing IBM 1400 — series card tape systems plus peripheral equipment and conventional punch card tabulating data processing machines / PROB: administrative management, scientific management, engineering and general data processing, programming, systems, analysis, and consultation. Divisions: Data Processing; TASK FORCE; Computer Advisors to Management; Space Services / Ls(5000) Se (1933) / *c 62

System Development Corp., 2500 Colorado Ave., Santa Monica, Calif. / EQPM: IBM 7090; Philco S-2000; CDC 1604; An/FSQ-7 (SAGE Military Computer); AN/FSQ-32; AN/FSQ-8; Philco 2400; CDC 1605; Bendix G-15; IBM 1401. / PROB: Specialize in the design and development of command, control, and management systems for military, governmental, scientific, and educational applications / Ls(4000) Se (1957) / *c 62

Task Force, Division of Statistical Tabulating Corp., 104 South Michigan Ave., Chicago 3, Ill. / EQPM: organizational problem-solving with one or more temporary office personnel in various skill families (data processing and computer operators, programmers, and supervisors; executive and technical; typing and stenographic; bookkeeping and office machines; clerical) for conversions, peak loads, unusual situations, second shift operations, etc. / PROB: administrative management, scientific management, engineering and general data processing, programming, systems, analysis, and consultation / Ls(5000) Se (1933) / *c 62


Telecomputing Services, Inc., 9949 Reseda Blvd., Northridge, Calif. / EQPM: IBM 650, IBM 1401, and IBM 704 computing systems, and peripheral equipment / PROB: data reduction; engineering problems; business data processing; accounts receivable and payable; labor distribution; payroll; inventory control; production scheduling; etc. / Ms (2250) Me (1947) / *c 62

Thompson Ramo Wooldridge, Inc., 8333 Fallbrook Ave., Canoga Park, Calif. / EQPM: RW-300 digital control computer, a transistorized computer specifically designed for industrial process control. Television Automatic Sequence Control (TASCON), a digital device for control of television programming and switching. RW-400 "Poly-morphic" data processing system. AN/UYK-1, "stored-logic" multiple purpose computer / PROB: all problems requiring a high degree of man-machine interaction; industrial process control; television switching control; traffic control; inventory control, etc., and problems requiring the capabilities of a multiple-purpose computer / Ls(27,000) Le (1901) / *c 61

Traffic Research Corporation, a Div. of KCS Limited, 20 Spadina Road, Toronto 4, Ontario (also Montreal and New York) / EQPM: IBM 7070, 6 tapes and ancillary equipment / PROB: Traffic research; data processing; scientific calculations, linear programming; simulation; etc., for business, industry and government / Ms (75) Se (1954) *c 61


U.S. Army, Computing Laboratory, Ballistic Research Laboratories, Aberdeen Proving Ground, Md. / EQPM: large-scale, high-speed digital computers; EDVAC (Electronic Discrete Variable Automatic Computer), ORDVAC (Ordnance Variable Automatic Computer), BRL/MSC (BRL/Electronic Scientific Computer), and data reduction equipment / PROB: U.S. Army problems in ballistics, scientific computations / Ms (100) Me (1940) / *c 62

U.S. Dept. of Commerce, Bureau of the Census, Washington 25, D.C. / EQPM: Univac I (2); Univac 1105 (2); Unitorp (2); Remington Rand Buffered High-Speed Printers (2); Card-To-Tape Converter (Remington Rand); FOSDIC (5); IBM 1401 / PROB: statistical data processing: monthly, quarterly, annual surveys; periodic population, industry and trade censuses; service activities for other government agencies / Ms (130) Se (1951) / *c 62

U.S. Naval Weapons Laboratory, Computation and Analysis Lab., Dahlgren, Va. / Mathematical analysis and research, programming, engineering, computing, and data processing services for government and government contractors only; operate NOBC and IBM 7090 computers, Universal Data Transcriber and a variety of auxiliary equipment / Ms (350) Me (1946) / *c 62

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COMPUTERS and AUTOMATION for June, 1962
Computing Services

U.S. Navy, Aviation Supply Office, Data Processing Division, 700 Robbins Ave., Philadelphia, Pa. / EQPM: two 705's Model III; two 1410's on order, Aug. 1962; five 1401's 4 & 5K; one 1405, 109 Electric Accounting Machines, including transceivers / PROB: inventory control, 400,000 stock numbers of Naval Aviation material; Financial Control Reports; cataloging / Ms(250) Me(1941) / *c 62

U.S. Navy, Computer & Analysis Lab., Naval Weapons Lab., Dahlgren, Va. / EQPM: NORC (Naval Ordnance Research Calculator); IBM 7090 systems; Universal data transcriber; IBM 1401 systems; plus auxiliary equipment / PROB: orbits of earth satellites and space vehicles; trajectories of all types of weapons; computer war-gaming; general scientific and engineering problems / Ms(350) Me(1946) / *c 62

U.S. Navy, David Taylor Model Basin, Applied Mathematics Laboratory, Washington 7, D.C. / EQPM: 2 UNIVAC I systems, LARC with 3,000,000 word drum storage and 20,000 word core storage, IBM 7090 with 32,000 word core storage, SC 4020 high-speed microfilm printer plotter, IBM 1401 with 4,000 word storage, EECO Computer Data Format Translator / PROB: principal computing facility for Navy's Bureau of Ships, with problems ranging from mathematical types arising in structural mechanics, hydromechanics, and nuclear reactor design, to logistics and inventory control / Ms Se(1952) / *c 62

Univac Service Centers, Remington Rand Univac Div. Sperry Rand Corp., 315 Park Ave. So., New York 10, N.Y., and 40 Univac Service Centers in large cities / EQPM: whole range of Remington Rand equipment; punched cards, Univac 60, Univac 120, Univac File Computer, solid state 80/90 with tapes, Univac I, II, Univac Scientific, Univac III, Univac Scientific 1103, 1105, 1107 / PROB: all punched card data processing applications; all paper tape and magnetic tape data processing applications; all scientific applications / Ls Le / *c 62

Vought Aeronautics, a division of Chance Vought Corp., Box 5907, Dallas 22, Tex. / EQPM: IBM 704 digital computer and 560 amplifier analog facility, with auxiliary equipment; Packard-Bell 250 digital computer soon to be installed to tie in to analog facility / PROB: aerodynamics, controls, numerical control for machine tools, electrical load flow, flutter analysis, weight accounting, heat transfer, navigational computations, celestial mechanics, manufacturing control, personnel time accounting, and other scientific and accounting applications / Ms(522) Me(1949) / *c 61

Vought Electronics, P.O. Box 1550, Arlington, Tex. / EQPM: IBM 650, 704 / PROB: any / Ls(600) Se(1959) / G 60

Westgate Laboratory, Inc., P.O. Box 63, Yellow Springs, Ohio / EQPM: Remington Rand Univac special purpose digital computer, Flexowriter, NCR 2300 bookkeeping machine, miscellaneous office calculating machines / PROB: cross-correlations; use of computer logic in circuit designs; research work in electronics, electro-mechanical and optical equipment / Ms(55) Se(1956) / *c 62

Westgate Laboratory, Inc., 506 S. High St., Yellow Springs, Ohio / Research, development, prototype, and small lot production in electron-ics, physics, optics and photography; simulators and missile guidance equipment, digital computing and consulting services, controls, X-Y plotters and vehicle position displays, radio receivers and transmitters, industrial instrumentation, can leak testers, airborne servo systems for cooling of electronic equipment, eye movement cameras, air traffic control instrumentation / RMCA Ms(55) Se(1956)

DIcc / *c 62


White Sands Missile Range, Flight Simulation Laboratory, Electro-Mechanical Laboratories, White Sands Missile Range, N.M. / EQPM: digital: IBM 704 with 32,000 word core memory, IBM 1401, IBM 1620, and a magnetic tape digital plotter. Analog: 8 consoles with 800 amplifiers, 90 dual product electronic multipliers, 6 Euler angle transformation computers, 70 servo multipliers, 46 square multiplier, 72 diode function generators, 13 Gaussian noise generators, one Addalink conversion system, and associated peripheral equipment / PROB: analog and digital simulation of rockets and guided missiles, real-time and hybrid simulation, data analysis, systems evaluation, and numerical analysis. Analysis and programming of scientific problems together with related computer services / Ms(100) Se(1955) / *c 62

Wolf Research & Development Corp., 462 Boylston St., Boston 16, Mass. / EQPM: Whirlwind I computer system, Bendix G-15D computer system, with two magnetic tape units, special curve tracing input device, card input equipment, off-line flexowriter and IBM 026 key punch unit / PROB: scientific, engineering, business, industrial, and military applications. Service routines. Data processing / Ms(150) Se(1959) / *c 62

END
SURVEY OF CONSULTING SERVICES

Following is a survey of services which provide consulting in the computer field. Many of them also provide computing, and if so, additional description may be found in the "Survey of Computing Services". See also in the "Roster of Products and Services", the headings "C30. Consulting Services", and "P12A. Programming Services".

The survey form asked for:

1. Brief description of the facilities, personnel and capabilities which you have for consulting assistance in the area of computers and data processors?

2. Brief description of the types of problems that you specialize in?

3. Number of employees?

4. Year established?

5. Any remarks?

Each full entry from an organization that replied to the survey is in the form of: Name and address of consulting service / Facilities / Problems / Size and year of establishment. Other entries should be self-explanatory.

The abbreviations used include the following:

Ss - Small size, up to 50 employees;
Ms - Medium size, 50 to 500 employees;
Ls - Large size, over 500 employees (number in parentheses is number of employees);
Se - established a short time ago, 1951 or later;
Me - established a medium time ago, 1931 to 1950;
Le - established for a long time, 1930 or earlier (number in parentheses is year establishment);
k2 - See the "Roster of Organizations";
°C - "Checked" by the organization; "62" means "in 1962", etc.

All additions, corrections, and comments will be welcome.

Charles W. Adams Associates, Inc., 142 The Great Road, Bedford, Mass.; 971 S. Los Angeles St., Anaheim, Calif. / Personnel with varied backgrounds and experience in scientific and business data processing, programming, man-machine communications, and development of large-scale utility systems / Feasibility studies; applications of computers to scientific and business problems; technical data handling; design of computer systems to process information from multiple locations; PERT and other management control systems / Ss(30) Se(1959) / °C 62

ADB Institutet, Chalmers University of Technology - k2

Advanced Information Systems Co. (AIS), 3002 Midvale Ave., Los Angeles 34, Calif. / System design, program management and execution, research covering all aspects of data processing with special emphasis on business-type applications, information retrieval, and pioneer computer-based control systems for a wide range of clients / Service to client on use of products and procedures / - k2 / °C 61

Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass. / Research and development services in all phases of the physical sciences including applied mathematics, geophysics, biophysics, materials, physics, electronics, systems engineering, and weapons systems analysis / Technical problems in government and industry / - k2 / °C 61

The American University - EDPL - k2

Aries Corporation, 7722 Morgan Ave., S., Minneapolis 23, Minn.; Washington D.C. office, Fairfax Dr., North Kenmore, Arlington 1, Va. / Programming services, including automatic programming aids, compilers, assembly systems, applications programming and programming research. Programmers are experienced in all phases of programming and softwares preparation, and provide this specialized form of programming service to computer manufacturers and users who prefer not to temporarily staff in this area, or as an additional manpower pool to programming staffs during overload periods. Applications engineering, system synthesis, analysis and evaluation. Computer analysts provide technical link between computer users and hardware or equipment aspects of digital computer systems. Operations analysis, mathematical and statistical support services. Operations Analysis Group for the purpose of applying analytical techniques to the solution of a broad spectrum of problems, both in the military and industrial fields / Programming, applications engineering, operation analysis. Consulting services to industry and government on any problem in these three general areas.
Consulting Services

consistent with limitations imposed by the number of personnel available / Ss(10) Se(1962) / °C 62

Arkay Engineering, Inc. - k2

Asbjorn Habberstad, A/S - k2

Automation Engineers - k2

Automation Management, Inc., 25 Brigham St., Westphalia, Mass. / Office and factory facilities and engineering personnel available to carry a project from the original idea through to installation and training of personnel in integrated office systems / Management control problems of all types involving the use of industrial engineering, operations research, as well as data processing and computer skills / Ss(3) Se(1955) / °C 61

Beckman/ Berkeley, 2200 Wright Ave., Richmond, Calif. / 50 Amplifier General Purpose Analog Computer / Simulation of electrical, mechanical, thermal, etc. systems, general analog computation, research into applications of analog computation equipment / Ss(5) Se(1956) / °C 62

Cherno-log Corp., 2583 West Chester Pike, Broomall, Pa. / - / Process control applications and systems: real-time computer control for both industrial and military applications; technical writing services / Ss(10) Se(1956) / °C 62

Circuit Engineering - k2

Circuit Engineering, Inc., 135 So. La Salle St., Chicago 3, Ill. Also offices in Washington D.C., New York, Detroit, Cleveland, Los Angeles, San Francisco / Management consultants / Technical services in electronic and automatic data processing for totally integrated management controls systems for industry, commerce, government and institutions. Used by top management in evaluating, planning, designing and implementing data processing systems for business and scientific purposes / Ms Le(1914) / °C 62

C-E-I-R, Inc. - k2

C G Electronics Corp. - k2

Computer Advisors to Management, Division of Statistical Tabulating Corp., 104 South Michigan Ave., Chicago 3, Ill. / Professional counseling for business, science, and government in the economic evaluation and application of computer systems for management information and control / Administrative management, scientific management, engineering and general data processing, programming, systems, analysis, and consultation / Ms(5000) Ms(1933) / °C 62

Computer Associates, Inc. - k2

Computer Operations, Inc., 600 Old Country Rd., Garden City, L.I., N.Y. / Programming Services and Systems Engineering / Computer programming, systems analysis, system design, logical design, mathematical analysis, commercial and engineering computation and data processing (equipment available IBM 650, 7090) / - k2 / °C 61

Computer Sciences Corp., Malaga Cove Plaza, Palos Verdes, Calif. (General Offices); 660 Madison Ave., New York 21, N. Y. (New York Division) /
Complete computing services; small to large-scale computers available. Data processing (both commercial and scientific). Consulting; including analysis, programming, training, machine processing, feasibility studies, systems programming; 1107 computer and associated equipment in Los Angeles / Ms (35) Se (1959) / °C 62

Consulting Services Division, Elliott Bros., London Ltd., Horshamwood, Herts., England / System planners, problem analysts, programmers (half of 25 degree standard) plus supporting engineers, machine and punch operators, clerical, etc. Four computers available and ancillary equipment / Engineering design calculations; market survey analyses; project planning (PERT/PEP etc.); production optimisation problems; network flow problems; network flow programs / Ms (75) Se (1954) / °C 62

Computer Systems Consultants - k2
Control Technology, Inc. - k2
Daniol, Mann, Johnson & Mendenhall - k2
Dataman Associates - k2

Data Processing, Inc., 1334 Main St., Waltham 54, Mass. / Professionals with background experience in computer applications and related fields. Access on a commercial basis to a number of computers / Consulting, analyzing, and programming services for digital computer applications. Particular capability in advanced logical applications, compilers, artificial intelligence, etc. / Ss (16) Se (1957) / °C 61

Delta Data Corp. - k2
Designers for Industry, an Operation of Booz-Allen Applied Research, Inc., 4241 Fulton Pkwy, Cleveland 9, Ohio / Research and development services including data processing, systems analyses, system management, reliability studies, equipment selection, development and fabrication of special purpose electronic and electro-mechanical equipment / - k2 / °C 62

The Diebold Group, Inc., 40 Wall St., New York 5, N.Y. / A world-wide group of specialized management service companies combined to provide a full range of integrated services / Management consulting, specializing in information systems, automation, automatic data processing, and such related fields as numerical machine tool control, data communication, and data handling / Ms (150) Se (1954) / °C 61

Arnold I. Dumey, 29 Barberry Lane, Roslyn Heights, N.Y. / Consultant on problems of handling large amounts of data by electromechanical or electronic means / Design and application of computers; circulation problems of publishers of periodicals; statistical questions / Se (1954) / °C 62

Dynametech Corporation, 17 Tudor St., Cambridge 39, Mass. / Access to: IBM 7090, 1401; Philco Transac; RCA 301; Philbrick Analog. Small staff of computer programmers, mostly mechanical engineering oriented / Mechanical engineering and electrical engineering with associated sciences / Ms (90) Se (1957) / °C 62

Ebasco Services Incorporated - k2
Electronic Business Services, 3266 Hunts Point Rd., Bellevue, Wash. / Consultation services in automation and data processing, particularly for operators of small and moderate size businesses having problems in data processing, automation, etc. / - k2 / °C 61

Fair, Isaac & Co., Inc. - k2
Ferranti-Packard Electric Ltd., Electronics Div. - k2

The Franklin Institute Computing Center, 20th & The Parkway, Philadelphia 3, Pa. / Modified Univac I data processing system with associated ancillary equipment including card-to-tape, tape-to-card, low-speed and high-speed printers, unitypers and keypunch. Personnel includes programmers, statisticians, operators, maintenance, unitypers and keypunch operators / Business data processing; scientific and engineering computations; large scale inventory control problems; man-machine simulations; photogrammetric problems / Ss (23) Se (1957) / °C 62

Gannett Fleming Corddry and Carpenter, Inc. - k2
H. S. Geilman & Company Limited, 401 University Ave., Toronto 2, Ontario, Canada / Systems Consultants / Consulting services, specializing in automatic data processing and operations research / - k2 / °C 61

General Kinetics Inc., 2611 Shirlington Rd., Arlington 6, Va. / Computer input devices on hand; access to customer or rental computers / Programming services for all general purpose computers; recommendation, design, and construction of automatic programming and automatic checking systems to fit specific needs; mathematical studies; numerical analysis; data reduction; information retrieval / Ss Se (1955) / °C 62

General Electric Co., Computer Dept. - k2
GPS Instrument Co., Inc., 180 Needham St., Newton, Mass. / Computer center staffed by expert electronics engineers and mathematician physicist. Analog computing equipment available from own manufacturing center / Nearly any problem expressible by differential or algebraic equations. Iterative capabilities available for multiple variable problems / Ss Se (1955) / °C 62

Herbert Halbrecht Associates, Inc. - k2
Hammer Business Service - k2
Edward Bernard Healy, Jr. - k2
S. Himmelstein & Co., 330 W. Peterson Ave., Chicago 45, Ill. / Consulting/engineering services concerning magnetic storage systems, punched tape systems, photoelectric readers, high-speed printers, computer peripheral equipments; data acquisition, storage and processing systems engineering / - k2 / °C 62

Hollanders Associates, P. O. Box 2276, Fullerton, Calif. / Experienced engineers recognized for their contributions in the computer field supplemented by an alert and creative supporting staff / Evaluation and design of computer systems and their component units. Unique objective evaluation procedure clearly demonstrates relative advantages of alternate approaches / Ss (5) Se (1961) / °C 62

The I. D. R. Co. (Industrial Data Reduction), 4740 Spruce St., Philadelphia 39, Pa. / IBM 1401 on premises, other machines used as needed

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Consulting Services

- Full line data processing with specialty of publishing industry services / Se (1961) / tC 62

Ing. firma Nordisk ADB AB, Fack, Solna 1, Sweden. Subsidiaries: Nordisk ADB, Waerner & Co., Ramistrasse 8, Zurich; Nordisk ADB Deutsche GmbH, Bonner Strasse 117, Düsseldorf, Germany; Ibirica ADB, Torre de Madrid, Madrid 13, Spain / Specialize in civil engineering, data processing. The programming staff includes 12 civil engineers, specializing in road planning and structure. Develop large scale systems for road departments in Europe / Systems for road planning and constructions / Ss (25) Se (1959) / tC 62

Institute for Scientific Information, Inc. - k2

The ITT Data Processing Center, P. O. Box 285, Paramus, N. J. / IBM 7090 Computer (Large), 1 IBM 7070 Computer (Large), 4 IBM 1401 Computers (Medium), one 407 Tabulator, two 519 Re-producers, one 557 Interpreter, one 067 Collator, two 082 Sorters, five 065 Verifiers, four-teen 026 Key punchers, Transceiver, 250 programmers and analysts available / Business data processing, scientific computing, engineering calculations, statistical analysis, programming, systems analysis; 7090, 7070 and 1401 block time; communications - data transmittal / Ms (300) Se (1958) / tC 62

KCS Ltd. - k2

A. T. Kearney & Co. - k2

Edwin A. Lipps Engineering - k2

Loyola Laboratories - k2

Machine Computing Services, 138 South Second East, Salt Lake City II, Utah / Broker of idle time on a broad line of computer and punched card equipment, including peripheral, some security cleared. Rates quoted by job or hour. Consulting programmers, engineers, mathematicians, etc., available to help with any business or science problem / Ss (4) Se (1960) / tC 61

Management Assistance Inc. - k2

Math. Beratungsdienst, Kleppingstr. 26, Dortmund Germany / Consulting with all problems of electronic computers operations research, etc.; 12-15 consultants (mathematicians, economists, and management economists) / Application of mathematical methods in management economics, service center application of punched tape with small to medium-size firms / Ss (41) Se (1957) / tC 62

McDonnell Automation Center, Div. McDonnell Air- craft Corp. - k2

Mesa Scientific Corp. - k2

H. Jefferson Mills, Jr., Management Consultant - k2

Multnomah Data Processing Center, 450 N. W. 10th Ave., Portland, Ore. / Facilities for absorbing all sizes of computer work applications including systems design, programming, coding and operating. Engineering and scientific personnel on the staff as well large aggregate of data processing systems experience / Specialize in engineering, statistical, and management science computer applications, taking the work at any stage of development from over-all planning to operation on our computer or the customer's computer / Ss (40) Se (1956) / tC 62

National Computer Analysts, Inc. - k2

Simon M. Newman, Documentation Consultant, 2027 Que St., N. W., Washington 9, D. C. / Independent consultant, with 18 years experience in construction and integration of scientific and technical hierarchical classifications; 6 years experience in the mechanization of such systems for information retrieval, 32 years of experience with Patent Office search problems, requiring detailed and exact technical searching / Design of information retrieval systems, and recommendations for implementation by use of hardware, when economically justified / Ss (1) Se (1961) / tC 61

John K. Paden Co. - k2

James Addison Potter, Consulting Engineer - k2

Ransom Research, Inc. - k2

Scientific Computing Service Ltd., 23 Bedford Squ., London, W. C. I, England / Access to: Ferranti, Elliott, English Electric, IBM, and Cambridge University EDSAC electronic digital computers; miscellaneous electric and hand desk calculators / General consulting; computations for commerce and industry; advanced applied research; pure research; developing problems in mathematical and statistical fields to the point where they may be effectively computed, then recommending the means / Ss (16) Me (1939) / tC 61

The Service Bureau Corp., a subsidiary of IBM, 425 Park Ave., New York 22, N. Y. (Offices in 70 cities) / Consulting services / Analytical and engineering services to aid in the formulation and design of the solution to data processing problems in business, science, and engineering / - k2 / tC 61

Simulacors Corp. - k2

Soroban Engineering, Inc. - k2

Space Services Division, Division of Statistical Tabulating Corp., 104 South Michigan Ave., Chicago 3, Ill. / Support Programs for Aerospace Components and Equipment. Logistics; technical writing; provisioning parts breakdown; illustrated parts breakdown; spares documentation; provisioning conferences counseling / Administrative management, statistical, and management science computer applications, taking the work at any stage of development from over-all planning to operation on our computer or the customer's computer / Ss (40) Se (1956) / tC 62

Sterling Instrument div. of Designatronics - k2

Tabulating Service of Dallas, 1222 Ft. Worth Ave., Dallas 8, Tex. / Two 402's, two 514's, three 082's, 552, 085, 602, 046, 026, six 024's, five 056's. Computer experience in 1401 and 14070 / Payrolls, sales analysis, inventories, census, surveys, general punched card and punched tape data processing / Ss (20) Ms (1946) / tC 62

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ROBOTS — ROSTER OF ORGANIZATIONS

A significant area in the field of automatic machinery for handling information and acting in regard to it is the field of robots, mobile machines which have apparatus for sensing, for handling information, and for acting in general-purpose, controllable ways.

Environments which human beings cannot enter because of heat, cold, pressure, radiation, and in which there are jobs to be done, have caused some of these robots to come into existence. Also general-purpose manipulative tasks, which need to be repeated from half a dozen times up to several hundred times, have led to the development of some of these robots.

The survey form asked for: Brief description of your robots? / Control or input? / Applications or output? / Rental and sales prices? / Any remarks? / Number of your employees? / Year established?

Although the survey inquiry was sent to a dozen organizations, only two replied, as shown below.

Additions, corrections, and suggestions are invited.

Consolidated Controls Corp., 15 Durant Ave., Bethel, Conn. / Danbury 743-6721
Robot called Unimate with hydraulically actuated arm; size 5 ft. by 4 ft. by 4 1/2 ft. high; maximum load, 25 lbs. at normal operating speed; positioning accuracy, ±0.050 inches in each dimension; memory capacity, 200 sequential commands; clamping force, up to 180 lbs. at the end of four inch fingers; hands and fingers to suit a particular job. Input is via leading the arm and hand (5 degrees of freedom) to each position and recording the position on a magnetic memory drum. Main application, performing repetitive jobs that last from a few hours to many days; can easily be taught a new job. Price, $25,000 each / 300 employees / Established 1957

Hughes Aircraft Co., Nucleonics Division, P. O. Box 2097 Fullerton, Calif.
Robots called Mobots for nuclear, underwater, and space environments, and for automation. Control input for the automatic Mobot is magnetic tape. Designed for applications in environments which are impossible, difficult, or fatiguing for human beings. Price, $25,000 to $200,000; also leasing program available.
For the first moment, the elements are seen separately. Then suddenly, insight arrives. The structure is seen as a whole. With just four straight lines it is possible to bisect all nine dots, the pencil never leaving the paper. What happened? A Flash Experience. Aha! Achphenomenon.

The courage to go outside the confines of the original pattern resulted in an optimal solution. This talent to think in new directions is a quality we look for in engineers. If you're sometimes dissatisfied with traditional concepts and look for a chance to exercise your creative impulses, send a resume to Mr. Nick B. Pagan, Manager Professional and Scientific Staffing. Expect a prompt reply.
# DESCRIPTIONS OF DIGITAL COMPUTERS

The purpose of this report is to give the characteristics of United States general-purpose digital computers currently available for sale or rent. The next edition of this report will also include digital computers produced in other countries.

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

Any additions, corrections, or comments are invited.

Abbreviations:

- **B** — binary
- **D** — decimal
- **FBD** — fast bands on memory drum
- **K** — 1000
- **KK** — 1,000,000
- **m** — millisecond, thousandth of a second
- **N** — no, none
- **O** — octal
- **P** — punch, output
- **R** — read, input
- **u** — microsecond, millionth of a second
- **V** — variable
- **Y** — yes

## 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**: 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 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.
Digital Computers

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.

Percent Good Time: good time divided by attempted-to-run time, expressed as percent.

MANUFACTURERS AND COMPUTERS INCLUDED


Autoctics Industrial Products, Operating Div. of Autonetics, a Div. of North American Aviation, Inc., 3400 E. 70 St., Long Beach 5, Calif.

Bendix Corp., Bendix Computer Div., 5630 Arbor Vitae St., Los Angeles 45, Calif.

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

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

DE-60


Control Data Corp., 8100 34th Ave., South, Minneapolis 20, Minn.

CDC-160, CDC-1604

Digital Equipment Corp., Main St., Maynard, Mass.

PDP-1, PDP-4


GE 210, GE 225

Harvey-Wells Electronics, Inc., 14 Huron Dr., Natick, Mass.

HWF-15K


Sema 2000

Honeywell Electronic Data Processing Div., 60 Walnut St., Wellesley Hills 01, Mass.

H-400, H-800

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N.Y.

IBM Ramac 305, IBM 650, 704, 705 111, 709, 1401, 1410, 1620, 7040, 7044, 7070, 7072, 7074, 7080, 7090, 7094

Librascope Div., General Precision, Inc., 808 Western Ave., Glendale 1, Calif.

Libratrol 1000, Librascope 3000, L-3060


G-7000

Monroe Calculating Machine Co., Inc., 555 Mitchell St., Orange, N.J.

Monorobot X

The National Cash Register Co., Main & K Sts., Dayton 9, Ohio

NCR 304, 310, 315, 390


PB 250


Philco 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

Ramo-Wooldridge, a Division of Thompson Ramo Wooldridge, Inc., 8433 Failing Ave., Canoga Park, Calif.

RW 400, RW AN/UYK-1

Remington Rand Division of Sperry Rand Corp., 315 Park Ave. So., New York 10, N.Y.

Univac I, II, III, 490, 1103A, 1105, 1107

Univac File Computer I, II, Univac Larc, Univac SS 80/90

Royal-McBee Corp., Westchester Ave., Port Chester, N.Y.

LGP-30, RPC 4000, RPC 9000

Scientific Data Systems, Inc., 1542 Fifteenth St., Santa Monica, Calif.

SDS-910, SDS-920

Sylvania Electronic Systems, a Division of Sylvania Electric Products, Inc., 63 Second Ave., Waltham 54, Mass.

Sylvania 9400

(See tables commencing on next page)

ADDENDUM

ASI-210 / Advanced Scientific Instruments, Inc., 5249 Hanson Court, Minneapolis, Minn. / INT CHAR: solid state; 6 alph and num bits/char; 3 alph and num char/word; fast int memory, 4-8K words of core storage, access time of 2us; ADD: 10us; MUL/N: 54us; DIV: 54us; Instructions, 41; 3 index registers; indirect addressing; autom checking by trapped interrupt; communication between computers without buffering; no air conditioning needed / INPUT AND OUTPUT: Magnetic tape units, 32; 1.5 million words/tape; 200 char/inch tape density; writing, 22,500; reading, 22,500; search, 22,500; autom check; Printer lines/min: 300; char/line: 132; editing; peripheral equip can operate independently and simultaneously, buffered communication, independent program interrupt; COST AND USE: Scientific, real-time, and business; $94,000 to $116,000; avar mon rental: $2597; 110/220 volt, single phase, 60 cycles, approx lKVA, 5' x 7'; no air cond; sub-routine, Fortran, diagnostic programs available; modular basis
## I. INTERNAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>NUMBER SYSTEM</th>
<th>MEMORY</th>
<th>TIMING</th>
<th>MACHINE PROGRAMMING</th>
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### Digital Computers

#### INTERNAL CHARACTERISTICS

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<th>NUMBER BASE</th>
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<th>Type</th>
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<th>Multiply Time</th>
<th>Divide Time</th>
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<td>200</td>
<td>1 99 Y Y</td>
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</table>

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- **Multiply, divide, floating point programmed.** Parity checking on words read from drum.
- **Words interlaced on drum.**
- **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.
- **Overflow, underflow, divide, floating point trap checks.** Multiple channel programming, sense indicator register.
- **Parity check.** 5 additional instructions optional. Immediate addressing, branch transmit.
- **Optional additional instructions:** 42. Memory parity, I/O parity, floating point trapping (overflow, underflow). Multiple channel programming -- memory protection, clock interval timer, double precision floating point.
- **Optional additional instructions:** 42. Memory and I/O parity, floating point trapping (overflow, underflow). Multiple channel programming -- memory protection, clock-interval timer, double precision floating point.
<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>NUMBER SYSTEM</th>
<th>MEMORY</th>
<th>TIMING</th>
<th>MACHINE PROGRAMMING</th>
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<tr>
<td>NCR 310</td>
<td>Y B 1 6 12</td>
<td>4K</td>
<td>6.4u</td>
<td>12.8u</td>
</tr>
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<td></td>
<td></td>
<td>core</td>
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<tr>
<td>NCR 315</td>
<td>Y D 4 1.5 3</td>
<td>2-40K</td>
<td>6u</td>
<td>36u</td>
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<tr>
<td>NCR 390</td>
<td>Y D 4 12</td>
<td>200</td>
<td>1.2m</td>
<td>11.3m</td>
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<td></td>
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<tr>
<td>PB 250</td>
<td>Y B 1 22</td>
<td>16</td>
<td>.09m</td>
<td>24u</td>
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<td></td>
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<td>delay</td>
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<tr>
<td>NAME OF COMPUTER</td>
<td>NUMBER SYSTEM</td>
<td>MEMORY</td>
<td>TIMING</td>
<td>MACHINE PROGRAMMING</td>
</tr>
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<td>------------------</td>
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<td>--------</td>
<td>---------------------</td>
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<tr>
<td></td>
<td>Solid State?</td>
<td>Number Base</td>
<td>Bits/ Digit</td>
<td>Digits/Alphabetic</td>
</tr>
<tr>
<td>PDP-1</td>
<td>Y B 3.25</td>
<td>6 18</td>
<td>4-65K core</td>
<td>2.5u</td>
</tr>
<tr>
<td></td>
<td>-- Microprogramming. Optional 16 channel sequence break, program resumes according to interrupting channel. Built-in marginal checking facilities.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDP-4</td>
<td>Y B 6 3.25</td>
<td>18</td>
<td>1-9K core</td>
<td>4.5u</td>
</tr>
<tr>
<td></td>
<td>-- Multiply and divide operations programmed. Floating point programmed. Built-in marginal voltage checking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philco 2000-210</td>
<td>Y D 6 1</td>
<td>6 8</td>
<td>4-32K core</td>
<td>3K drum</td>
</tr>
<tr>
<td></td>
<td>-- Repeat modes, asynchronous operation, automatic interrupt.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philco 2000-211</td>
<td>Y D 6 1</td>
<td>8 2</td>
<td>32K core</td>
<td>2u</td>
</tr>
<tr>
<td></td>
<td>-- Transmission checking. Repeat modes, asynchronous operation, automatic interrupt.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philco 2000-212</td>
<td>Y D 6 1</td>
<td>8 2</td>
<td>32K core</td>
<td>2u</td>
</tr>
<tr>
<td></td>
<td>-- Transmission parity checking. Four way processing, four repeat modes, automatic interrupt, asynchronous parallel memory access. Look ahead. 7 instructions may be processed simultaneously.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCA 301</td>
<td>Y B 6 1</td>
<td>V</td>
<td>10-40K core</td>
<td>7u</td>
</tr>
<tr>
<td></td>
<td>-- Multiply and divide are programmed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCA 501</td>
<td>Y D 6 1</td>
<td>12</td>
<td>16-256K core</td>
<td>15u</td>
</tr>
<tr>
<td></td>
<td>-- Indirect addressing limited to scatter and gather operations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCA 601</td>
<td>Y B 1-8</td>
<td>56</td>
<td>8-32K core</td>
<td>6u</td>
</tr>
<tr>
<td></td>
<td>-- Variable length instructions are 1/2 word, or 2 1/2 words long. Multiple program processing and memory overlap. Double precision arithmetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recomp II</td>
<td>Y B 1</td>
<td>5 40</td>
<td>16 disk</td>
<td>.95m</td>
</tr>
<tr>
<td></td>
<td>-- Echo checking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recomp III</td>
<td>Y B 1</td>
<td>8 40</td>
<td>16 disk</td>
<td>1.09m</td>
</tr>
<tr>
<td></td>
<td>-- No automatic checking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPC 4000</td>
<td>Y B</td>
<td>32</td>
<td>128 FBD</td>
<td>.5m</td>
</tr>
<tr>
<td></td>
<td>-- Instruction contains the address of the next instruction. Repeat command.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPC 9000</td>
<td>Y D</td>
<td>1 12</td>
<td>72 delay</td>
<td>.8m</td>
</tr>
<tr>
<td></td>
<td>-- Memory is nickel wire delay lines and may be expanded. Uses loops of magnetic tape as main storage (see INPUT AND OUTPUT). Single character commands and addresses.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RW400</td>
<td>Y B</td>
<td>1 26</td>
<td>9K core</td>
<td>10u</td>
</tr>
<tr>
<td></td>
<td>-- Interrupt system.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RW AN/UYK-1</td>
<td>Y B</td>
<td>1 15</td>
<td>8-32K core</td>
<td>6u</td>
</tr>
<tr>
<td>SDS-910</td>
<td>Y B 4 6</td>
<td>24</td>
<td>2-16K core</td>
<td>0u</td>
</tr>
<tr>
<td></td>
<td>-- Multiply and divide programmed. Memory parity check, input/output parity.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDS-920</td>
<td>Y B 4 6</td>
<td>24</td>
<td>4-16K core</td>
<td>0u</td>
</tr>
<tr>
<td></td>
<td>-- Has microprogrammed register. Multiply and divide programmed. Memory parity check, input/output parity.</td>
<td></td>
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</table>

Digital Computers

**INTERNAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>INTERNAL CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDP-1</td>
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</tr>
<tr>
<td>Philco 2000-210</td>
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<td>Philco 2000-211</td>
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<td>Philco 2000-212</td>
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<tr>
<td>RCA 301</td>
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<td>RCA 501</td>
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<td>RCA 601</td>
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<td>Recomp II</td>
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<td>Recomp III</td>
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<td>RPC 4000</td>
<td></td>
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<tr>
<td>RPC 9000</td>
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<tr>
<td>RW400</td>
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<tr>
<td>RW AN/UYK-1</td>
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<td>SDS-910</td>
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<td>SDS-920</td>
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**COMPUTERS and AUTOMATION for June, 1962**

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### Internal Characteristics

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>NUMBER SYSTEM</th>
<th>MEMORY</th>
<th>TIMING</th>
<th>MACHINE PROGRAMMING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bits/Digit</td>
<td>Number of Words</td>
<td>Type</td>
<td>Access Time</td>
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<tr>
<td>SEMA 2000</td>
<td>Y D 4 8 40</td>
<td>2-20K drum 8.5m</td>
<td>350u</td>
<td>.5 - 50m</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sylvania 9400</td>
<td>Y B 37</td>
<td>16-32K core 4u</td>
<td>8u</td>
<td>1 7</td>
</tr>
<tr>
<td>Univac I</td>
<td>N D 7 1 11</td>
<td>1000 delay 242u</td>
<td>525u</td>
<td>2.15m</td>
</tr>
<tr>
<td>Univac II</td>
<td>N D 7 1 12</td>
<td>2000 core 40u</td>
<td>200u</td>
<td>1.9m</td>
</tr>
<tr>
<td>Univac III</td>
<td>Y D 4 1.5 6</td>
<td>8-32K core 1.07u</td>
<td>8u</td>
<td>124u</td>
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<tr>
<td>Univac 490</td>
<td>Y B 1 6 30</td>
<td>16-32K core 1.9u</td>
<td>12u</td>
<td>84u</td>
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<tr>
<td>Univac 1103A</td>
<td>N B 1 6 36</td>
<td>4-12K core 8u</td>
<td>60u</td>
<td>410u</td>
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<tr>
<td>Univac 1105</td>
<td>N B 1 6 36</td>
<td>8-12K core 8u</td>
<td>60u</td>
<td>410u</td>
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<tr>
<td>Univac 1107</td>
<td>Y B 1 6 36</td>
<td>128 film .3u</td>
<td>115</td>
<td>1 15 Y</td>
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<tr>
<td>Univac File Computer I</td>
<td>N D 7 1 12</td>
<td>20 core .9m</td>
<td>8.6m</td>
<td>23.6m</td>
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<tr>
<td></td>
<td></td>
<td>1020 drum 3.1m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univac File Computer II</td>
<td>N D 7 1 12</td>
<td>2000 core .65u</td>
<td>3.4u</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Univac File Computer II</td>
<td>N D 7 1 12</td>
<td>2000 core .65u</td>
<td>3.4u</td>
<td></td>
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<tr>
<td>Univac Lare</td>
<td>Y D 5 2 12</td>
<td>100 core 1u</td>
<td>4u</td>
<td>8u</td>
</tr>
<tr>
<td></td>
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<td>10-97K core 4u</td>
<td>4u</td>
<td>8u</td>
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<td></td>
<td></td>
<td>6K drums 60m</td>
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<tr>
<td>Univac S0-90</td>
<td>Y D 4 1.5 10</td>
<td>200-1600 FBD 425u</td>
<td>510u</td>
<td>2.2m</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

---

**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.**

**Duplicate arithmetic and comparison circuitry, parity check.**

**Parity check, some duplicate circuits.**

**Field selection, automatic checking, interrupt, multiple word operands, scatter read, gather write, addressable clock.**

**Illegal function and millisecond timeout checks. Concurrent program operation via automatic interrupts.**

**Parity, overflow, lockout, main control checks. Interrupt feature and repeat command.**

**Parity, overflow, lockout checking. Interrupt feature and repeat command.**

**Overflow check. Index addressing cascadable, 128 loop count registers, automatic incrementation.**

**Additional 19 plugboard instructions and 63 in/out instructions. Components partially solid state.**

**"Processor" controls in/out and information transfer. 76 summary orders from computer to Processor. 60 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.**

**Parity, overflow, logical checks.**
## Digital Computers

### II. INPUT AND OUTPUT

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>MAGNETIC TAPE</th>
<th>PUNCHED CARDS</th>
<th>PAPER TAPE</th>
<th>PRINTER SPEED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Units</td>
<td>Tape Density</td>
<td>Tape Speed</td>
<td>Words/Tape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Char/Inch</td>
<td>Char/Sec</td>
<td></td>
</tr>
<tr>
<td><strong>Alwac III-E</strong></td>
<td>16</td>
<td>175</td>
<td>17.5K</td>
<td>460K</td>
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<tr>
<td><strong>Bendix G-15</strong></td>
<td>4</td>
<td>57</td>
<td>430</td>
<td>300K</td>
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<tr>
<td><strong>Bendix G-20</strong></td>
<td>144</td>
<td>1100</td>
<td>240K</td>
<td>1KK</td>
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<tr>
<td><strong>Burroughs E-103</strong></td>
<td>N</td>
<td>*</td>
<td>20R</td>
<td>*</td>
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<tr>
<td><strong>Burroughs 205</strong></td>
<td>10</td>
<td>100</td>
<td>6000</td>
<td>400K</td>
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<td>25K</td>
<td>1.3KK</td>
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<tr>
<td><strong>Burroughs B200 Series</strong></td>
<td>6</td>
<td>200-555</td>
<td>18-50K</td>
<td>1.6KK</td>
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<tr>
<td><strong>Burroughs 5000</strong></td>
<td>16</td>
<td>555</td>
<td>66K</td>
<td>2KK</td>
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<td></td>
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<td>200</td>
<td>24K</td>
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<td><strong>CDC-160</strong></td>
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<td>7K</td>
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<td><strong>CDC-1604</strong></td>
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<td><strong>BDP-19</strong></td>
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<td>556</td>
<td>62.5K</td>
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<td><strong>BE-60</strong></td>
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<td>N</td>
<td>N</td>
<td>12</td>
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<td><strong>GE 210</strong></td>
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<td>30K</td>
<td>1500R</td>
<td>500R</td>
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<tr>
<td><strong>GE 225</strong></td>
<td>64</td>
<td>15-62K</td>
<td>250P</td>
<td>1000R</td>
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</tbody>
</table>

Parity checking. Magnetic tape, card and paper-tape editing. Simultaneous read-write-compute. Plotter may be added.

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.

Magnetic tape editing, programmed print editing. High print speed refers to wholly numerical lines. Multiple read-write-compute.

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.

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.

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.

Card readers, punches, printers, MICR sorter-reader fully buffered. Ledger record processor.

Complete multiple read-write-compute buffering. Tape format compatible with IBM 72911 and 729IV units. Plotter may be added. Vertical and horizontal magnetic tape parity checking.

Multiple read-write-compute.

Analog I/O, digital XY plotter, other I/O devices available.

Print and compute simultaneously. Typewriter, plotter. Numeric keyboard.

Read-write-compute. Magnetic document sorter-reader available. Printer can print magnetically encoded characters.

Multiple read-write-compute. Magnetic document sorter-reader available. Disk file with access time of 10m.
Honeywell's newest magnetic tape units may be just your speed

Now there are four models of magnetic tape systems to choose from in Honeywell's line-up of high-speed computers. The newest addition is called the Super Density system. It might also be called Super Speed, with its transfer rate of 186,000 decimal digits per second. Other models in the line include the High Density system which has a transfer rate of 133,000 digits per second, the Standard system at 96,000 digits per second, and the Economy system at 48,000. With a speed for every need, you can select the combination of computer and magnetic tape system that will assure maximum efficiency and economy for the job you have at hand.

With the compatibility of this line of magnetic tape systems, you also have added flexibility when it comes time to expand. You can move up to higher speed units without need for reprogramming or other costly changeover operations. Tapes written at one speed can be read at other speeds on other units.
Super Density gives higher speed, takes less tape

The new Super Density magnetic tape units achieve their high data transfer rate by packing information more compactly on tape. The 777 bits-per-channel-inch density of the Super Density unit compares, for example, to the 397 bits-per-inch of the Standard unit. In addition to higher speeds, this also means that more data is recorded on a reel of tape which, in turn, means fewer reels, less tape changing.

Table talk

<table>
<thead>
<tr>
<th>Density of Data on Tape</th>
<th>Economy Tape Unit</th>
<th>Standard Tape Unit</th>
<th>High Density Tape Unit</th>
<th>Super Density Tape Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decisions per inch of tape</td>
<td>794</td>
<td>794</td>
<td>1,111</td>
<td>1,554</td>
</tr>
<tr>
<td>Pulses (bits) per channel inch</td>
<td>397</td>
<td>397</td>
<td>555</td>
<td>777</td>
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</table>

Transfer Rates

<table>
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<tr>
<th>Decimal digits per second</th>
<th>48,000</th>
<th>96,000</th>
<th>133,000</th>
<th>186,000</th>
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<tbody>
<tr>
<td>Alphanumeric characters per second</td>
<td>32,000</td>
<td>64,000</td>
<td>89,000</td>
<td>124,000</td>
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</table>

Mean Transfer Rate

<table>
<thead>
<tr>
<th>Characters per second</th>
<th>40,000</th>
<th>80,000</th>
<th>111,000</th>
<th>155,000</th>
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System Applicability

<table>
<thead>
<tr>
<th>System Applicability</th>
<th>H400</th>
<th>H400</th>
<th>H400</th>
<th>H800</th>
<th>H800</th>
<th>H1800</th>
<th>H1800</th>
</tr>
</thead>
</table>

Automatic error correction across the board

All Honeywell magnetic tape units feature Orthotronic Control, a unique method of automatically detecting and correcting errors. This technique, developed and perfected by Honeywell, minimizes the cost of maintaining accuracy and saves time otherwise required by human intervention or rerunning of programs.

Transports that treat their tape tenderly

All Honeywell tape units utilize vacuum capstans to produce and control the motion of tape past the read/write head. Vacuum is used to grip the tape to one of two counter-rotating capstans, depending on the direction of motion called for. Air pressure serves as a low-friction bearing to float the tape over the surface of the opposite capstan. The course of tape travel from reel to reel is designed in such a way that the oxide surface of the tape is untouched by any portion of the unit except the read/write head. Also, there are no pinch rollers to imbed dirt or dust into the tape or cause excessive wear. No other tape units treat their tape so gently or transport it so precisely.

Even a novice can change Honeywell tapes in seconds

Honeywell tape units and tape reels are designed for fast, safe changing. Reels are locked in place and the tape leader is threaded with the aid of vacuum. There are no openings in the reel flanges to catch fingers or foul the tape. Tapes can be changed in less than 25 seconds with a minimum of practice.

Write for more information

If you would like more information, write to Honeywell EDP Division, Wellesley Hills 81, Mass. In Canada, Honeywell Controls Limited, Vanderhoof Avenue, Toronto 17, Ontario.
### Digital Computers

#### INPUT AND OUTPUT

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>MAGNETIC TAPE</th>
<th>PUNCHING CARDS</th>
<th>PAPER TAPE</th>
<th>PRINTER SPEED</th>
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<td>No. of Units</td>
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<td>-- Typewriter input at 120 char/sec. Simultaneous read-write-compute.</td>
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<tr>
<td>-- Control panel editing. Automatic checking. Simultaneous read-write-compute. Bulk disk storage (see INTERNAL CHARACTERISTICS).</td>
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<td></td>
<td></td>
<td>100P</td>
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<tr>
<td>-- 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.</td>
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<td>7.5-2K</td>
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<td>1.5K</td>
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<td>-- Automatic checking. Magnetic tape, paper tape, and printer editing. Paper tape off-line; 650 line/min. printer off-line. Multiple read-write-compute. 1401 used for input and output at high speeds.</td>
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## Digital Computers

### INPUT AND OUTPUT

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<tr>
<th>NAME OF COMPUTER</th>
<th>MAGNETIC TAPE</th>
<th>PUNCHED CARDS</th>
<th>PAPER TAPE</th>
<th>PRINTER SPEED</th>
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<td>1.5K - 1.6KK</td>
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<td></td>
<td>7.2 - 62.5K</td>
<td>500R</td>
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|                  |自动检查。磁带，纸带，和打印机编辑。纸带脱机。600线/分，打印机在脱机。多重读写－计算。1401用于数据输入和输出，在高速。
| IBM 7074         | 40            | 200-556      | 15 - 62.5K  | 1.5K - 1.6KK | 250R       | 100P     | 600       |
|                  |               | 7.2 - 62.5K  | 500R       | 500R        | 600P       | 150      |
|                  |自动检查。磁带，纸带，和打印机编辑。纸带脱机；600线/分，打印机脱机。多重读写－计算。1401用于输入和输出，在高速。
| IBM 7080         | 40            | 200-556      | 15 - 62.5K  | 1.5K - 1.6KK | 250R       | 100P     | 600       |
|                  |               | 7.2 - 62.5K  | 500R       | 500R        | 600P       | 150      |
|                  |自动检查。磁带，纸带，和打印机编辑。纸带脱机；600线/分，打印机脱机。多重读写－计算。1401用于输入和输出，在高速。
| IBM 7090         | 80            | 100-556      | 62.5K       | 1.5K - 1.6KK | 250R       | 100P     | 600       |
|                  |               | 7.2 - 62.5K  | 500R       | 500R        | 600P       | 150      |
|                  |Card和打印编辑，面板。自动检查，完整磁带检查。多重读写－计算使用7606多路复用器和多达8个7607数据信道。
| IBM 7094         | 80            | 1333         | 170K        | 250R        | 100P       | 600       |
|                  |               | 15 - 62.5K   | 500R       | 500R        | 600P       | 150      |
|                  |Card和打印编辑，面板。同时读写－计算缓冲。文件子系统。
| Libratrol 1000   | N             | N            | 120R        | N           | 15P        |
|                  |               | N            | 120R        | N           | 605       |
|                  |No同时同时计算。
| Librascope 3000  | 1023          | 555.5        | 50K         | 200-500R    | 400R       | 300-600    |
|                  |               | 750         | 350R        | 1000        |
|                  |Simultaneous read-write－compute。Model 210 X-Y plotter, CRT display. File subsystems carry 200 million characters of disk storage each.
| Litton C-7000    | 16            | 100-200      | 41K         | 960K        | 600P       | 1000      |
|                  |               | 250R        | 400R        | 300-600     |
|                  |Tape characteristics variable with application. Block transfer or single word completely buffered.
| L-3060           | N             | 20R          | 605         |
|                  |               | 350R        | 1000        |
|                  |Capable of handling real time command and control equipment.
| Monrobot XI      | N             | 20R          | 605         |
|                  |               | 350R        | 1000        |
|                  |Up to 3 in/out devices can be attached。Typewriter。16 columns/sec。card read.
| NCR 304          | 64            | 200          | 86K         | 800R        | 600P       | 900       |
|                  |               | 30K         | 1000        | 600P        |
|                  |自动检查，卡和纸带。卡和打印编辑；卡和打印编辑。使用4台MICR排序器－读者，每台只使用一个。打印机跳过空白行的速率4050行/分。
| NCR 310          | 20            | 200          | 15-30K      | 350R        | 1000R      | 900       |
|                  |               | 350R        | 1000        | 110P        |
|                  |高速打印机（24字符/行）缓冲。自动磁带检查；磁带编辑。磁性墨文字符读器可以读750MICR文字符每分钟。

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## INPUT AND OUTPUT

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>MAGNETIC TAPE</th>
<th>PUNCHED CARDS</th>
<th>PAPER TAPE</th>
<th>PRINTER SPEED</th>
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<td>Words/Tape</td>
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Digital Computers

"Magnetic Tape" refers to a magnetic document (magnetic tape affixed to the back of printed documents) or a magnetic tape (magnetically encoded cards on a drum). Random access memory (200m access time) units allow 240 postings per minute. Up to 4 buffered NCR sorter-readers can process 750 checks per minute.

Automatic checking and editing facilities. 16 CRAM (magnetically encoded cards on a drum) random access memory (200m access time) units allow 240 postings per minute. Up to 4 buffered NCR sorter-readers can process 750 checks per minute.

Simultaneous read-write-compute. Tape units are buffered for search, read, and write. 2K units not buffered. 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.

Simultaneous read-write-compute possible. All input/output devices are buffered.

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.

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.

Data Record Files available, up to five units with 4.5KK capacity each. Data Disc files available 22-176KK capacity. Read-compute, write-compute, or read-write simultaneously.

Tapes read 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, IBM tape translator, clock, interval timer, and a data link system (communication between computers) can be added.

Data Record Files available, up to five units with 4.5KK capacity each. Data Disc files available 22-176KK capacity. Read-compute, write-compute, or read-write simultaneously.

Multiple read-write-compute.
## Digital Computers

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<th>NAME OF COMPUTER</th>
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- No buffering. Magnetic tape search speed is 11K char/sec. Tape reads in both directions.
- 1 word buffer. Additional input/output built to customer specifications.
- No simultaneous paper tape-compute.
- Loops of tape serve as external data memory for the computer.
- Modular construction permits addition of many in/out devices and display systems. Multiple read-write-compute. Inter-module communication.
- Specifications not received.
- Parallel (by word) input/output commands. Optional 2nd input/output buffer. Optional levels of priority to 1024 levels.
- See SDS-910.
- SIM configuration permits programmable typewriter, adding machine, telephone, cash register, direct keyboard inputs and printed hard copy, punched paper tape and vocal readouts.
- Multiple read-write-compute. Real-time channel with priority program interrupt and with an in/out rate of 250K characters/sec. Random access file may be attached. Magnetic tape has scatter read-write. 4 independent in/out processors with 64 devices each, available.
- Card and paper tape equipment is off-line via magnetic tape. Simultaneous read-write-compute. Typewriter. Automatic magnetic tape re-read check.
- Programmed editing. Multiple read-write-compute. Card punching printer may be used.
- Card plugboard editing. Automatic card checking. 2 input-output registers. Tape reads in both directions. Typewriter.
### Digital Computers

#### INPUT AND OUTPUT

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<th>MAGNETIC TAPE</th>
<th>PUNCHED CARDS</th>
<th>PAPER TAPE</th>
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<td>Cards/Min</td>
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<td>No. of Units</td>
<td>Char/Inch</td>
<td>Char/Sec</td>
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### III. COST AND USE

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<th>Average Monthly Rental</th>
<th>Monthly Rental Range</th>
<th>One-Sum Price Range</th>
<th>Power</th>
<th>Floor Space -- Sq. Ft.</th>
<th>Air Cond. -- Tons</th>
<th>Percent Good Time</th>
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*COMPUTERS and AUTOMATION for June, 1962*
Digital Computers

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<th>Monthly Rental Range</th>
<th>One-Sum Price Range</th>
<th>Power</th>
<th>Floor Space -- Sq. Ft.</th>
<th>Air Cond</th>
<th>Percent Good Time</th>
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COMPUTERS and AUTOMATION for June, 1962
### COST and USE

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<tr>
<th>NAME OF COMPUTER</th>
<th>Average Monthly Rental</th>
<th>Monthly Cost Range</th>
<th>One-Sum Price Range</th>
<th>Power</th>
<th>Floor Space -- Sq. Ft.</th>
<th>Air Cond -- Tons</th>
<th>Percent Good Time</th>
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**Digital Computers**

COMPUTERS and AUTOMATION for June, 1962
<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>Average Monthly Rental</th>
<th>Monthly Rental Range</th>
<th>One-Sum Price Range</th>
<th>Power</th>
<th>Floor Space -- Sq. Ft.</th>
<th>Air Cond. -- Tons</th>
<th>Percent Good Time</th>
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<td>52KVA</td>
<td>1850</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Univac II</td>
<td>$22,500</td>
<td>$15,000-$30,000</td>
<td>$720,000-$1,440,000</td>
<td>52KVA</td>
<td>1850</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Univac 490</td>
<td>$25,000</td>
<td>$18,000 and up</td>
<td>$810,000 and up</td>
<td>61KVA</td>
<td>196</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Univac 1103A</td>
<td>$35,000</td>
<td>$21,500-$45,000</td>
<td>$922,000-$1,900,000</td>
<td>82KVA</td>
<td>1800</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Univac 1105</td>
<td>$43,000</td>
<td>$33,000-$55,000</td>
<td>$1,612,000-$2,700,000</td>
<td>175KVA</td>
<td>3100</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>
Digital Computers

### COST AND USE

<table>
<thead>
<tr>
<th>NAME OF COMPUTER</th>
<th>Average Monthly Rental</th>
<th>Monthly Rental Range</th>
<th>One-Sum Price Range</th>
<th>Power</th>
<th>Floor Space -- Sq. Ft.</th>
<th>Air Cond -- Tons</th>
<th>Percent Good Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Univac 1107</td>
<td>$50,000</td>
<td>$40,000-$60,000</td>
<td>$1,800,000-$2,700,000</td>
<td>93KVA</td>
<td>1200</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-- Scientific, real-time, business. ALGOL, FORTRAN compilers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univac File Computer I</td>
<td>$15,000</td>
<td>$10,000-$21,000</td>
<td>$304,000-$1,108,000</td>
<td>75KVA</td>
<td>1400</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-- Scientific, real-time, business. FLAP assembly system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univac File Computer II</td>
<td>SEE Univac File Computer I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univac Larc</td>
<td>$135,000</td>
<td>$135,000 and up</td>
<td>$7,000,000 and up</td>
<td>350KVA</td>
<td>3000</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-- Scientific, business, real-time. Second computer unit can be added. SAL assembly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univac SS 60/90</td>
<td>$8,000</td>
<td>$0,000-$21,000</td>
<td>$304,000-$1,108,000</td>
<td>15KVA</td>
<td>800</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-- Scientific and business. Extra units easily added. Assembly programs: COBOL, SNOB II, UNITRAIN, PROGENY compilers. STEP is a modular version of the Solid State 60/90, for users not requiring a full system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

See Addendum on page 156

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### CALENDAR OF COMING EVENTS

**June 11-July 20, 1962:** Summer Institute on Advanced Topics in the Computer Sciences, Computation Center, University of North Carolina, Chapel Hill, N. C.; contact Dr. John W. Carr, III, Computation Center, University of North Carolina, P. O. Box 929, Chapel Hill, N. C.


**July 17-18, 1962:** Rochester Conference on Data Acquisition and Processing in Medicine and Biology, University of Rochester Medical Center, Rochester, N. Y.; contact Mr. Kurt Enslein, University of Rochester, Rochester 20, N. Y.

**July 18-19, 1962:** Data Acquisition & Processing in Medicine & Biology, Whipple Auditorium, Strong Memorial Hospital, Rochester, N. Y.; contact Kurt Enslein, Brooks, Inc., 499 W. Comm. St., P. O. Box 271, E. Rochester, N. Y.

**August 9-11, 1962:** Northwest Computing Association Annual Conference, Seattle, Wash.; contact Robert Smith, Conference Director, Box 836, Seaburst, Wash.


**Sept. 3-7, 1962:** International Symp. on Information Theory, Brussels, Belgium; contact Bruce B. Barrow, Postbus 174, Den Haag, Netherlands

**Sept. 3-8, 1962:** First International Congress on Chemical Machinery, Chemical Engineering and Automation, Brno, Czechoslovakia; contact Organizing Committee for the First International Congress on Chemical Machinery, Engineering and Automation, Vystaviste 1, Brno, Czechoslovakia.


**Oct. 2-4, 1962:** National Symposium on Space Elec. & Telemetry, Fountainbleu Hotel, Miami Beach, Fla.; contact Dr. Arthur Rudolph, Army Ballistic Missile Agency, Bldg. 4488, Redstone Arsenal, Ala.


**October 15-18, 1962:** Conference on Signal Recording on Moving Magnetic Media, The Hungarian Society for Optics, Acoustics and Cinetecnics, Budapest, Hungary; contact Optikai, Akusztikai, es Filmtechnikai Egyesulet, Szabadsag ter 17, Budapest V, Hungary


**Nov. 5-7, 1962:** 11th Annual Conf. on Elec. Tech. in Medicine and Biology, Conrad Hilton Hotel, Chicago, Ill.; contact Dr. J. E. Jacobs, 624 Lincoln Ave., Evanston, Ill.


WHAT ELECTRIC BRAIN CONSTRUCTION KIT

Make over 200 Small Computing and Reasoning Machines with... BRAINIAC

WHAT COMES WITH YOUR BRAINIAC® KIT? All 33 experiments from our original kit (1955), with exact wiring templates for each one. All 13 experiments from the former TyNIC kit. 156 entirely new experiments with their solutions. Over 600 parts, as follows: 6 Multiple Switch Discs; Mounting Panel; 10 Flashlight Bulbs; 2 Multiple Socket Parts, each holding 5 bulbs; 116 Wipers, for making good electrical contact (novel design, patented, no. 2848568); 70 Jumpers, for transfer contacts; 50 feet of Insulated Wire; Flashlight Battery; Battery Box; nuts, bolts, sponge rubber washers, hard washers, screwdriver, spintite blade, etc. ALSO: 256 page book, "Brainiacs" by Edmund C. Berkeley, including chapters on: an introduction to Boolean Algebra for designing circuits; "How to go from Brainiacs and Geniacs® to Automatic Computers"; complete descriptions of 201 experiments and machines; over 160 circuit diagrams; list of references to computer literature.

This kit is an up-to-the-minute introduction to the design of arithmetical, logical, reasoning, computing, puzzle-solving, and game-playing circuits—for boys, students, schools, colleges, designers. It is simple enough for intelligent boys to assemble, and yet it is instructive even to engineers because it shows how many kinds of computing and reasoning circuits can be made from simple components. This kit is the outcome of 11 years of design and development work with small electric brains and small robots by Berkeley Enterprises, Inc. With this kit and manual you can easily make over 200 small electric brain machines that display intelligent behavior and teach understanding first-hand. Each one runs on one flashlight battery; all connections with nuts and bolts; no soldering required. (Returnable for full refund if not satisfactory.)... Price $18.95.

WHAT CAN YOU MAKE WITH A BRAINIAC KIT?

LOGIC MACHINES

Syllogism Prover
James McCarty's Logic Machine
AND, OR, NOT, OR ELSE, IF, THEN, IF AND ONLY IF, NEITHER... NOR Machines
A Simple Kalin-Burkhart Logical Truth Calculator
The Magazine Editor's Argument
The Rule About Semicolons and Commas
The Farnsworth Car Pool

GAME-PLAYING MACHINES

Tit-Tat-Toe
Black Match
Nim
Sundorra 21
Frank McCchesney's Wheeled Bandit

COMPUTERS— to add, subtract, multiply, divide, ..., using decimal or binary numbers.
— to convert from decimal to other scales of notation and vice versa, etc.
Operating with Infinity
Adding Indefinite Quantities
Factoring Any Number from 45 to 60
Prime Number Indicator for Numbers 1 to 100
Thirty Days Hath September
Three Day Weekend for Christmas
Calendar Good for Forty Years 1950 to 1989
Money Changing Machine
Four by Four Magic Square
Character of Roots of a Quadratic
Ten Basic Formulas of Integration

PUZZLE-SOLVING MACHINES

The Missionaries and the Cannibals
The Daisy Petal Machine
Calvin's Eenie Meenie Minie Moe Machine
The Cider Pouring Problem
The Mysterious Multiples of 76923, of 369, etc.
Bruce Campbell's Will
The Fox, Hen, Corn, and Hired Man
The Uranium Shipment and the Space Pirates
General Alarm at the Fortress of Dreadeerie
The Two Suspicious Husbands at Great North Bay

CRYPTOGRAPHIC MACHINES

Secret Coder
Secret Decoder
Lock with 65,000 Combinations
Lock with 15,000,000 Combinations
The General Combination Lock
Leonard's Two-Way Coding Machine

AND MANY MORE

The Submarine Rescue Chamber Squalux
The Three Monkeys who Spurned Evil
Signals on the Mango Blossom Special
The Automatic Elevator in Hoboken
Timothy's Mink Traps
Josephine's Man Trap
Douglas Macdonald's Will
Word Puzzle with TRICK

QUIZ MACHINES

The Waxing and the Waning Moon
Intelligence Test
Guessing Helen's Age
Geography Quiz
Mr. Hardstone's Grammar Test
Solving Right Triangles

SIGNALING MACHINES

The Jiminy Soap Advertising Sign
The Sign that Spells Alice
Jim's and Ed's Intercom

CRYPTOGRAPHEic MACHINES

Secret Coder
Secret Decoder
Lock with 65,000 Combinations
Lock with 15,000,000 Combinations
The General Combination Lock
Leonard's Two-Way Coding Machine

MAIL THIS REQUEST or a copy of it

Berkeley Enterprises, Inc.

Please send me BRAINIAC KIT K18, including manual, instructions, over 600 parts, templates, circuit diagrams, etc.

I enclose $18.95 for the kit plus ............ for handling and shipping (30c, east of Mississippi; 40c, west of Mississippi; $1.30, outside U.S.). I understand the kit is returnable in seven days for full refund if not satisfactory (if in good condition).

My name and address are attached.
SURVEY OF COMMERCIAL ANALOG COMPUTERS

Neil Macdonald
Assistant Editor
Computers and Automation

Following is a survey of commercial analog 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, corrections, or comments for publishing in an early issue of "Computers and Automation".

Nearly all the abbreviations used in these summaries are like those used in a telephone book—contractions of words of such a kind that the words can be easily guessed, especially if the reader refers to the survey form summarized. "ac" means "checked by the organization"; "62" means "in 1962", etc.

REPLY FORM (may be copied on any sheet of paper)
1. Name of Analog Computer:
2. Typical field(s) of application: ( )Scientific
( )Business ( )Real-time ( )Not real-time
( )Other (please describe)
3. Accuracy of numerical information the machine will take in and put out, in number of significant figures: ( )2 ( )3 ( )4 ( )5 ( )other (please describe)
4. Number of physical variables that the machine can store at one time:
5. Number of units in the computer for performing mathematical operations (OK to give maximum in largest existing installation): a. Adders:
b. Multipliers:
c. Integrators:
d. Arbitrary functions:
e. Branching operations:
f. Other (please explain)
b. Typical amount of time needed to change from one program to another:
7. Input-Output: a method of giving information or problems to the machine:
b. Typical operating percent (good time divided by attempted-to-run time):
   b. Monthly rental: between $____ and $____
10. Sales: a: Number sold or rented:_____
   b. Number on order:_____
11. Any remarks:

This data supplied by:________ Date________
Organization________ Address________

When filled in, please send this form to COMPUTERS AND AUTOMATION, Berkeley Enterprises, Inc., 815 Washington St., Newtonville 60, Mass.

Card Programmed Diode Function Generator / for scientific problems, real-time or not / ACCUR: 4 significant figures / CAPAC: store Y = F(X) physical variables / LARGEST INSTLN: function generators, 75 / no automatic program of a new problem when the problem changes: 10 second changeover / IN-OUT: punched card / RELIAB: no automatic check; operr ratio, 99.9% / sale, $3000 to $225,000 / This is the only function generator allowing most instns to program non-linear functions as rapidly as the removable patch panel allows them to program the remainder of the computer / General Computers, Inc., 9000 W. Pico Blvd., Los Angeles 35, Calif. / q 62

CM-3 (Special Purpose) Computer / scientific, real-time / ACCUR: 3 signifig figures / CAPAC: any number / ADDERS: 10 / MULI'T: 4 / Other: 5 function generators, 4 level detectors / PRGNG CHANGEOVER: may be incorporated by switch selection / IN-OUT: analog instrumentation (in process) / RELIAB: operr ratio, 99.9% / sale, $8,000 to $15,000 / sold or rented: 11 / on order: 1 / utilizes solid state components such as magnetic amplifiers and transistors and semiconductors / Dresser Electronics, SIE Div., 10201 Westheimer Rd., Houston 42, Tex. / q 62

Desired Generation Computer / for electric power utilities automatic dispatch / ACCUR: 2 significant figures / CAPAC: store 1000 variables (actually no limit) / ADDERS: 10 / MULI'T: 4 / INTEGRATORS: 4 / ARBIT FUNCT: square, square root / PRGNG CHANGEOVER: 1 to 15 min / IN-OUT: AC-voltages / RELIAB: has automatic checking; operr ratio 99% / sale $50,000 to $500,000 / sold or rented, 17 / on order, 7 / Tied into automatic process control directly / Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 44, Pa. / q 62

DIAN 60, 120, 180, etc. / for scientific problems, real-time or not / ACCUR: 5 significant figures / CAPAC: store 200 physical variables or more / LARGEST INSTLN: 450 adders, 70 multipliers, 200 integrators, 200 to 300 branching operations, also function generators (noise generators) / automatic program of a new problem when the problem changes: time needed depends on size of problem — from a few minutes to an hour / IN-OUT: function generators, input-output tables, noise generators / RELIAB: has automatic check; operr ratio, 99% to 100% / sold or rented; prices available on specific request / Dian Laboratories, Inc., 611 Broadway, New York 10, N.Y. / q 62
Electronic Associates PACE 23IR / scientific; real-time; slower than real-time or high speed repetitive operation / ACCUR: 4 signif figures / CAPAC: store 30 variables / ADDERS: 45 / MULT: 50 / INTEGRATORS: 30 / Other: division function generators, limiters, comparators also avail / PRGM CHANGEOVER: 10 min. / IN-OUT: punched paper tape, keyboard, hand, typewriter, patch paper / RELIAB: has automatic checking; operg ratio, 95% / sale $920,000 to $1,000,000 / rental $9,100 to $50,000 / sold or rented or on order, 300 / a medium to large .01% general purpose analog computer / Electronic Associates, Inc., North Long Branch, N.J. / °C 62

Electronics Associates TR-10 / scientific; real-time or not real-time / ACCUR: 3 signif figures / CAPAC: store 8 to 12 variables / ADDERS: 12 / MULT: 9 / INTEGRATORS: 10 / ARBIT FUNC: 9 / Other: dividers, function generators, coefficient pot, function storage, comparators also avail / PRGM: no autom changeover; 20 min changeover time / IN-OUT: hand patch panel / RELIAB: has autom checkg; operg ratio, 90% / sale, $4000 to $11,000 / sold or rented, 200 / a solid state portable machine, 20 amplifiers / Electronic Associates, Inc., North Long Branch, N.J. / °C 62

Electronics Associates TR-40 / scientific; real-time or not real-time / ACCUR: 3 signif figures / CAPAC: store 30 variables / ADDERS: 12 / MULT: 9 / INTEGRATORS: 10 / ARBIT FUNC: 9 / Other: dividers, function generators, coefficient pots, function storage, comparators also avail / PRGM: no autom changeover; 20 min changeover time / IN-OUT: patch panel / RELIAB: has autom checkg; operg ratio, 90% / sale, $6,000 to $35,000 / rental, $400 to $1,750 / sold or rented, 12 / a solid state table top computer; equipped for iteration or sequential calculation; comes with mobile desk / Electronic Associates, Inc., North Long Branch, N.J. / °C 62

ESIAC / for scientific problems, not real-time and other (operates in frequency domain; used in feedback system design) / ACCUR: 2 signif figures / CAPAC: store 50 physical variables / computer is a potential field analog of a unique design / when the problem changes, time needed to change program normally 15 minutes / IN-OUT: uses direct pole-zero prgmg, plots root loci on graph paper / RELIAB: no autom changeover; 1 min. / changeover time / IN-OUT: has autom checkg; operg ratio, 90% / sale, $6,000 to $35,000 / rental, $400 to $1,750 / sold or rented, 12 / a solid state table top computer; equipped for iteration or sequential calculation; comes with mobile desk / Electronic Associates, Inc., North Long Branch, N.J. / °C 62

GPS Iterative Analog Computer / scientific, business, not real time, compressed time / ACCUR: 3 signif figures / CAPAC: depends on no. of memory units used / UNITS: 20 sample-holds; 24 electronic switches; 12 comparators / PRGM CHANGEOVER: 2 to 4 hrs / IN-OUT: magnetic tape input or output; scope or X-Y plotter readout / RELIAB: operg ratio, 95% / sale, $35,000 to $200,000 / rental, $4,500 up / sold or rented, 4 / on order, 2 / features broadband operation with one microsecond switching rate / GPS Instrument Co., Inc., 180 Needham St., Newton, Mass. / °C 62

GPS Statistical Analog Computer / scientific, business, not real time, compressed time / ACCUR: 3 signif figures / CAPAC: 50 sample-holds; 24 electronic switches; 12 comparators / PRGM CHANGEOVER: 2 to 4 hrs / IN-OUT: digital counter readout / RELIAB: operg ratio, 95% / sale, $20,000 to $200,000 / rental, $4,500 up / sold or rented, 4 / on order, 7 / broadband operation based on compressed time scale of 3,000 to 1 / GPS Instrument Co., Inc., 180 Needham St., Newton, Mass. / °C 62

Gravity Analog Computer / for scientific problems and potential field studies / ACCUR: 2 signif figures / CAPAC: store 1 variable / UNITS: optical
Besides general purpose digital and analog computers, there are special purpose computers. Examples of them are:

Travel reservations machines
Simulators
Automatic training devices
Spectroscopic analysis equipment
Process industry plant flow analyzers
Geophysical seismic readers and profile plotters
Digital differential analyzers
Automatic bookkeeping machines
Information retrieval systems
Power company network analyzers
Airborne digital computers
Flight control computers
Machine tool control systems
Automatic elevator control systems
Remote control telemetering systems
Telemetered data reduction systems
Automatic graph readers
Air traffic control computers
Early warning analysis and response systems
Fire control computers
Automobile traffic light controllers
Automatic railway traffic controllers
Automatic data sampling systems
File-searching machines
Inventory machines
Automatic navigating systems
Character reading and recognizing systems
Telephone message accounting systems
Test scoring machines
Programmable electric typewriters

Following is a roster of organizations making special purpose computers and a description of their computers. The responses are reported in relation to the following reply form.

SURVEY OF SPECIAL PURPOSE COMPUTERS and DATA PROCESSORS -- REPLY SHEET

1. Brief description of the types of special purpose computers and data processors that you currently market?

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
<th>Price Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

(attach more paper if needed)

2. In your opinion which types of these machines will become the most important, will represent the largest growth areas, for our industry in the next few years?

3. a) Do you also supply general purpose computers and data processors?
b) If so, what would be your estimate of the approximate percent of your special purpose machines produced to all your data-handling machines produced?

4. Any remarks?

5. Number of employees?

6. Year established?

Filled in by ___________________________ Title ____________ Date ____________

Organization __________________________________________
Address ________________________________________________

Any additions, corrections and comments are welcome.

Aircraft Armaments, Inc., Cockeysville, Md. / SPEC PUR: Air Traffic Control Simulator, to develop and evaluate air traffic control procedures (price dependent upon requirements); Anti-Submarine Warfare Trainer, to train anti-submarine fire control crews (price dependent upon requirements); Radar Target Simulator, to evaluate overall performance of airborne radar equipment ($30,000 to $40,000) / GEN PUR: none / Ls (805) Me (1950) / pc 62

Allegany Instrument Co., Div. of Textron Electronics, Inc., 1091 Wills Mt., Cumberland, Maryland / SPEC PUR: Type K ballistic computer, for measurement of rocket motor force and pressure parameters ($15,000-$100,000); Autocal-Automatic Transducer Calibrator, for dynamic calibration of strain gage pressure cells ($50,000-$200,000); high rate tester, for measurement of tensile and compressive properties of solid propellants; K-T error computer, for parameter resistences on strain bridge circuitry / Ms (200) Se (1952) / pc 62


COMPUTERS and AUTOMATION for June, 1962
Special Purpose Computers

Bailey Meter Co., 29901 Euclid Ave., Wickliffe, Ohio / SPEC PUR: Bailey 755 system, for automation of power plants / GEN PUR: none / $s(1500) Se(1960) / °C 61

Bendix Corp., Bendix Computer Div., 5630 Arbor Vitae St., Los Angeles 45, Calif. / SPEC PUR: simulators for pre-flight design analysis or real-time monitoring ($200,000 up); digital differential analyzers, for solutions of equations ($13,700); strategic and tactical systems, for real-time military command and control; data gathering systems, for intelligence and surveillance networks; A-B on-line testers, for launcher control and automatic checking / GEN PUR: G-15, G-20, G-21 digital computers / $s(660) Se(1952) / °C 62

Burroughs Corp., 6071 2nd Ave., Detroit 32, Mich. / SPEC PUR: E590 ledger record processor ($5,000); B270 MICRO proof-transit conversion ($10,000) / GEN PUR: yes / °C 62

Carlson Computer Co., 12411 Bethpage St., Poway, Calif. / SPEC PUR: TDA-2 analog computer, for temperature distribution, stress analysis, heat transfer, thermal conductivity, magnetic and electrostatic fields, steamline fluid flow, geophysical studies ($685) / °C 62

Clary Corp., Computer Div., 408 Junipero St., San Gabriel, Calif. / SPEC PUR: 121 digital Arithmetic Counter, for process control, test, and instrumentation ($10,000) / GEN PUR: Clary DE-60, adaptable to spec pur (sale, $20,000; rental, $525-$725 mo.) / $s(300) Me(1939) / °C 62

Computer Control Div., Inc., 513 Concord St., Framingham, Mass. / SPEC PUR: 210 digital data converter for translating data from (1) magnetic tape in Univac II excess three code, (2) paper tape in Univac II excess three code, and (3) punched cards in IBM (Hollerith) 12 level code; receives data in any of these three media and translates the data to the formats of either of the other two media. High speed stored program digital data processor for solving a wide range of scientific, engineering, and statistical problems, which cannot be economically handled by large-scale computers. DR-14 digital resolver for accurate high speed conversion from Cartesian to Polar to Cartesian coordinates. Universal tape to tape converter for converting output data into a magnetic tape with a format suitable for input to IBM 650 and 704, and Univac 1100 high-speed computers / SPEC PUR: Clary Universal Educational Computer, providing a laboratory and classroom tool for education, computation, and experimentation ($19,818 to $27,882) / GEN PUR: yes / $s(260) Se(1953) / °C 61

Computer Systems, Inc., Calver Rd., Manchester Junction, N.H. / SPEC PUR: Simulators for process control ($20,000 to $100,000). Missile range instrumentation for radar tracking ($15,000 to $250,000). Linear programmer ($10,000 to $75,000) / GEN PUR: yes / $s(150) Me(1950) / °C 61


Dian Laboratories, Inc., 611 Broadway, New York 12, N.Y. / SPEC PUR: reector simulator for study of reactor kinetics; submarine dynamics simulator and flight simulator for training of personnel; process analyzer for automatic control of plants; navigating system for automatic tracking on missiles; (prices on request) / $s(2) Se(1955) / °C 62

Dresser Electronics, SIE Div., 10201 Westheimer Rd., Houston 42, Tex. / SPEC PUR: CM-3 for closed loop process control ($8,000-$15,000); CM-5 for automatic gas compressor stations ($10,000-$18,000); solid state circuitry employing magnetic amplifiers, semi-conductor diodes and transistors / $s(650) Se(1956) / °C 62


Ferranti-Packard Electric Limited, Electronics Div., Data Systems Dept., 16 Industry St., Toronto 15, Ontario, Canada / SPEC PUR: Argus, for process control ($150,000-$450,000); FP 6000, for check sorting ($160,000 up); Gemini, for airline reservations ($500,000 to $1,500,000) / GEN PUR: FP 6000, ($160,000 up), Orion ($500,000-$2,000,000), Atlas ($4,000,000-$10,000,000) / Design and manufacture traffic control systems and large digital memory systems / $s(360) Me(1949) / °C 62

Fischer and Porter Co., Warminster, Pa. / SPEC PUR: analog-to-digital recorder, recorders motion, electronic signals, or pulses versus time ($500-$2,000); ADM Telemeter, for guidance and control ($1,000-$2,000); vehicle detector, for traffic count and signal control ($350-$600); millisecond operations rec., for sequence operations ($1,500-$3,500); traffic operation punch, for traffic controller ($600-$700) / GEN PUR: yes / $s(1300) Me(1937) / °C 62

FMA, Inc., 142 Nevada St., El Segundo, Calif. / SPEC PUR: FMA File Search for information storage and retrieval / °C 61

Ford Instrument Co., 31-10 Thomson Ave., Long Island City, N.Y. / SPEC PUR: airborne digital computer for navigation; airborne analog computer for guidance and control; fire control computer, for launching orders (Terrier, Tartar, and gun control); ground computer, for drone control; reactor control computer, for reactor control drives and indicators / £s(2,000) Le(1915) / °C 62


General Dynamics/Electronics, Information Technology Division, P. O. Box 2449, San Diego, Calif. / SPEC PUR: Custom-made digital computers for tracking, guidance, and scientific purposes / GEN PUR: none / $s(600) Se(1955) / °C 61

General Electric Co., Light Military Electronics Dept., French Rd., Utica, N.Y. / SPEC PUR: variable increment digital for missile guidance and launch; digital differential analyzer, for missile guidance; toss bomb and missile launch, for armament control; computer detector, for radar data display / All computers are for airborne military applications / $s(600) Se(1953) / °C 61

General Precision, Inc., Librascope Div., 806 Western Ave., Glendale 1, Calif. / SPEC PUR: AN-ASN-24 Airborne Navigation Computer, for aircraft navigation and space guidance; Centaur Guidance Computer, for guidance of Centaur spacecraft; C7-209 Airborne Bombing Navigation Computer, for Navy attack bombers; L-50 Airborne "Building Block" Com-

COMPUTERS and AUTOMATION for June, 1962

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Special Purpose Computers

- $17,000 and up. Gas flow computer for measuring gas flows and correcting to standard conditions ($4000). Analog-digital recorder-transmitter for automatic data sampling ($30,000 and up). BTU meter for computing BTU formula in gas measurements ($1800 and up). Remote control telemonitoring system for telemonitoring and supervisory control ($500 and up). Fractionator reflex analog computer for calculating amount of internal reflux in-distillation column ($1600). Analog computer using B-constant principle for economic dispatch of power system generation ($25,000 and up). Batch computers, analog type, systems blending liquids, solids, slurries.

- Special purpose analog computers for on-line control. Honeywell 290 general purpose industrial digital control computer for on-line data acquisition and control / °C 61

Navigation Computer Corp., Valley Forge Industrial Park, Norristown, Penn. / SPEC PUR: machine tool control systems, for tension and speed control; data translation systems, for format conversion; analog to digital converters and multiplexers; telemonitoring systems and timing generators for military use / prices on request / Ms(150) Se(1955) / °C 62

- George A. Philbrick Researches, Inc., 127 Claremont St., Boston, Mass. / SPEC PUR: General purpose electronic analog computer components put together by customers to make special purpose computers: correlation computers; simulators for missiles, jet planes, submarines, and other vehicles of all types; in-line process control equipment; simulators for nuclear power plants; Fourier analyzers; power measuring and control equipment; frost penetration computers; target simulators; computing instrumentation / GEN PUR: yes / Ms(Under 500) Me(1947) / °C 61

- Philco Corp., Government & Industrial Group, Computer Div., 3900 Welsh Rd., Willow Grove, Pa. / SPEC PUR: BASICPAC — general purpose field data computer for military use. C-3000 control computer, small scale, for use in process control systems. Military computers for use in space vehicles, aircraft, and other military purposes, including simulation, automatic training devices, information retrieval, airport and flight control, traffic control, weather systems, and supervisory control / GEN PUR: yes / Ls($24,000) Ms(1962) Corporation; 1962, computer division / °C 61


- Strand Engineering Co., P. O. Box 76, Ann Arbor, Mich., or 7300 Huron River Dr., Dexter, Mich. / SPEC PUR: digital display system for alphanumeric display ($50,000); symbol generator for character generation ($9,000); digital computer for neutron analysis; missile-borne digitizer for missile guidance system monitoring; airborne computer for navigation / GEN PUR: yes / Ms(74) Se(1955) / °C 62

END
The purpose of this list is to report types of machinery that may properly be considered varieties of automatic computing or data processing machinery.

Any comments, corrections, and proposed additions or deletions will be welcome.

Accounting-bookkeeping machines, which take in numbers through a keyboard, and print them on a ledger sheet, but are controlled by "program bars," which, according to the column in which the number belongs, cause the number to enter positively or negatively in any one of several totaling counters, which can be optionally printed or cleared.

Addressing machines, programmable, which take in names and addresses, either on metal plates or punch cards, and print the names and addresses on envelopes, wrappers, etc., and which may be controlled for selection and in other ways, by notches, punched holes, and other signals, on the plates or cards.

Air traffic control equipment (including ground control approach equipment), which takes in information about the location of aircraft in flight and gives out information or control signals for the guidance of the flight of the aircraft.

Aircraft airborne computers, for automatically controlling aircraft flight functions, programming fuel consumption, navigating, searching for targets, selecting target, and attacking.

Aircraft ground computers, for radar tracking and remote control of aircraft and anti-aircraft devices.

Analog computers, which take in numerical information in the form of measurements of physical variables, perform mathematical and logical operations, are controlled by a program, and give out numerical answers.

Analog-to-digital converters, which take in analog measurements and give out digital numbers.

Astronomical-telescope-aiming equipment, which adjusts the direction of a telescope in an observatory so that it remains pointed at the spot in the heavens which an astronomer intends to study.

Automobile traffic light controllers, that take in indications of the presence of motor cars from the operation of treadles in the pavement or in other ways, and give out signals, according to a program of response to the volume and density of traffic.

Ballistic computers, which take in data on a projectile as it is fired from a gun and make computations.

Card-to-tape converters, which take in information on punched cards, and put out corresponding or edited information on punched paper tape or on magnetic tape.

Character reading and recognizing systems, which scan a printed letter or digit, photoelectrically, optically, or magnetically, take in data about points, lines, and shapes, send the data through classifying circuits, identify characters, and activate output devices accordingly.

Color scanners, for automatic production of color separation negatives.

Correlation computers.

Data reduction systems, which take in large quantities of observed data and reduce them to small quantities of computed data.

Data sampling systems, which take in a continuous voltage or other physical variables and give out samples, perhaps once a second or perhaps a thousand times a second; this machine may be combined with an analog-to-digital converter, so that the report on the sample is digital not analog.

Desk calculating machines, including desk adding machines, which may take in numbers to be added, subtracted, multiplied, and divided, and put out results either shown in dials or printed on paper tape; such machines store one up to several numbers (but not many numbers) at one time, and may store a simple program such as automatic multiplication by controlled repeated addition and shifting.

Differential analyzers, which take in information specifying differential equations and boundary conditions, and solve the equations.

Digital computers, which take in numerical, alphabetic, and other information in the form of characters or patterns of yes-noes, etc., perform arithmetical and logical operations, are controlled by a program, and put out information in any form.

Digital-to-analog converters, which take in digital numbers and give out analog measurements.

Drafting machines, which take in information describing desired mechanical drawings and produce them to proper scale.

Early-warning systems, which detect by radar, in-
frared, or other means aircraft or missiles, distinguish friend from foe, determine flight patterns, and provide responses.

Elevator control systems, which accept calls by passengers, automatically control the movement of cars, door opening, and closing, and economize travel and power.

Error detecting and counting systems.

Facsimile copying equipment, which scans a document or picture with a phototube line by line and reproduces it by making little dots with a moving stylus or with an electric current through electrosensitive paper.

File-searching machines, which take in an abstract or a key in code, search for and find the reference alluded to, and provide a copy or other indication of the reference.

Fire control equipment, that takes in indications of targets from optical or radar perception and puts out directions of bearing and elevation for siming and time of firing for guns, according to a program that calculates motion of target, motion of the firing vehicle, properties of the air, etc.

Flight control computers — SEE Navigating and piloting systems for aircraft.

Flight simulators, which take in simulated conditions of flight in airplanes, and the actions of airplane crew members, and show the necessary results, all for purposes of training airplane crews.

Fourier analyzers, which take in complex wave forms and analyze them into constituent wave forms.

Game-playing machines, in which the machine will play a game with a human being, either a simple game such as tit-tat-toe or nim (which have been built into special machines) or a more complicated game such as checkers, chess, or billiards (which have been programmed on large automatic digital computers).

Geophysical seismic readers and profile plotters.

Graph readers, which automatically take in the positions of a graph or a curve on a sheet of paper, and give out coordinates to a computer.

Information retrieval devices — SEE File-searching machines.

Inventory machines, which store as many as ten thousand totals in an equal number of registers, and will add into, subtract from, clear, and report the contents of any called-for register.

Machine tool control equipment, which takes in a program of instructions equivalent to a blueprint, or a small size model, or the pattern of operations of an expert machinist, and controls a machine tool so that a piece of material is shaped exactly in accordance with the program.

Machine tool data processors, which sense input, compute chip loads, and automatically vary the angular velocity of the work spindle to produce a uniform chip load.

Machine tool direction centers, which control machine tools and compute their operations.

Machine tool tape producing machines, which automatically prepare machine tool control tapes from blueprint data.

Materials handling systems, which will move heavy blocks, long rods, or other pieces of material to or from stations and in or out of machines, while taking in indications furnished by the locations of previous pieces of materials, the availability of the machines, etc., all depending on the program of control. (Example: automobile engine block automatic machining system)

Maze-solving machines, which will take in descriptions of mazes or labyrinths and determine by trial and error or in other ways, the path to the goal. Missile check-out computers, for examining, scanning, and inspecting missiles and signalling warnings.

Missile-control ground computers, for radar tracking and remote control of missiles and anti-missile devices.

Missile-control missile-borne computers, for issuing properly timed and conditioned commands for the proper functioning of the missile.

Navigating and piloting systems for aircraft, ships, and submarines which take in star positions, time, radio beam signals, inertial signals, motion of the air, etc., and deliver steering directions.

Navigating systems for land-based combat vehicles.

Nuclear reactor simulators, for study and design.

Post office mail sorting systems.

Power company network analyzers, which take in analog information about the resistances, inductances, and capacitances of an electric power plant's network of electrical lines and loads, and enable the behavior of the system to be calculated.

Printing devices of high speed, which take in punched cards or magnetic tape and put out printed information at rates from 600 to 2000 characters per second.

Process controllers, pneumatic, electronic, hydraulic, etc., for handling processes, which take in indications of humidity, temperature, pressure, volume, flow, liquid level, etc., and put out signals for changing positions of valves, altering speeds of motors, turning switches on and off, etc.

Process industry advanced control systems, for handling connected or flowing materials, which will take in indications of flow, temperature, pressure, volume, liquid level, etc., and give out the settings of valves, rollers, tension arms, etc., depending on the program of control.

Process industry data processing systems, for recording, information, checking conditions, and signalling alarms.

Process industry plant flow analyzers.

Product assembly control systems, which take in semi-finished materials, position them in work stations, perform assembling operations on them, and deliver units of products to shipping stations. (Example: electronic component assembly systems.)

Punch card machines, which sort, classify, list, total, copy, print, and do many other kinds of office work.

Railway tower signalling equipment, which for example enables a large railroad terminal to schedule trains in and out every 20 seconds during rush hours with no accidents and almost no delays.
Railway centralized traffic controllers, that re-
member the locations, directions, and speed of
trains, optimize the allocation of track space
for fulfillment of scheduled train operations,
and provide signals therefor.

Random access file computers.

Remote control tele-metering systems.

Robots or general purpose manipulating machines,
which make use of remote or stored signals
from a human operator and act them out in a
special environment, such as a heavily radio-
active chamber.

Sale recorders, also called point-of-sale record-
ers, which take in amount, type, and other in-
formation about sales of goods, and produce
records in machine language, which can later
be automatically analyzed and summarized by
punch card or computing equipment.

Spectroscopic analyzers, which vaporize a small
sample of material, analyze its spectrum, and
report the presence and the relative quanti-
ties of chemical elements and compounds in it.

Strategy machines, which enable military officers
in training to play war games and test strategies,
in which electronic devices automatically
apply attrition rates to the fighting forces
being used in the game, growth rates to the
industrial potential of the two sides, etc.

Tape-to-card converters, which take in informa-
tion on punched paper tape or on magnetic tape,
and put out corresponding or edited informa-
tion on punched cards.

Target simulators, which take in a program of in-
structions for the behavior of a target and
execute them.

Teaching machines (or programmed learning ma-
chines), which take in a sequence of items of
information for giving instruction and present
them successively to a student, promptly tell-
ing him whether his answer to each item is
right or wrong; the program may be simple or
complex, branching or not branching, etc.

Telemetering transmitting and receiving devices,
which enable a weather balloon or a missile to
transmit information detected by instruments
within it as it moves; the information is re-
corded usually on magnetic tape in such fash-
ion that it can later be used for computing
purposes.

Telephone equipment including switching, which
enables a subscriber to dial another subscrib-
er and be connected automatically.

Telephone message accounting systems, which re-
cord local and long distance telephone calls,
assign them to the proper subscriber's ac-
count, and compute and print the telephone
bills.

Terrain data translators, which automatically
process information from stereographic photo-
graphs.

Test-scoring machines, which take in a test paper
completed with a pencil making electrically
conductive marks, and give out the score.

Toll-recording equipment, which records, checks,
and summarizes tolls for bridges, highways,
and turnpikes.

Training simulators, which take in simulated
conditions affecting the training of one or
more persons in a job, and their responses
under these simulated conditions, and show
the results, all for the purpose of teaching
them; see also flight simulators.

Travel reservations and inventory systems for
airlines and railroads, which record avail-
able accommodations and their sale, and an-
swer interrogations.

Typing machines, programmable, which store para-
graphs and other information, and combine them
according to instructions into correspondence,
form letters, orders, etc., stopping and wait-
ing for manual "fill-ins" if so instructed.

Vending machines, which take in various coins and
designations of choices, and then give out ap-
propriate change, coffee, soft drinks, sand-
wiches, candy, stockings, and a host of other
articles, or else allow somebody to play a
game for a certain number of plays, etc.

Weather observation recording, tele-metering, and
transmitting systems.

- END -

WHO'S WHO IN THE
COMPUTER FIELD—
CUMULATIVE EDITION,
1962

Computers and Automation will publish this sum-
er a cumulative edition of "Who's Who in the Com-
puter Field."

If you are interested in computers, please fill in
the following Who's Who entry form (which may be
printed on any piece of paper) and send it to us for
your free listing. If you have friends in the computer
field, please call their attention to sending us their
Who's Who entries. The cumulative edition will in-
clude only the entries of persons who send us their
Who's Who information.

Name? (please print)__________________________

Your Address?

Your Organization?

Its Address? __________________________________

Name? (please print)__________________________

Your Main Computer Interests?

( ) Applications ( ) Logic

( ) Business ( ) Mathematics

( ) Construction ( ) Programming

( ) Design ( ) Sales

( ) Electronics ( ) Other (specify):__________

Year of birth?______________________________

College or last school?______________________

Year entered the computer field?____________

Occupation?_______________________________

Anything else? (publications, distinctions, etc.)

When you have filled in this entry form please
send it to: Who's Who Editor, Computers and Auto-
mation, 815 Washington Street, Newtonville 60, Mass.
The purpose of this list is to report types of components of automatic machinery for computing or data processing. Any comments, corrections, and proposed additions or deletions will be welcome.

1. Storage mediums, for both internal and external storage:
- Punch cards
- Punched paper tape
- Magnetic tape
- Magnetic cards
- Paper forms imprinted with magnetic ink characters for magnetic recognition
- Paper forms recorded with special characters for optical recognition
- Paper forms marked with special pencil for electrically conductive recognition ("mark-sensing")
- Magnetic wire
- Metal plates
- Plugboards, i.e., panels of patch cords

(All these physical forms express machine language; when inserted into a machine, they give the machine information and instruction; when left in a filing cabinet, they hold information and instructions in reserve for later use. Sometimes it is the whole area of the storage medium which is used, as in the ordinary punched card. Sometimes it is only the edge which is used, as in edge-punched cards or edge-slotted metal plates.)

2. Storage mediums, internal only:
- Magnetic drums
- Magnetic tape devices
- Magnetic disc devices
- Magnetic belt devices
- Magnetic cores, arranged either one-dimensionally as in a magnetic shift register, or in two or three dimensions as a magnetic core matrix memory; they may be made of special iron alloys, iron oxide ceramics called ferrites, etc.
- Magnetic films
- Electrostatic storage tubes, in particular cathode ray storage tubes and glass-metal-honeycomb-type storage tubes.
- Delay lines, of mercury, quartz, nickel, electrical elements, etc.
- Relays, in relay registers and stepping switches
- Electronic tubes, in registers of flip-flops, counting rings, etc.
- Cryotron circuits, on-off devices operating at liquid helium temperatures
- Barium titanate crystal devices
- Switches: toggle switches and dial switches
- Buttons
- Keyboards
- Rotating shafts
- Voltages

3. Calculating and controlling devices
   a. Digital type:
      - Transistor circuits
      - Magnetic core circuits
      - Tunnel diode circuits
      - Electronic tube circuits
      - Relay, stepping switch, timing cam, and switching circuits.
      - Diode and rectifier circuits: using germanium diodes, selenium rectifiers, silicon diodes, electronic tube diodes, etc.
      - Capacitor and resistor circuits
      - Cryotron circuits
      - Packaged arithmetical and logical circuits
      - Mechanical computing elements: latches, gears, levers, ratchets, program bars, cams, etc.
   b. Analog type:
      - Integrators
      - Adders
      - Multipliers
      - Function generators
      - Resolvers: product, sine-cosine, coordinate transform
      - Synchrons
      - Automatic process controllers as such: pneumatic, electronic, hydraulic, etc.
   c. Auxiliary circuit elements:
      - Amplifiers: electronic, magnetic, etc.
      - Pulse transformers
      - Voltage regulators
      - Potentiometers

4. Input Devices
   a. Manual positions: buttons, switches, keys
Components of Automatic Computing Machinery

b. Punched holes:
Punch card readers: electric, photoelectric, mechanical
Paper tape readers: mechanical, electric, photoelectric

c. Polarized spots:
Magnetic tape readers, magnetic card readers

d. Character readers:
Optical, with photoelectric reading
Magnetic ink, with magnetic head reading
Electrically conducting pencil marks, with electric reading

e. Small spot scanners: photoelectric, electronic

f. Sensing instruments of all kinds
(The category "sensing instruments" verges into the science of instrumentation, where humidity, temperature, pressure, volume, flow, liquid level, etc., and many other physical variables can be measured and reported to a data processor in machine language.)

5. Output Devices:
Visual displays, such as lamps, dials, oscilloscope screen, etc.
Electric typewriter, or other electrically-operated office machine
Line-a-time printer, which prints a whole line of characters at once
Matrix printer, that forms each character by a pattern of dots
Automatic plotter, which will trace or plot a curve according to information delivered by the machine
Facsimile printer
Photographic recording
Paper tape punch
Magnetic tape recorder
Punch card punch
Microphones, telephones, loud speakers, alarms, etc.
Article delivery mechanisms, as in vending machines
Positioning devices, that may operate a valve, roller, tension arm, etc., resulting in control of a manufacturing operation or process, the aiming of a gun, etc.

- END -
OVER 500 AREAS OF APPLICATION OF COMPUTERS

Neil Macdonald
Assistant Editor
Computers and Automation

I. Business and Manufacturing in General

1. Office

- Accounts receivable: posting, rebilling
- Advertising effectiveness: analysis, data handling
- Billing and invoicing
- Budgeting
- Capital investment analysis
- Catalog indexing
- Charitable contributions
- Cost analysis
- Depreciation calculations
- Directory advertising calculations
- Dispatching
- Expenses: analysis, prompt reports
- File maintenance
- Filing operations, single and multiple
- Forecasting
- Information retrieval
- Inventory control
- Linear programming
- Mailing list operations
- Management games
- Management reports using the exception principle, and others
- Management simulation
- Management statistics analysis
- Management strategy analysis
- Market research: studies
- Operations research applications
- Order acknowledgment
- Order analysis
- Overhead cost allocation
- Payroll changes for general increases
- Payroll computation and payment
- Pension reporting and updating
- Performance evaluation
- Price analysis
- Property accounting
- Purchase order writing
- Production forecasting
- Questionnaire analysis
- Repair and maintenance: records, scheduling, control
- Royalty processing
- Salary advances
- Sales analysis
- Sales area distribution
- Sales quota calculations
- Savings bond deductions
- Taxes, calculation
- Transportation optimization
- 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
- Factory operation simulation
- Labor utilization: schedules, analysis
- Machine loading schedules
- Machine tools: numerical control
- Machine tools: control for automatic reproduction of complete parts
- Machine utilization analysis
- Materials and parts: requirements, allocation, scheduling, control
- Procurement
- Quality control
- Route accounting (Bakeries, Bottling plants, Dairies, etc.)
- Shop scheduling, optimum

II. Business — Specific Fields

1. Banking

- Check processing accounting
- Corporate trust accounting
- Demand deposit accounting
- Factoring accounts processing
- Fund accounting
- Installment loan accounting
- Inter-office records: transmission, filing, recall
- Loan accounting, records, and analysis
- Money orders
- Mortgage loan accounting
- Payroll accounting
- Personal trust accounting
- Real estate loan accounting
- Savings and loan postings
- Savings Club deposit accounting
- Signature verification
- Stockholder records
- Trust accounting

2. Educational and Institutional

- Hospital patient billing
- Registration, university
- Revenue and expense accounting
- Supply accounting

COMPUTERS and AUTOMATION for June, 1962
Application of Computers

3. Finance

- Amortization
- Bond evaluation
- Dividend calculation
- Equipment trust accounting
- Fund analysis
- Monthly customer statements
- Portfolio evaluation
- Stock analysis
- Stock market data transmission
- Stock price index computed hourly, etc.
- Stock tabulations
- Stock transfers

4. Government

- Appropriation accounting
- Budgetary control
- Census analysis
- Election return analysis
- Foreign policy analysis
- Income tax accounting
- Mail sorting and routing
- Motor vehicles: registration
- Parts cataloging
- Rubbish disposal planning
- Sales tax records, analysis
- Simulation of sections of the economy
- Statistical analysis
- Supplies: inventory and control
- Water and sewer rates revenue

5. Insurance

- Actuarial research
- Agency accounting
- Agents' commission calculations
- Asset share calculations
- Automobile coding
- Claims
- Commutation column calculations
- Dividend formula analysis
- Dividend scale calculations
- Gross premium calculations
- Group annuity calculations
- Group insurance commissions
- Mean reserve calculations
- Mortality tables
- Net premium calculations
- Non-forfeiture value calculations
- Policy issuance
- Policy reserve calculations
- Premium billing
- Premium and loss distribution accounting
- Renewal rating calculations
- Valuation calculations

6. Law

- Crime: analysis, prediction
- Laws: analysis, consistency studies
- Patent searching
- Traffic violations: recording, accounting, analysis

7. Libraries

- Information retrieval
- Records and control

8. Magazine Publishing

- Renewals: analysis, promotion
- Subscription fulfillment

9. Oil Industry

- Absorber calculations
- Aerial surveys and exploration: analyses
- Bulk stations: wholesale sales, billing, accounting
- Credit card accounting
- Crude oil: analysis of properties, evaluation
- Depletion accounting
- Distillation tower design
- Equilibrium flash calculation
- Flow: control
- Fuel deliveries: degree-day accounting
- Gasoline blending
- Gravimetric analysis
- Heat exchange calculations
- Heat and material balances
- Lease and well expenses and investments: records and analysis
- Map construction
- Mass spectrometer data: reduction, analysis
- Off-shore installations: studies of design variations
- Oil field analysis: correlation of data from different
  drill holes;
  correlation of data from seismic tests;
  estimated amount and direction of flow of fluids through porous rocks
- Oil purchase accounting
- Pipe stress analysis
- Plate-to-plate distillation calculations
- Refinery and gas plant components: design, operation
- Refinery shutdown and maintenance: scheduling calculations
- Refinery simulation
- Secondary recovery: analysis
- Seismic data reduction
- Well logs: corrections
- Wells and fields: prorating analysis

10. Public Utilities

- Boiler control
- Circuits and lines: mileage analysis
- Compressor performance
- Dispatch control
- Electric distribution networks
- Equipment: attrition and life expectancy
- Gas distribution networks
- Gas well probation
- Load duration
- Load flows
- Meter reading
- Natural gas measurement
- Pipe line design
- Power distribution calculations
- Power plants: stability of control
- Power production scheduling
Application of Computers

Pressure vessel flange designs: calculating, listing
Rate determination
Repair calls: dispatching, scheduling
Sag-tension studies
Steam turbines: output, control
Transformer thermal rating
Transmission line design and losses
Water reservoir management

11. Steel Industry

Billet cut-up line: control
Smelting process: blast furnace stockhouse control

12. Telephone Industry

Coin telephone: collecting, accounting
Customer payments
Local service charge billing
Message register billing
Toll ticket billing

13. Transportation

Aircraft maintenance scheduling
Air traffic control
Automatic toll registration
Bus scheduling
Cloud-height-data analyzer for airports
Collision warning systems
Crew training
Elevators: automatic control
Flight simulation
Motor freight records: analysis
Navigating systems
Parking garages: automatic control
Pilot training
Preventive maintenance scheduling
Railroad freight cars: accounting, allocation, distribution, control
Railroad inventory accounting
Rail traffic control, centralized
Satellite orbit calculations
Ship arrival forecasting
Subways: automatic control
Trains: automatic control
Travel reservations

14. Miscellaneous

Hotels: registration, reservations
Inventions and patents: filing, retrieval
Meat packaging: mixture, optimization
Television stations: real-time program switching operations
Vending machine programming

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Meat packaging: mixture, optimization
Television stations: real-time program switching operations
Vending machine programming

III. Science and Engineering

1. Aeronautics and Space Engineering

Aerodynamical formulas: evaluation
Aircraft safety: control of cargo weights and fuel supply
Airframe stress analysis
Critical speed problems
Curve fitting
Factor analysis
Flight simulation

Flight test data reduction
Flight training devices
Flutter analysis
Ground controlled approach: programming
Gyroscopic calculations
Heat transfer analysis
Helicopter piloting studies
Navigation training devices
Rocket motor propellants: analysis, control during firing
Satellite tracking
Suspension reaction for airborne stores
Systems evaluation
Theodolite data reduction
Vibration analysis
Wind tunnel data reduction

2. Biology

Animals: behavior models
Hybrid optimization
Livestock breeding analysis
Livestock feeding control
Livestock-feed ingredient-mix: optimization
Species characteristics: correlation analysis
Species varieties: automatic classification

3. Chemical Engineering and Chemistry

Chemical compounds: structure studies
Crystal structure factors
Distillation processes: determination of starting times, etc.
Equilibrium equations: studies
Flash vapor calculations
Gas line calculation
Hydrocarbons: structure analysis
Ion exchange column: performance appraisal
Mass spectrometer analysis
Organic compounds: classification
Organic compounds: file searching
Permeability, relative: computations
Process control
Process simulation
Reaction analysis
Spectrum analysis
X-ray crystallography analysis

4. Civil Engineering

Abutment design
Adjustment of level net
Area calculation by coordinates and by other methods
Azimuth determination from sun observation
Beam design
Bridge design
Concrete design, prestressed and reinforced
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
Embankment stability design
Application of Computers

Freeway assignment
Freezing and thawing of soils
Grade sheet processing
Highway profiles
Monthly equipment summary
Pavement design
Photogrammetric data reduction
Pile design
Pipe load computation
Pipe design
Pressure distribution in layered media
Ramp and interchange design and calculations
Retaining wall design
Roadway elevations
Route optimization
Slab volumes and other calculations
Soil test analysis
Steel column design
Stress analysis
Survey closure: control
Three-point problem solutions
Traffic density: pictorial simulation
Traffic light maintenance: control
Traffic simulation
Transformation of coordinates
Traverse adjustment
Traverse closure
Triangulation
Vertical alignment
Water distribution systems: analysis, optimization

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

7. Linguistics
Concordances: construction
Syntax pattern analysis
Translation from one language to another
Word frequency analysis

8. Marine Engineering
Compartment pressures in emergency situations
Compartment ventilation calculations
Force analysis of space structures
Form calculations
Fuel rate analysis
Gyroscopic-compasses sea-test: data reduction
Hydrostatic functions
Plate and angle combinations: calculations
Ship displacement calculations
Ship maneuvering calculations and control
Ship models: extrapolation of observations
Ship waterline characteristics
Shock isolator calculations
Submerged cables: calculation of transient motion
Turbine reduction gear systems: vibration analysis
Ullage tables

9. Mathematics
Boolean algebra calculations
Calculus of variations
Constants, important: evaluation
Convolution
Coordinate rotation and translation
Curve fitting
Determinant evaluation
Difference equations solution
Differential equations solution
Differentiating symbolically
Eigenvalues and eigenvectors: calculations
Fourier analysis and synthesis
Function tables: computation
Integral equations
Integration of functions
Intelligence: simulation of human thinking processes
Lagrange interpolation

6. 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

5. Electrical Engineering
Antenna design
Cathode tube design
Circuit analysis and design
Circuit assembly: control
Component design
Computer logic circuits: design by numerical control
Electromagnetic wave propagation in various media
Feedback system, single loop, finding the root locus
Filter analysis
Generator calculations
Logical networks: design
Motor calculations
Radar echoes
Radio interference
Systems evaluation
Transformer design
Transient performance
Traveling-wave-tube calculations
Triode design

4. Electrical Engineering
Difference equations solution
Differential equations solution
Differentiating symbolically
Eigenvalues and eigenvectors: calculations
Fourier analysis and synthesis
Function tables: computation
Integral equations
Integration of functions
Intelligence: simulation of human thinking processes
Lagrange interpolation

3. Electrical 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

2. Electrical 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

1. Electrical 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
Application of Computers

10. 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: horse power calculations
Conveyor geometry
Crankshaft vibration analysis
Engine and piston computations
Flange cross sections, table of properties
Foundation settling: effects
Heat flow
Heat loss of rooms and buildings
Machine vibration analysis
Moments of inertia
Pipe-stress analysis
Orifice factors: calculations
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
Torsional systems, bearing loads, and engine forces: Holzer analysis
Truss analysis: stress and deflections
Vehicle checkout calculations
Vibration analysis

11. Medicine

Anesthesia control
Ballistocardiogram analysis
Blood volume loss: calculation
Diagnosis of disease
Electrocardiogram integration and analysis
Heartbeat analysis
Medical data telemetering and analysis
Medical tests: analysis
Motor system coordination testing
Physiology of the eye: analysis

12. Metallurgy

Alloy calculations
Crystal structure computations

13. Meteorology

Weather forecasting

14. Military Engineering

Ballistic trajectories
Bomb impact analysis
Bombing tables
City evacuation studies
Fire control
Firing tables
Missiles: launching, directing, intercepting, and recovery: calculations
Pursuit and combat: analysis, control
Radar defense systems: analysis, calculations
Rocket trajectories
Strategy analysis and optimization
Trajectory calculations
Weapons control
Weapons systems analysis and evaluation

15. Naval Engineering (see also Marine Engineering)

Cavitation studies
Component attrition rate analysis
Decompression tables
Submerged flow: potential patterns

16. Nuclear Engineering

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 design and evaluation
Reactor simulators

17. Photography

Color analysis
Color separation negatives: scanner for automatic production
Lens coating calculations
Optical ray tracing
Optical system design

18. Physics

Cosmic radiation: statistical analysis
Crystallography analysis
Electron distributions
Electron trajectories
Interatomic bond lengths and angles
Shock waves analysis
Thermodynamic equations

19. Psychology

Data reduction and analysis

(Please turn to page 156)
ROSTER OF SCHOOL, COLLEGE, AND UNIVERSITY COMPUTER CENTERS

Following is a roster of school, college, and university computer centers. Much of the information is derived from a survey form returned by many organizations. This form asked for: 1. Brief description of your main purposes or mission? / 2a. Do you provide computing services commercially? / 2. Your equipment and facilities? / 3. Courses given in conjunction with your computing center? / 4. Any remarks? / 5. Number of your staff? / 6. Year established? / Filled in by: Name ____ Title ____ Organization ____ Address ____.

In the following each entry contains: Name and address / Purpose or mission / Equipment / Courses / Notes.

The abbreviations used include the following:

Activities
Ba Research and development
Ca Commercial computing and consulting services
Ga Government activity
Pa Problem-solving
Ea Education
Ma Manufacturing activity
Used also in combinations as in RCE (Research; computing and consulting service; and educational activities)

Size
Ls Large size, over 500 employees
Ms Medium size, 50 to 500 employees
Ss Small size, under 50 employees (no. in parentheses is approx. no. of employees)

When Established
Le Long established organization (1930 or earlier)
Me Organization established a "medium" time ago (1931 to 1950)
Se Organization established a short time ago (1951 or later) (no. in parentheses is year of establishment)

Interest in Computers
Dc Digital computing machinery
Ac Analog computing machinery
Ic Incidental interests in computing machinery

Information checked by the organization (C for Checking)/ 62: information furnished in 1962 / 61: information furnished in 1961 / etc.

G Information gathered, but not checked by the organization

EAM Electric punch-card accounting machine

K thousand (words or digits of core storage)

CPM cards per minute

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

The American University, Electronic Data Processing Laboratory, 1901 F. St., N.W., Washington 6, D.C. / 62

Use of computers as a management tool, for budget preparation and execution; information storage and retrieval; student classroom work / LGP-30, with Model 342 High Speed Reader Punch and Model 322 Automatic Switching Control Unit, RPC-4000 / Various courses, including training courses for the Royal McBee Corporation / CPE (Ss-0) (Se-1960) Dlc

A & M College of Texas, College Station, Tex. / 62

Instruction / IBM 1401, 709, 650, 717, 714 / 13 courses on computers and their applications / RCE (Ss-40) Le (1929) Dlc

Abilene Christian College, IBM Center, Abilene, Tex. / 62

Business office records; student and alumni records / IBM 402 and support equipment; 3 key punches, sorter, collator, summary punch / Introduction to IBM Accounting / Ea Ss (41) Se (1958) Ic

Auburn University, Computer Laboratory, 113 Brown Hall, Auburn, Ala. / 62

Faculty research; student orientation on computers; thesis work; institutional analysis and data processing in general administration / IBM 1620, 1622, 548, 519, 407, 83 / Digital Computer Programming; EDP Systems; Electronic Data Processing; Math of Computers / CPE (Ss-7) Se (1959) Dlc

Baylor University, Hankamer School of Business, Waco, Tex. / 62

Research and instruction in computer applications / (to be delivered Aug. 1962) IBM 1620, 1622, 402, sorter and key punch / Data Processing; Basic Computer Course / RCE (Ss-1) Se (1962) Ic

Boston College Mathematics Institute and Computer Center, Chestnut Hill 67, Mass. / 62

Education and research; developing programs useful for high school math teachers in conjunction with modern math programs / IBM 1620, 1622; On order: additional storage unit, high speed printer, card punch / Numerical Analysis and Statistics. Beginning Feb., 1963: Compu-
Computer Centers

Carleton Chalmers University, Computer Research Center, Bromma, Stockholm, Sweden / 62

Bucknell University, Presidents-Room Computing Center, Lewisburg, Pa. / 62
Instruction in use and applications of electronic computers / Burroughs E-101-3 digital computer, IBM 1620, PAGE TR-10, Analog Computer / Introduction for Engineering Freshmen, used within engineering classes / REa Ss (6) Se (1958) Dc

Braunschweig Technical University, Rechenzentrum und Institut für Rechenautomaten und Mathematik. Pockelsstrasse 4, Braunschweig, Germany / 62
Programming techniques for education; automatic programming and compiling techniques; simulation of analog computing methods by digital computers; combined systems; function generation and recording for analog computers by magnetic tape; dynamic programming / Electrologica-XI digital computer with 16,000 words of core storage; Shorts general purpose analog computer (2 consoles), 2 PAGE Variplotters; VIVAR bivariable function generator; four-channel pen recorder; magnetic tape equipment. ZUSE Z-22 digital computer, Ferranti input (200 char/sec) and Creed output (25 char/sec) for punched tape; IBM 407 and 163 tape-to-card punch and card-to-tape punch / Ea 67 Se Dc

Bristol College of Science and Technology, Ashley Down, Bristol, England / 62
Education / Elliott 803 digital computer; Solartron Minispool analog computers, calculating machines, relay demonstration computer / Ea 8 Se Dc

Brown University Computing Laboratory, Div. of Applied Mathematics, 190 George St., Providence, R.I. / 61
Computing service; instruction; research / IBM 650 and auxiliary equipment; IBM 7070 data processing system / REa Ss (9) Se (1960) Ic

California Institute of Technology, Pasadena, Calif. / 62
Education and research / IBM 7090; Burroughs 220 / about fifteen courses / REa Ss (30) 90 Ic

Carleton University, Colonel By Drive, Ottawa 1, Ontario, Canada / 62
Education / IBM 1620 data processing system with 20,000 decimal digits of core storage; IBM type 870 document-writing system; Friden model 1620 flexwriter / courses in computer programming and application / Ea 67 Se Ic

Case Institute of Technology, Computing Center, Cleveland 6, Ohio / 62
Scientific and engineering calculation, business data processing, student classroom work / Univac 1, card-to-card tape, high-speed printer, unityper; Burroughs 220, 4 tape drives, Cardatron input-output; auxiliary IBM punched card equipment; Univac Scientific 1107 to be installed in January 1963 to replace the Univac I / REa Ss (30) Se (1956) Dc

Chalmers University of Technology, AOB Institutet (Scandinavian Automatic Data Processing Institute), Gibraltargatan 5, Gothenburg 5, Sweden / 61
University training in automatic data processing; consulting, programming, coding and running problems on computers for industries in Scandinavia / Alvac IIE (Wegematic 1000) /
Howard University, 2400 Sixth St., N.W., Washington, D.C. / °C 62
Registration, financial data, machine processing of reports, accounting and academic application / IBM 1620, 407, 514, 548, 82, 85, 26, 24, 56, 954 / Machine Accounting Lab; survey course covering Data Processing equipment; General programming / RPEa Ss(7) Se(1961) Dic


Lawrence Institute of Technology, 5700 - 3 Mile Rd., Southfield, Mich. / °C 62

Louisiana State University, 1800 University Ave., Baton Rouge, La. / °C 62

Michigan State University, East Lansing, Mich. / °C 62

University of Michigan, Ann Arbor, Mich. / °C 62

University of Missouri, Columbia, Mo. / °C 62

University of Notre Dame, South Bend, Ind. / °C 62

Purdue University, 1500 West University Avenue, West Lafayette, Ind. / °C 62

P. O. Box 776, Tech Station, Ruston, La. / °C 62
Education and research / IBM 1620 60K core, IBM 402, 407, 514, 519, 077, 022, 160 / 16 courses on computers and applications / REn Ss(4) Se(1961) Dic

Lund University, Dept. of Numerical Analysis, Sövegatan 14, Lund, Sweden / °C 62
Research and education / SNIIL computer with 4096 word core memory, AGL00 60 compiler / graduate and post-graduate courses in numerical analysis / RPEa Ss(12) Se(1956) Ic

Marquette University, 1515 W. Wisconsin Ave., Milwaukee 3, Wis. / °C 62
Research and education / IBM 1620; 2 IBM 729, 40,000 digits of storage; IBM 670 / Electrical Engineering, Mathematics, and Business Administration with application to computers / REna Ss(7) Se(1959) Dic

Massachusetts Institute of Technology, Computation Center, 77 Massachusetts Ave., Cambridge 39, Mass. / °C 62
For educational and research activities of MIT and 40 other participating colleges / 4-channel, IBM 7090, 19 on-line tape units, direct-data device, interval clock and memory-protect and relocation modes; 2 IBM 1401C 4K three tapes on each, EAM and card-punch machines / short programming courses in August, weekly seminars, approximately 50 accredited MIT courses using computers / RCEa Ss(53) Se(1956) Dic

Miami University, Oxford, Ohio / °C 62
University research / IBM 1620 / Computer Programming, Electronic Data Processing / REn Ss(3) Se(1959) Dc

Midwest Research Institute, 425 Volkert Blvd., Kansas City 10, Mo. / °C 62
Studies in application of digital and analog computers to business and scientific problems; mathematical analysis and computation; economic research; operations research; systems engineering; simulation / IBM 1620, Donner 3500, GEDA N3 and L3 / RCPa Ms(300) Me(1944) Dic

Missouri School of Mines and Metallurgy, Rolla, Mo. / °C 62


National Physical Laboratory, Mathematics Div., Teddington, Middlesex, England / °C 61
Computing service / DEUCE and ACE; digital and punched card / RCEa Ms(60) Me(1945) Dc

Newark College of Engineering, Newark 2, N.J. / °C 62

Northwestern University Computing Center, Evanston, Ill. / °C 62

Norges Tekniske Høgskole, Institutt for Avansert matematikk, Trondheim, Norway / °C 62

/ Expect to get governmental grant for the

**See Addendum, page 151**
installation of an electronic digital computer
/ REA's 92, 93, Dic
Ohio State University, Numerical Computation Laboratory, 1311 Kinnear Rd., Columbus, Ohio / G 62
Research and education; development of an executive routine which will maximize efficiency in
time-sharing the IBM 709-7090 / IBM 704 with 4 tapes, 4 K core, 4 drums; IBM keypunches, re-
producing punchers, sorter, tabulator; IBM 709, IBM 7090 (due Oct., 1962) / courses in numeri-
cal analysis and data reduction / REA's 92, 93, Dic
Oregon State University, Computing Center, Corvallis, Oreg. / G 62
Education and research / ALWAC III-E (8092),
photo-reader and high-speed punch, one off-line
Flexewriter / Computer Coding, ALWAC Coding,
Symbolic Languages, ALGOL Programs, Numerical
Calc., Circuits and Fields / REA's 93 (G) Se (1957) 1c
Digital computing service for the University / PENNSTAC digital computer; analog computers,
network analyzer / REA's 92 (13) Se (1952) Dic
Remington Rand Italia SpA, Centro di Calcolo Elettronico, Via Festa del Perdono, 7, Milano, Italy / G 62
Scientific research, technical computations, administrative services / Remington Rand UNIVAC
Solid-State 90-column tape system / mathematics
programming and commercial applications program-
ing / REA's 93 (25) Se (1960) 1c
RPI Computer Laboratory, Troy, N.Y. / G 62
Teaching and research / IBM 650, IBM 1410 on
order / Programming, Numerical analysis / REA's
93 (7) Se (1952) 1c
Royal College of Advanced Technology, Salford 5,
Lancashire, England / G 62
Research and education / 4 modules of EMI ana-
log computer Mark II / numerical analysis and
programming / Ea's 92, 93, Ac
Rice Institute Computer Project, Houston, Texas / G 60
Development of a high speed digital computer,
to be used as a university research tool / Ra's
92, 93, Se (1957) Dic
Purdue University, Statistical and Computing Lab.,
Engineering Administration Building, Lafayette,
Ind. / G 61
Statistical and computing services / REA's
94 (75) Se (1940) Dic
St. Cloud State College, St. Cloud, Minn. / G 62
Registration, basic research for the college / IBM:
summary punch, 800 sorter, 402 accounting
machine / Ra's 92 (2) Se (1957) 1c
San Diego State College, San Diego 15, Calif. / G 62
Problem-solving aid to instructional program and research center / IBM 650 (to be replaced in
1962 by IBM 1620) / Several courses offered by departments / REA's 92 (2) Se (1961) 1c
San Fernando Valley State College, School of Business and Economics, 18111 Nordhoff St., North-
ridge, Calif. / G 62
Teaching, research, consultation, programming / LGP-30, photoreader, 3 flexiwriters, and add-
 punch / Introduction to Data Processing, Programming, Fortran Programming / REA's 92 (2)
Se (1959) Dic
San Jose State College, Computer Center, San Jose 14, Calif. / G 62
Educational / IBM 1620 computer, 1622 card
reader, 1623 core storage, 407 accounting ma-
chine, 003 sorter, three 026 key punch machin-
es / Three math programming classes, four
business programming classes, miscellaneous
Fortran use in engineering / REA's 92 (2) Se
(1960) 1c
Southeast Missouri State College, Cape Girardeau,
Mo. / G 62
Education; business use and registration in the future / IBM 160 computer, tape fed / Computer
Programming, Numerical Analysis / REA's 92 (2)
Se (1962) 2c
Southern Illinois University, Data Processing and
Computing Center, Carbondale, Illinois / G 62
Education and research / IBM 1620, 1401, 0010,
0026, 0056, 0083, 0088, 0407, 0514, 0557 / Over
24 courses on computers and their application / REA's 92 (44) Se (1952) 1c
Southern Methodist University, Dallas 5, Tex. / G 62
Research and education / Univac 1103, Univac
90, Univac 120, tab equipment / Various pro-
gramming courses / REA's 92 (10) Se (1957) Dic
Southern University, Baton Rouge 13, La. / G 62
IBM 1620 and tabulating equipment / Engineering,
Math., Business, Statistics / REA's 92 (4)
Mc (1949) Dic
Stanford University, Computing Center, Stanford,
Calif. / G 62
Education and research / Burroughs 220, IBM
7090, 1401, auxiliary equipment / Numerical
Analysis, Introduction to Computing, Advanced
Programming / REA's 92 (25) Se (1953) 1c
Stevens Institute of Technology, Hoboken, N.J. / G 62
Research and education in digital computers
and related fields, general research activi-
ties / IBM 1620, card-in-out / Numerical Analy-
sis, Programming, Logical Design / REA's 92 (2)
Se (1960) Dic
Swedish Board for Computing Machinery (Matematik-
skandinven), Drottninggatan 25 A (P.O. Box 6131),
Stockholm 6, Sweden / G 62
Central state institution for research, develop-
ment, education, consulting, system investiga-
tion, problem analysis, documentation; comput-
ing service: applied mathematics, technol-
y, data processing: commercial, operational,
governmental, Branches, FACTY, EDV, ALWAC III-E
RMCGPea Ma (70) Mc (1949) Dic
Temple University, Broad St. & Montgomery Ave.,
Philadelphia 22, Pa. / G 62
Education, research, administration work / Card
650, IBM 1401 (Oct. 1962) / Three one-semester
courses in programming; and IBM 1401 courses
/ REA's 92 (2) Se (1959) 1c
Tennessee Polytechnic Institute, Cookeville, Tenn. / G 62
Make computer available to students and fac-
culty through formal course work; computer ser-
service to improve instruction in other courses;
research / IBM 1620 with card input-output / Prin-
ciples of Digital Computers, Digital Computer
Laboratory Course / REA's 92 (5) Se (1959) Dic
Trinity University, 715 Stadium Drive, San Antonio
12, Tex. / G 62
Education / LGP-30 computer and photoelectric
tape reader / Digital Computer Programming,
Numerical Analysis, Research Equations / REA's
92 (3) Se (1960) Dic
Tuskegee Institute, Rt 219, Moton Hall, School of
Engineering, Tuskegee Institute, Ala. / G 62
Education / IBM 1620 with 2OK card system, IBM
26, 02, 402 (expanding to magnetic tape in
1962) / High-Speed Methods of Computation / REA's 92 (2) Se (1961) Dic

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COMPUTERS and AUTOMATION for June, 1962
Computer Centers

Universität Berlin, Recheninstitut der Technischen, Hardenbergstrasse 34, Berlin-Charlottenburg, Germany / G 60
ZUSE Z 22 R computer / RePa 7s 7e 1c der Universität Würzburg, Institut für Angewandte Mathematik, Klinikstrasse 6, Würzburg, Germany / G 62
ZUSE Z 22 R computer / RePa 7s 7e 1c

Université de Montréal, P.O. Box 6128, Montréal 26, Quebec, Canada / G 62 Data processing, research, instruction / UNIVAC 120, LCP-30 / Programming courses / RePa 7s(26) Se (1959) 1c

University of Akron, 302 E. Buchtel Ave., Akron 4, Ohio / G 62
Instruction and research / IBM 1620 with paper tape and card input-output; 2 magnetic tape units on order; 40K memory / Digital Computer Programming / RePa 7s(1) Se (1961) 1c
University of Alabama, Box 2511, University, Ala. / G 62
Instruction, research, service to administration / UNIVAC solid-state 80 step with tapes / 3 courses in numerical analysis, 2 courses in data processing and statistical applications / RePa 7s(7) Se (1961) 1c

University of Arizona, Numerical Analysis Laboratory, Tucson 25, Ariz. / G 62 Research and instruction / IBM 650, IAS, on-line 407, 3 complete BAE facilities / Beginning and Advanced Programming, Business Data Processing, Numerical Analysis, Information Retrieval and Special Problems / RePa 7s(23) Se (1957) 1c

University of Arkansas, Fayetteville, Arkansas / G 62
Education and research / IBM 650 with peripheral equipment / Computer Programming / RePa 7s(6) Se (1960) 1c
University of California, Computer Center, 201 Campbell Hall, Berkeley 4, Calif. / G 62 Computer facilities as aid to teaching and research / IBM 704, 32K memory, 8 tapes; IBM 1401, 4K memory, 4 tapes; miscellaneous off-line conventional punch-card equipment / FORTRAN Programming / RePa 7s(5) Se (1956) 1c

University of California, Numerical Analysis Research, Los Angeles 24, Calif. / G 60 National Bureau of Standards Western Automatic Computer, a medium-sized, high speed computer with 256 word electrostatic (Williams type) memory, and an 8192 word drum storage; peripheral punch-card equipment / RePa 7s 7e 1c
University of California, Western Data Processing Center, Graduate School of Business Administration, 405 Hilgard Ave., Los Angeles 24, Calif. / G 60 Education and research in business data processing / IBM 7090 DP System, IBM 1401, complete punch-card equipment / Non-credit courses in FORTRAN programming / RePa 7s(41) Se (1957) 1c

University of California at Los Angeles, 405 Hilgard Ave., Los Angeles 24, Calif. / G 62 Research and instruction / IBM 7090 system with 8 tapes, IBM 1401 with 1 tape, SWAC; and other small-size computers / 7 undergraduate and 3 graduate courses in mathematics; numerous seminars and colloquia; probably twenty courses in other departments / RePa 7s(15) Se (1961) 1c
University of Cambridge, University Mathematical Laboratory, Corn Exchange St., Cambridge, England / G 62
Provide computing service for university / Built Edsac 1 and Edsac 2 / RePa 7s(30) Mc (1939) 1c

University of Chicago, Institute for Computer Research, Chicago, Ill. / G 60
Computer research and computing service for university / MANIAC III computer built by the Institute / RePa 7s 7e 1c
University of Cincinnati, Computing Center, Cincinnati 31, Ohio / G 62 Education and research / 1620 with 40K memory / Several engineering and business courses / RePa 7s(4) Se (1958) 1c
University College of South Wales and Monmouthshire, Cathays Park, Cardiff, Wales / G 62
STANFELD FORTEC computing system / RePa 7s 7e 1c

University of Connecticut, Computer Center, Storrs, Conn. / G 62
Research and education / IBM 1620 with 40K storage and card input-output plus off-line punching and printing, PACE 2310 analog computer with 80 amplifiers / Non-credit faculty workshops; electrical engineering graduate courses on digital and analog computers, several undergraduate courses including computers / RePa 7s(4) Se (1961) 1c

University of Delaware, Newark, Delaware / G 62
Research and instruction / Bendix G150 and 1 magnetic tape, IBM 1620, 40K, with cards / Automatic Digital Computation, Numerical Analysis / RePa 7s(3) SE (1957) 1c
University of Detroit, 4001 W. McNichols Rd., Detroit 21, Mich. / G 62
Research and education / Burroughs E-101, IBM 1620, and peripheral equipment / Computer Concepts, Undergraduate and Graduate Numerical Analysis / RePa 7s(12) Se (1957) 1c

University of Durham Computing Laboratory, One Kingston Terr., Newcastle upon Tyne 2, England / G 62
Research / Ferranti Pegasus Computer; Deca Twin Magnetic Tape Unit with Ferranti Controlled System / RePa 7s(6) Se (1957) 1c
University of Glasgow, Computer Laboratory, W. 2, Scotland / G 62
English Electric DEUCE Mk. I (64 column read punch with paper tape input and output); English Electric KDF9 computer with line printer, magnetic tape units / RePa 7s 7e 1c

University of Hawaii, Statistical and Computing Center, University Ave., Honolulu 14, Hawaii / G 62
Educational and research projects / IBM basic 650, alphabetic and special character device / IBM 650, SOAP, FORTRAN, and Basic Machines / RePa 7s(4) Se (1960) 1c


University of Kansas, Computation Center, 112 Summerville Hall, Lawrence, Kan. / G 62
Academic research / IBM 650, IBM 1620 40K, with 4 magnetic tape drives to be delivered in 1962 / Programming / RePa 7s(3) Se (1957) 1c

University of Kentucky, Lexington, Ky. / G 62
Aid in educational and research activities / IBM 1620; 1401, 407, 003, 519, 056, 026 / Automatic Data Processing, Fundamentals of Programming, Data Processing for Business, Cases in
Computer Centers

Management, Design of Digital Computer, Numerical Analysis / RCPEa Ss(10) Se(1956) Dc
University of Liverpool, Computation Laboratory, Liverpool, England / °C 62

Education and research / English Electric DEUCE Mk II Computer, range of punch card equipment, KDF9 on order / Numerical Analysis, Programming, Electronic Computation / RCPEa Ss(9) Se(1959) 1e

University of London, Computer Unit, 44 Gordon Sq., London, W.C. 1, England / °C 62

Research / Ferranti Mercury Computer with 5-hole paper tape input and output; Elliott photo-electric card reader connected as auxiliary input / Programming Courses, Theory and Use of Digital Computers, various symposia and external lectures / RCPEa Ss(23) Se(1950) 1c

University of Louisville, Computing Laboratory, Louisville, Ky., Ky. / °C 62

Education and research / IBM 1620, card input-output, IBM 407, PACE 221R analog computer / Numerical Methods, Introduction to Digital Computation, Engineering Applications of Automatic Computation, Advanced Digital Programming / RCPEa Ss(9) Se(1959) 1a

University of Maine, Orono, Maine / °C 62

Research and education / IBM 1620, 20K, card-oriented / Programming courses in math., civil engineering, mechanical engineering, and business and economic departments / RCPEa Ss(2) Se(1961) Dc

University of Mainz, Institute for Applied Mathematics, Jacob Wunderweg 7, Mainz, Germany / °C 62

Instruction, studies in logical design of unorthodox computers, calculations in power networks / Z 22 Digital Computer; RA 422/2 electronic analog computer; Siemens 3202 transistorized digital computer, 12K and three IBM 727 magnetic tape stations / RCPEa Ss(10) Se(1959) 1c

University of Manchester, Computing Machine Laboratory, The University, Oxford Rd., Manchester 13, England / °C 62

Research into construction and use of digital computers / Ferranti Mercury; Ferranti Atlas being installed / Numerical Analysis, Programming, Logical Design / RCPEa Ss(30) Me(1949) Dc

University of Maryland, Computer Science Center, College Park, Md. / °C 62

Education and research / IBM 1401 with 2 tapes, IBM 1620 (in Coll. of Engng.), IBM 7090 on order / Numerous courses directly related to the computers and others with application to engineering, education, mathematics, and business / RCPEa Ss(10) Se(1959) 1c

University of Miami, Coral Gables, Fla. / °C 62

Keeping all student records and accounting records on punch cards / RCA 301, IBM key punchers, sorters, reproducers, interpreters, collators, and 407 accounting machines, IBM 1620 / Operation of IBM Machines, IBM Accounting, Programming the Computer / RCPEa Ss(15) Me(1950) Dc

University of Michigan, Institute for Science and Technology, P. O. Box 2008, Ann Arbor, Mich. / °C 61

Research and computing services / Librascope LGP-30, IBM 709, and a modern large scale analog computer / RCPEa Ss (600) Me(1946) DaC

University of Minnesota Computing Center, Minneapolis, Minn., Italy / °C 60

Instruction / Univac Solid-State 90 / RCPEa Ss(10) Se(1959) 1c

University of Missouri, Computer Research Center, Columbia, Mo. / °C 62

Computer facilities for University research and educational programs / Burroughs 204, paper tape, card, magnetic tape, and floating point; IBM 1620 card system, 60K digit memory / Fundamentals of Digital Computer Programming, Digital Computer Applications in Engineering, Numerical Analysis / RCPEa Ss(8) Se(1960) Dc

University of Nebraska, 210 Nebraska Hall, Lincoln 8, Nebr. / °C 62

Research and instruction / Burroughs 205 / Only informal coding courses / RCPEa Ss(5) Se(1960) 1c

University of Nevada, Reno, Nev. / °C 62

Research, education, and business / IBM 1620, 20K card and reader, 407, 519, 077, 035, 480, 056, 2-024, 026 / Computer programming courses, basic and advanced; key punching, machine courses and users seminars / RCPEa Ss(5) Se(1959) 1c

University of New Hampshire, Computation Center, Durham, N.H. / °C 62

Research and education / IBM 1620, 40K, card input-output, 407 printer, 4 key punches / FORTRAN Coding / RCPEa Ss(7) Se(1961) 1c

University of New South Wales, UTECOM Laboratory, Kensington, Australia / °C 60

English Electric DEUCE computer / RCPEa Ss(5) Se(1960) 1c

University of North Carolina, Computation Center, Chapel Hill, N.C. / °C 60

Instruction and research / RCPEa Ss(60) Se(1959) Dc

University of North Dakota, University of North Dakota, Grand Forks, N.D. / °C 62

Education and research / IBM 1620, 602, 514 / Introduction to Electronic Computers, Computers for Engineers, Numerical Analysis / RCPEa Ss(4) Se(1961) Dc

University of Oregon, Statistical Laboratory and Computing Center, Eugene, Ore. / °C 62

Education and research / IBM 1620, 1623, 1622, 026, 032 / Numerical Analysis, Computing / REa Ss(6) Se(1961) 1c

University of Pennsylvania, Computer Center, 209 S. 33rd St., Philadelphia 4, Pa. / °C 62

Adjoint to research and education programs / Univac I System, Univac Tape Solid-State 80 System / Programming courses for the two computers plus 10-15 accredited courses offered by graduate school / RCPEa Ss(12) Se(1957) DaC

University of Pittsburgh, Computation and Data Processing Center, Fifth Ave., Pittsburgh 13, Pa. / °C 62

Education and research / IBM 7070 10K core storage, floating point, 10 magnetic tapes; IBM 1401, 8K core storage, 4 switchable tapes input-output, card and printer / 12 to 15 courses / RCPEa Ss(2) Se(1956) DaC

University of Rhode Island, Computer Laboratory, Kingston, R.I. / °C 62

Education and research / IBM 1620, 60K core, 600 CPM card reader, IBM 407, 514, 557, 057, 077, key punches, IBM 100 / Numerical methods, civil engineering design, statistical design of experiments / RCPEa Ss(10) Se(1959) Dc

University of Rochester, Computing Center, Rochester 20, N.Y. / °C 62

Teaching, research and service / IBM 7070, IBM 1401, IBM 1620 / Elements of Computer Science, Programming Languages, Introduction to Theory of Automation, Boolean Algebra and Logical Design, Introduction to Data Processing, and others / RCPEa Ss(10) Se(1956) Dc

University of South Carolina, Columbia, South Carolina / °C 62

Research and education / IBM 1620, 20K memory, 1622, card system, LGP-30 / No formal courses at present / REa Ss(3) Se(1962) 1c

University of Southern California, Computer Sciences.
Universities and Computer Centers

University of Southern Mississippi, Station A, Box 91, Hattiesburg, Miss. / °C 62
Teaching, research / RPC 4000, tape reader, punch, typewriter / Computer Programming, Numerical Analysis / REEs S(S) Se(1961) Dc

University of Tennessee, Knoxville, Tenn. / °C 62
Scientific and engineering research and education / IBM 1620, 60K, cards, machine floating-point, 407 off-line/4 courses in Mathematics Dept., about 8 short courses per year for faculty and graduate students / REEs S(S) Se(1961) Dc

University of Texas, Computation Center, Austin 12, Texas / °C 60
Research and computing core service for university / Control Data 160 and 1604 / REEs S(S) Se(1958) Dc

University of Uppsala, Computer Group, Thunbergsval­gen 7, Uppsala, Sweden / °C 62
Research and teaching / IBM-1620, punched card equipment; paper tape equipment; indirect addressing, off-line tabulator and diverse off-line equipment / Numerical analysis and programming / REEs S(S) Se(1961) Dc

University of Vermont, Burlington, Vt. / °C 62
Academic and research support / IBM 1620 and auxiliary equipment for punched cards / REEs S(S) Se(1961) Dc

University of Virginia, Charlottesville, Va. / °C 62
University computer center / Burroughs 205 with 2 magnetic tapes and automatic floating point / Non-credit programming courses / REEs S(S) Se(1960) Dc

University of Washington, Research Computer Labora­tory, 4004 Baygley Hall, Seattle 5, Wash. / °C 62
Research and education / IBM 709, 650, 722, 714, 717 / Programming, Numerical Analysis, Business Statistics / REEs S(S) Se(1956) Dc

University of Wichita, School of Engineering, Wich­i­ita, Kan. / °C 62
Engineering education / IBM 1620, card input and output, card reader; Boeing analog computer, 60 amplifier, 2 Heathkit 15 amplifier analogs / Digital Computer Programming, Automatic Computers / REEs S(S) Se(1961) Dc

University of Wyoming, Laramie, Wyoming / °C 62
Student and faculty training and research / Bendix G-15D computer, IBM 26, IBM 63, Friden Flexwriter; IBM 1620 by Nov. 1962 / Data Processing, Computer Programming, Numerical Analysis / REEs S(S) Se(1959) Dc

Utah State University, Logan, Utah / °C 62
Teaching and research / IBM 1620, card, 40K, indirect addressing, additional instructions, O24, O26, O56, O92, O85, S14, 407/10 courses offered / REEs S(S) Se(1960) Dc

Valparaiso University, Valparaiso, Ind. / °C 62
Instruction / IBM 1620, 1621 Expected late 1962: IBM 1620, 1622, O26, O82, 402 / Numerical Analysis Programming / REEs S(S) Se(1960) Dc

Villanova University, Villanova, Pa. / °C 62
Education and research / IBM 1620 card input-

--- END ---

**ADDENDA**

Roster of Schools, Colleges, and University Computing Centers

Louisiana State University, Computer Research Cen­ter, Baton Rouge, La. / °C 62
Research and teaching / IBM 1620, 1622, 1623 60K memory, 1A, / Programming, Applications of Computers and Engineering Problems, Electronic Data Processing, and others / REEs S(S) Se(1960) Dc

Roster of Products and Services

C23. Analog Computers

Systron-Donner Corp., 880 Galindo St., Concord, Calif. / analog computers and data acquisition systems / DESCR: expandable 3200 iterative analog computer, ±100v range, 0.01% accuracy, 20 to 100 amplifiers. Data acquisition and logging systems monitoring up to 200 channels and more / - / $10,000 to $100,000 / C23
ROSTER OF

COMPUTER ASSOCIATIONS

Following is a roster of computer associations, not including "Users' Groups"; for these, see elsewhere in this Directory.
All additions, corrections, and comments will be welcome.

I.


II.

National Information Processing Organizations included in the International Federation of Information Processing Societies:

ARGENTINA
Sociedad Argentina de Calculo
C/o Mr. H. R. Ciancaglini
Facultad de Ingenieria
Universite de Buenos Aires
Buenos Aires

AUSTRALIA
Australian National Committee on Computation and Automatic Control
C/o Prof. John M. Bennett
The Adolph Basser Computing Lab
University of Sydney
Sydney

BELGIUM
Association Belge pour l'Application des Methodes Scientifiques de Gestion
C/o Professor M. Linsman
Centre Interdisciplinaire de Calcul
Universite de Liege
6, quai Bunning
Liege

CANADA
Computing and Data Processing Society of Canada
C/o Prof. C. C. Gotlieb
Computation Centre
University of Toronto
Toronto 5, Ontario

CZECHOSLOVAKIA
Commission for Technical Cybernetics, Czechoslovak Academy of Sciences
C/o Ing. Jiri Kryze
Head, Computing Center
Institute of Information, Theory & Automation
Czechoslovak Academy of Sciences
Ceskomalinska 25
Prague 6

DENMARK
Danish Academy of Technical Sciences
C/o Dr. Niels I. Bech
Regnecentralen
Gl. Carlsbergvej 2
Copenhagen-Valby

FINLAND
The Finnish National Committee for Information Processing
C/o Prof. Pentti Laasonen
Finnland Institute of Technology
Helsinki

FRANCE
Association Francaise de Calcul et de Traitement de l'Information (AFCALTI)
C/o Mr. J. Carteron
Institut d' Astrophysique
98 bis. Boulevard Arago
Paris 14e

GERMANY
Deutsche Arbeitsgemeinschaft für Rechen-Anlagen (DARA)
C/o Prof. Dr. A. Walther
Technische Hochschule
Darmstadt 16

ITALY
Associazione Italiana per il Calcolo Automatico
C/o Mr. A. Ghizzetti
Istituto Nazionale per le Applicazioni del Calcolo
7, Piazzale delle Scienze
Rome

JAPAN
Information Processing Society of Japan
C/o Prof. H. Yamashita
Computer Associations

U.S.S.R.
Academy of Sciences of the U.S.S.R.
c/o Prof. A. A. Dorodnicyn
Computing Centre
Academy of Sciences of the U.S.S.R.
I-Academichesky Proezd 28
Moscow B-312

III.
Other Computer Associations or Associations with Computer Interests (Not Regional)

American Institute of Electrical Engineers, 29 West 39th St., New York 18, N. Y., U.S.A.
Association for Computing Machinery, 14 East 69 St., New York 21, N. Y., U.S.A.
Association of Data Processing Service Organizations, 1000 Highland Ave., Abington, Pa., U.S.A.
Association Internationale pour le Calcul Analogique, 50 Ave. Franklin D. Roosevelt, Bruxelles, Belgium
Business Equipment Manufacturers Association (BEMA), c/o Richard L. Waddell, 235 East 42nd St., New York 17, N. Y., U.S.A.
European Computer Manufacturers Association (ECMA), Geneva, Switzerland
Institute of Radio Engineers, Professional Group on Electronic Computers, One East 79 St., New York 21, N. Y. U.S.A.
Northwest Computing Association, Box 836, Seahurst, Wash., U.S.A.
Provisional International Computation Centre, Rome, Italy

IV.
Regional Computer Associations

A. Chapters of the Association for Computing Machinery in the United States

ALABAMA
Mid-Southeast, Alabama Chapter, C. L. Bradshaw, Computation Div., George C. Marshall Flight Center, Huntsville, Ala.
Montgomery Chapter, Hugh Wakefield, c/o Mitre Corp., 202 Lee St., Montgomery, Ala.

ARIZONA
Sierra Vista Chapter, Fletcher W. Donaldson, P. O. Box 997, Sierra Vista, Ariz.

CALIFORNIA
Arrowhead Chapter (San Bernardino), c/o Donald Buswell, Code 643, Naval Ordnance Lab., Corona, Calif.
Los Angeles Chapter, c/o B. F. Handy, Litton Industries, 5500 Canoga Ave., Woodland Hills, Calif.
Orange County Chapter, c/o Don Robinson, Minneapolis-Honeywell, Datamatic Div., Los Angeles, Calif.

NORWAY
Norwegian Society for Electronic Information Processing (NSEI)
c/o Mr. Jan V. Garwick
Chairman NSEI
Norwegian Defense Research Establishment
Kjeller pr Lillestrom, Norway

NETHERLANDS
Nederlands Rekenmachine Genootschap
c/o Prof. Dr. Ir. A. van Wijngaarden
Mathematisch Centrum
2e Boerhaavestraat 49
Amsterdam

POLAND
Polish Academy of Sciences
c/o Prof. Leon Lukaszewicz
Koszykowa 79, ZAM
Warsawa

SWITZERLAND
Swiss Federation of Automatic Control
c/o Dr. A. P. Speiser
IBM Research Laboratory
Zurichstrasse 108
Adliswil-Zurich

UNITED KINGDOM
British Computer Society
c/o Prof. M. V. Wilkes
University Mathematical Laboratory
Corn Exchange Street
Cambridge
or
Finsbury Court
Finsbury Pavement
London, EC2

UNITED STATES
American Federation of Information Processing Societies
c/o Mr. I. L. Auerbach
Auerbach Corporation
1634 Arch Street
Philadelphia 3, Pa.
Computer Associations

San Fernando Valley Chapter, c/o Werner L. Frank, Ramo-Wooldridge, 8433 Fallbrook Ave., Canoga Park, Calif.
San Francisco Bay Area Chapter, c/o Tom Wilder, Director, Data Systems Div., Broadview Research, Burlingame, Calif.
University of Calif. Berkeley Student Chapter, Ralph E. Love, Jr., Univ. of Calif., Berkeley, Calif.

COLORADO
Rocky Mountain Chapter, c/o Paul Fullerton, Del-Cos, 1345 Stout St., Denver 4, Colo.

FLORIDA
Central Florida Chapter, c/o Dr. David Clutterham, The Martin Co. MP 206, Orlando, Fla.
Palm Beach Chapter, c/o Arthur E. Oldehoeft, Fla. Res. & Develop. Center, Pratt and Whitney Aircraft, P. O. Box 2691 West Palm Beach, Fla.
Southeastern Florida Chapter, James L. Thorpeen, 69 Gardner Dr., Fort Walton Beach, Fla.

KENTUCKY
Kentucky Chapter, c/o Robert L. Droke, IBM Typewriter Div., Lexington, Ky.

LOUISIANA
Shreveport Chapter, c/o Edward Gordon, Research Dept., United Gas Corp., P. O. Box 1407, Shreveport, La.
Univ. of S. W. La. Student Chapter, Dr. James R. Oliver, Dir., Computing Center, Univ. of Southwestern La., Lafayette, La.

MASSACHUSETTS
Greater Boston Chapter, c/o R. C. Miller, M/C 807A, The MITRE Corp., P. O. Box 208, Bedford, Mass.

MICHIGAN
Detroit Chapter, Dr. Bernard A. Galler, Univ. of Michigan, Computing Center, North Univ. Bldg., Ann Arbor, Mich.

MISOURI
Kansas City Chapter, c/o Gerald E. Berger, System Development Corp., Richards-Gebaur AFB, Grandview, Mo.
Mo. School of Mines & Metallurgy, Student Chapter, Ralph E. Lee, Director, Computing Center, Mo. School of Mines & Metallurgy, Rolla, Mo.
St. Louis Chapter, c/o Ray Hollembach, Ernst & Ernst, St. Louis, Mo.

NEW MEXICO
Rio Grande Chapter, c/o William J. Worlton, 4432-B Alabama St., Los Alamos, N. M.

NEW JERSEY
Atlantic County Chapter, Steve Pardee, TRW Computers Co., Bldg. 3 NAFEC, Atlantic City, N. J.

NEW YORK
Hudson-Mohawk Chapter, c/o D. L. Shell, Knolls Atomic Power Lab., General Electric Co., Schenectady, N. Y.
Kingston Chapter, C. R. Hollembach, Box 94 Rt. 4, Saugerties, N. Y.
Long Island Chapter, c/o Mark T. Guss, Grumman Aircraft, Computing Group, Bethpage, N. Y.

Poughkeepsie Chapter, Robert L. Simek, IBM Corp., Bldg. 991, Poughkeepsie, N. Y.
Syracuse Chapter, Dave Bahrs, 10 Apple Tree Lane, Liverpool, N. Y.

NORTH CAROLINA
Western Carolinas Chapter, c/o Myron K. Simas, 815 Orchard St., Hendersonville, N. C.

OHIO
Cincinnati-Dayton Area Chapter, R. G. Claussen, General Electric Co., Building 305-FPLD, Cincinnati 15, Ohio
Cleveland Chapter, c/o George J. Moshos, NASA-Lewis Research Center, 21000 Brookpark Rd., Cleveland 35, Ohio

OKLAHOMA
Tulsa Chapter, C. J. Ladas, IBM Corp., 1307 South Boulder, Tulsa, Okla.

PENNSYLVANIA

TEXAS
Dallas-Fort Worth Chapter, c/o O. James Adair, 5305A Bryce St., Fort Worth, Tex.
Houston Chapter, c/o R. Rosencranz, Jr., 2342 McClendon, Houston 25, Tex.

UTAH
Utah Chapter, c/o Don Barney, 343 S. 11th East, Salt Lake City, Utah

WASHINGTON, D. C.

WISCONSIN
Milwaukee Chapter, c/o Richard Haerle, 7576 N. 43rd, Milwaukee, Wis.

B. Other Regional Associations:
No information received.
COMPUTER USERS GROUPS
— ROSTER

Following is a roster of groups of computer users. All additions, corrections, and comments will be welcome.

ALWAC Users Association / ALWAC III-E / Mr. Phillip Jarvie, Sec'y, c/o Alwac Computer Div., E1-Eltronics, Inc., 13041 S. Cermak Ave., Hawthorne, Calif.

AUA — see ALWAC Users Association

Autometrics, computers — see Recomp Users Group

Bendix G-15 Computer — see G-15 Users Exchange Association

Bendix G-20 Computer — see G-20 Users Group

BIO / Dr. James W. Sweeney, Sec'y-Treas., BIO, c/o Tulane University, 1430 Tulane Ave., New Orleans, La.

Burroughs Corp. — see Cooperating Users Exchange and Datatron Users Organization

Burroughs 205 — see Datatron Users Organization

Burroughs 220 — see Cooperating Users Exchange

Control Data Corp. 1604 Computer — see CO-OP

CO-OP / Control Data Corp. 1604 Computer / Mr. Robert J. Morrisette, Sec'y, CO-OP, Program Maintenance & Distribution, Control Data Corp., 3330 Hillview Ave., Palo Alto, Calif.

Cooperating Users Exchange / Burroughs 220 Computer / Mr. Ralph Keirstead, Sec'y, CUE, c/o Mathematical Sciences Dept., Computation Group, Stanford Research Institute, Menlo Park, Calif.

CUE — see Cooperating Users Exchange

D-1000 User's Group — see DATAMATIC 1000 User's Group

DATAMATIC 1000 User's Group / Honeywell D-1000 Computer / Mr. Martin N. Greenfield, Sec'y, D-1000 User's Group, c/o Honeywell Electronic Data Processing Div., 60 Walnut St., Wellesley Hills, Mass.

Datatron Users Organization (DIO) / Burroughs 205 Computer / Dr. Edgar L. Eichhorn, Sec'y, DIO, c/o Professional Services, 460 Sierra Madre Villa, Pasadena, Calif.

DIO — see Datatron Users Organization

EXCHANGE — see G-15 Users Exchange Association

FAST / Mr. Bruce Clark, Sec'y, FAST, c/o Ramo-Wooldridge, P. O. Box 997, Sierra Vista, Ariz.

FILE / Mr. Edward C. Marzo, Sec'y, FILE, c/o William Carter Co., Needham, Mass.


GE-225 / GE-225 Computer / Mr. R. Fuller, Pres.

GE-225, c/o General Electric Co., Schenectady, N.Y.

GUIDE / IBM computers / Mr. Otis Sidwell, Sec'y, GUIDE, c/o American Telephone & Telegraph Co., 301 Main St., White Plains, N.Y.

H-800 User's Association / Honeywell 800 Computer / Mr. Bert L. Neff, Sec'y-Treas., H-800 User's Association, c/o Metropolitan Life Insurance Co., One Madison Ave., New York 16, N.Y.

Honeywell 800 Computer — see H-800 User's Association

Honeywell D-1000 Computer — see DATAMATIC 1000 User's Group

IBM computer users' groups — see GUIDE and SHARE


LGF-30 — see POOL (Royal McBee Corp.)

LINC / Mr. James Nickitas, Sec'y, LINC, c/o The Mitre Corp., P. O. Box 206, Lexington 73, Mass.

Minneapolis-Honeywell Regulator Co., computers — see DATAMATIC 1000 User's Group and H-800 User's Association

National Cash Register Co. computers — see NCR-304 and NCR 390 Users Organization

NCR-304 Users Organization / National Cash Register's NCR-304 Computer / L. J. Rushbrook, Sec'y, c/o The National Cash Register Co., Main & K Sts., Dayton 9, Ohio

NCR 390 Users Organization / National Cash Register's NCR-390 Computer / Mr. C. Richard Fruth, Chmn., NCR 390 Users Organization, c/o Professional Bldg., Fostoria, Ohio

PBIG / Packard Bell computers / Mr. Robert R. Manchester, Sec'y, PBIG, c/o Packard Bell Computer Corp., 1905 Armcoast Ave., Los Angeles 25, Calif.


Radio Corp. of America computers — see RCA 501 Users Association


Recomp Users Group (RUG) / Autometrics, Recomp computers / Mr. Zyg Jelinski, Sec'y, Recomp Users Group, c/o Autometrics Industrial Products, 3400 East 70th St., Long Beach 5, Calif.

Philco 2000 computer — see TUG
OVER 500 AREAS OF APPLICATION OF COMPUTERS
(Continued from page 144)

Psychological tests: analysis

20. Sociology

Data reduction and analysis

21. Statistics

Bernoulli probability
Beta function
Binomial coefficient calculations
Chi squared function calculations
Complex error function and integral
Correlation
Covariance
F-test
Factor analysis
Forecasting
Gamma function
Gaussian probability
Hypergeometric probability
Least-square-polynomial fitting
Moments
Moving averages
Multiple regression
Non-linear estimation
Period search
Poisson probability
Time series analysis and adjustment
T-test I (sample mean vs. population mean)
T-test II (difference between two means)
Variance: analysis

ROSTER OF PRODUCTS AND SERVICES
(Continued from page 94)

Strand Engineering Co., *a / Datron-­
ics 6A / DESC: digital symbol
generator. 8 bit input: generates
crt deflections signals for character
or symbol. 64 or 128 symbols to
specification. Asynchronous at 40
msec / character maximum / USE: as
a display system component / $7900 / V1

Strand Engineering Co., *a / Datron-
ics 200 / DESC: a general purpose
digital display system, modular con-
struction including: buffer/program-
ner, symbol generator, line
generator, monitor displays, micro-
film recorders, asynchronous with
over 25,000 operations per second / USE:
on-line and off-line to com-
puters and other digital systems /
$35,000 to $75,000 / V1

Telecomputing Services, Inc. -- see
D2A

Thompson Ramo Wooldridge Inc., RW Div.
Westinghouse Electric Corp., Electron-
ic Tube Division -- see T19

- END -
A New Generation of Low Cost Computers

SDS 900 Series of high-speed, solid state, general-purpose digital computers are in production. First deliveries will be made in autumn. Designed with the user in mind, they are single address, random access core memory machines, intended for general-purpose scientific computation and special-purpose systems integration. Programming is simplified. Input/output is buffered and high speed. Computation rates are comparable to that of large-scale computers. SDS 900 Series computers are symbolically homogeneous—the programs from either machine can be run on the other. They are unusually reliable, with ferrite core memories, all-silicon semiconductors, and circuitry based on worst case analysis. Compare the following characteristics:

### Common Characteristics

#### Memory Characteristics
SDS 900 Series computer words contain 24 binary bits. An additional parity bit allows parity checking of all memory and input/output operations. Special logic makes memory non-volatile with power failure.

#### Input/Output Characteristics
SDS computers incorporate five separate input/output systems. One of these, a buffered input/output, allows data transfer at rates in excess of 120,000 characters/second. A priority interrupt system provides two standard plus 1024 optional channels. In addition to standard input/output devices, all SDS computers communicate directly with: IBM-compatible magnetic tape units, A-D converters, IBM 7090 computers, other SDS machines, and an unlimited range of additional input/output devices.

#### Programming Characteristics
SDS single address instructions include both an Index Register and an Indirect Address bit. Programmed Operator instructions, an exclusive SDS feature, permit complete interchangeability of 910 and 920 programs. FORTRAN II with magnetic tape statements and a symbolic assembler are included in a complete SDS 900 series software package.

Write today for new SDS 900 Series Brochures.

---

**SDS 900 Series**

- **Model 920**
  - $89,000
  - The 920 is an extremely fast, general purpose computer for scientific use. Its command structure includes built-in Floating Point and Multi-Precision instructions. In speed, characteristics, and working flexibility, it surpasses larger, more costly first generation solid state machines. When carefully compared on all of its operating parameters, the 920 clearly offers more general purpose scientific computing per dollar than currently available machines.

- **Model 910**
  - $41,000
  - The 910 is the first random access, buffered input/output digital computer to be priced below $90,000. Although designed primarily for systems use, its high speed, working flexibility, and excellent performance allow it to be used as an extremely low cost general purpose machine. The 910 operates directly, without special coupling, with all types of input/output devices, including magnetic tape units, A-D converters, automatic typewriters and line printers.

---

**SDS 900 Series**

- **Model 920**
  - **$89,000—Model 920**
    - **Memory & Speed** The 920's basic core memory of 4,096 words is expandable to 16,384 words. Typical execution times for 24-bit operands, including both memory access and indexing, are: Add ... 16 μsec; Multiply... 32 μsec; Floating point operations (24-bit mantissa plus 9-bit exponent) — Add ... 192 μsec; Multiply... 184 μsec; (39-bit mantissa plus 9-bit exponent) — Add ... 358 μsec; Multiply... 275 μsec.

- **Model 910**
  - **$41,000—Model 910**
    - **Memory & Speed** The 910's basic core memory of 2,048 words is expandable to 16,384 words. Typical execution times for 24-bit operands, including both memory access and indexing, are: Add ... 16 μsec; Multiply... 248 μsec; Floating Point operations (24-bit mantissa plus 9-bit exponent) — Add ... 640 μsec; Multiply... 656 μsec; (39-bit mantissa plus 9-bit exponent) — Add ... 1,984 μsec; Multiply... 2,040 μsec.

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**SDS 900 Series**

- **Model 920**
  - **Standard Equipment** All SDS 920 computers are delivered complete with 300 character/second paper tape punch, 60 character/second paper tape reader, 60 character/second paper tape punch, input/output typewriter, and manual control and display of all registers. SDS magnetic tape units, converters, and other I/O devices are available as optional equipment.

- **Model 910**
  - **Standard Equipment** All SDS 910 computers are delivered complete with a 300 character/second paper tape reader and manual control and display of all registers. SDS magnetic tape units, converters, 60 character/second paper tape punch, automatic typewriter, and other I/O devices are available as optional equipment.
Wouldn’t it be wonderful if someone invented... sun glasses that grow darker as the sun gets brighter?

As a matter of fact, the chemists, physicists and engineers who work at research for NCR have come up with a development that makes just such glasses possible.

But you won’t be able to buy sun glasses labeled NCR for some time... if ever.

For, you see, the glass that changes with the light was developed for quite another use. It is among the many new and important projects currently in process by NCR’s two thousand research and development workers. And, like all the others, it has as its central focus the objective of improving the capacity and efficiency of computers, calculators and other machines in modern business systems.

The secret of the glass that changes color is being explored to enhance the speed and flexibility of data processing systems. The use of photochromism is an extremely advanced method of increasing the utility of electronic computers. The operating principle is based on color changes which occur under varying wave lengths of light.

Obviously, this principle has application to other complex commercial and military devices which we can’t discuss here.

It’s another reason why we say, Look to NCR for the forward developments dedicated to providing the finest in total systems... from original entry to final report—through NCR accounting machines, cash registers, adding machines and electronic data processing.

New sign of The National Cash Register Company, Dayton 9, Ohio—1,133 offices in 120 countries—78 years of helping business save money.
SKIRMISH OVER A COMPUTER-TO-INERTIAL-PLATFORM INTERPRETER

What is the best way to implement the digital-to-analog conversion circuitry required to convert binary incremental signals from a digital computer to precise d.c. voltages for gyro torquing in an airborne tactical data system? This was a problem faced by Litton data systems engineers.

Several engineers who had participated in the development of an earlier navigation buffer employing the digital servo technique were strongly inclined towards playing it safe by adopting an identical approach. To permit the navigation system to sustain the longer flight times required under the new program, they proposed engineering greater accuracy into the existing buffer. Somehow, they felt, the additional requirements for lesser weight and volume could also be met. Preliminary investigation revealed that this scheme would require at least 20 pounds of hardware.

Feeling that a better way could be found, other engineers studied alternate approaches and finally proposed a scheme for generating d.c. gyro torquing voltages scaled according to width-modulated pulses linearly related to computer word length. This approach appeared to hold promise of an accuracy of at least 1 part in 4000 (0.025%), which was specified for two of the required eight signals (six for the inertial subsystem; two for the cockpit display system). The pulse width modulation/demodulation method also appeared to require far less hardware than would the digital servo technique because of the elimination of heavy electromechanical components.

Skeptics were quick to point out that the specified precision would be impossible to obtain in view of errors inherent in pulse-width modulation, delays and rise times in the precision switch, switch offset voltage, reference supply voltage, filter capacitor leakage and stability, filter lags, drum speed variation, and signal line ground currents.

Undaunted, the advocates of the new method pressed ahead, conducted detailed studies and laboratory investigations to nullify all objections and verified the complete feasibility of their proposed scheme.

Now functioning as part of a tactical data system installed in a carrier-based aircraft, this eight-signal navigation buffer is packaged on five 3" x 3" cards and two small assemblies. Weight and volume are about one-fifth of that required for a digital servo type of buffer. More recently, new packaging techniques have enabled reduction of the buffer unit by an additional 40% to two cards and two assemblies without degrading accuracy.

Litton management recognizes the value of results stimulated by healthy controversy. Security and proprietary restrictions preclude our discussing current activities, but new programs offering many new technical challenges are now being conducted. And Litton continues to encourage an environment in which engineers can propose and pursue other than safe approaches to problems. If you’ve been frustrated in your attempts to follow through on new approaches to digital data handling and display functions, write Harry E. Laur, Litton Systems, Inc., Data Systems Division, 6700 Eton Avenue, Canoga Park, California; or telephone Diamond 6-4040.

An Equal Opportunity Employer

DATA SYSTEMS DIVISION
LITTON SYSTEMS, INC.

A DIVISION OF LITTON INDUSTRIES
Programming Systems Design
Study and formulate new data processing systems for scientific and commercial applications.

Programming Languages
Develop generalized programming languages using experience with machine oriented languages such as SAP, problem oriented languages such as FORTRAN and COBOL.

Design Automation and Product Test
Develop programs that will assist engineers in design of equipment that will simulate and test new products for customer applications.

Scientific Programming
Apply mathematical and computer techniques to the solution of engineering and scientific problems.
The above areas require a minimum of two years experience in programming preferably with large-scale systems, and the ability to assume a high degree of technical responsibility.

Creative Programmers
Professionals who wish to participate in advancing the state of the art, with experience or training in:
- Compiler Writing
- Automatic Programming
- Artificial Language Construction
- Non-Numerical Mathematics
- Symbolic Manipulation
- Game Playing
- List Processing Techniques
- System Design
- Language Analysis
- Information Retrieval
- Artificial Intelligence
- Operations Research
- Symbolic Logic

Communications Engineers
Experienced in Telegraph Systems, Data Transmission, Switching Systems, Transmission Systems, Communications Planning, to work on the development of new large-scale, communications based data processing systems for unique business and industrial applications.

The above positions are only a few of many openings we are attempting to fill with our client, a leader in the data processing field (locations on East and West Coasts). If you are a professional engaged in the fields of Electronic Data Processing, Operations Research, Mathematical Sciences and the Management Sciences, please submit complete resume with salary requirements, current salary and geographical preferences.

All inquiries are treated confidentially. Fees and relocation expenses paid for by client company.

*DATA MANAGEMENT...Recruiting Specialists for Data Processing and Computer Personnel Exclusively.*