Welcome to Burroughs “family”

On behalf of your new colleagues, I am pleased to welcome you to the Burroughs organization. We hope you share our enthusiasm about the merger and our belief for a very rewarding relationship.

I think you will agree that our two companies fit together very well and enhance each other’s operating strengths. This synergism extends to our products, our research and development efforts, and service forces. With our combined strengths, we have an organization that can vigorously move forward in all areas vital to success in our highly competitive industry.

The contributions of W.R. Blumenthal and Memorex also represent opportunities for the men and women of our company. The merger makes us the second largest information processing company in the world with combined revenues approaching $5 billion in 1982. The size and strength means greatly expanded career opportunities for you.

Clancy Spangle and your own management team will continue to direct Memorex’s operations. The respect that your organization and products enjoy throughout the world, and most certainly here at Burroughs, makes me confident that we can work well together as a team toward our mutual and respective goals.

I am convinced that this joining of forces marks the beginning of what could be an exciting, rewarding period for all of us.

W. Michael Blumenthal

Burroughs traces founding back nearly 100 years


The Early Years

In its first ten years, the Company grew to include a factory and office staff of 65 employees and three salesmen in the field. In 1895 Burroughs Adding and Registering Company, Limited of Nottingham, England was established, and three years later the Company’s first manufacturing facility outside the U.S. was also established at Nottingham.

William Seward Burroughs, who had retired from active participation in the Company because of ill health, died on September 14, 1899.

In 1904 the Company moved to Detroit where it built a plant of 70,304 square feet on what was formerly a cornfield. There at the city’s northern limits, the Company grew and prospered. Additions were made to the first factory in 1905, 1906, 1909, 1910, and 1916.

In the 1920s the original plant was totally renovated and converted to office facilities. Today the site is occupied by Burroughs World Headquarters.

Growth of the Corporation

The Company was renamed the Burroughs Adding Machine Company in 1905. Dr. William’s annual employment rose from 183 employees in 1890 to more than 7,600 machines; 4,000 of which were built in the U.S.

In 1910 Burroughs introduced the first substracting machine, regarded as a major step forward in the field of bookkeeping.

The Norden bomb sight was introduced in the 1920s. By 1925, the Burroughs product line had grown to include 450 standard models of manual and electronic calculators, bookkeeping machines, and typewriters.

The Turning Point—World War II

The course of Burroughs growth and development began to change significantly with World War II. The Company cooperated in the National Defense Program as a significant element. Burroughs machines were restricted to the needs of the Army, Navy, lend-lease program, and war contractors.

In 1944 Burroughs was awarded an Army-Navy “E” for outstanding achievement in the production of war material, principally the Norden bomb sight. This program made accurate, high altitude bombing possible, and was considered by some military authorities as the single most significant action in shortening the war.

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Burroughs now the world’s second largest DP Company

Burroughs organizational structure consists of operating groups, corporate units with specialized responsibilities and wholly-owned subsidiaries, all under the coordination of the Corporate executive office and staff.

The Company markets and supports its products through more than 1,500 offices worldwide, and operates research, engineering and manufacturing centers in nine countries, plus software development centers in five countries.

Following are summaries of the responsibilities and activities of the operating groups, Corporate units and wholly-owned subsidiaries.

Business Machine Group

The Business Machines Group markets data processing systems and equipment and provides customer support services throughout the United States. It operates through four regions, headquartered in Atlanta, Georgia, Roseland, New Jersey, Detroit, Michigan, and Bixen, California, which direct the activities of more than 700 marketing and customer service centers and 36 customer service centers.

International Group

Burroughs’ International Group markets systems and equipment and provides customer support services outside the United States. It operates through a network of 600 offices operated by Burroughs companies and distributors.

The Group, headquartered in Detroit, is divided into two divisions: Europe, Africa and America/Pacific. Sales and service offices are located in more than 120 countries. In addition, Burroughs International Group manufactures and markets products for the overseas markets at 12 plants located in nine countries.

Office Products Group

The Office Products Group designs, engineers, manufactures and markets the Company’s wide range of business forms and supplies, and document encoding, signing and protecting equipment. Headquartered in Rochester, New York, the group operates more than 100 manufacturing and engineering facilities in the United States.

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Memorex’s future is up to you

With the completion of the Burroughs-Memorex merger, Memorex is now a free-standing subsidiary of Burroughs Corporation.

Except for the functions that are required of a publicly held company, Memorex will continue to operate as before. I will continue as Chief Executive Officer of Memorex, and will report to Jerry Jacobson, Vice Chairman of Burroughs, and interact with Dr. Paul Stern, Executive Vice President on manufacturing and engineering issues.

I would like to take the time to thank each of you for being patient and supportive over this period of necessary uncertainty. And, I want to thank all of you for your contribution in helping put Memorex back on the road to profitability. I know that you put extra effort into your work and it has paid off.

With the completion of the merger, however, we must continue these efforts. We cannot look to Burroughs as the solution to our problems; instead, we must maintain our momentum and take advantage of future opportunities in our marketplace.

With the merger completed, and our many improvement programs underway, I feel we are better positioned today to achieve our goals than we have been in recent years. I hope you join with me in looking forward to our new relationship with Burroughs.

I would like to wish you and your families a very joyous holiday season and a very happy New Year.

G. W. Spang

While Burroughs efforts were again directed toward production of commercial business machines in the post-war period, World War II had marked the early beginning of a major turning point for Burroughs. The war had accelerated the development of electronic technology, including the potential for development of electronic technology computer. Beginning in the late 1940s and early 1950s, the Company's growth was in four principal areas: electronic development, computer systems, defense and space programs, and diverse products which supported banking and business applications.

Burroughs Emergent Into Electronics

In the mid-1940s the decision was made to begin a full program of electronic research, and in 1949 permanent development were established near Philadelphia. Three years later, an Electronic Instrument Division was established in that city to manufacture and market scientific instruments and electronic memory components and systems. The new emphasis on electronic products had already resulted in a series of innovative banking and accounting machines, called the Sensamatic, which was produced by Burroughs in the late 1940s. In 1950 the Company introduced the first Sensamatic Accounting machine with electronic technology-a product considered the greatest advance in accounting machines in 25 years. Burroughs Sensamatic and later "Sensotronic"-called the Series F—became the standard of bookkeeping equipment.

In 1951, experiments began at the Company's research and development center, which were aimed at developing a series of computers specifically for business problem solving. In 1954, Burroughs introduced the E 101, a desktop electronic digital computer for scientific, engineering and business applications. Later Series E systems, such as the E 2000, and counterpart Series F systems, became widely accepted and were Burroughs leading products for accounting applications in business, industry and banking well into the 1960s.

Burroughs success in this product area took a further development in the late 1960s with the introduction of the Series TC terminal computers and the Series L minicomputers. The Series TC externally programmed computers were designed for use with on-line data processing systems, and could function as either terminals or independent computers. The Series L was designed primarily as a self-sufficient billing computer, but featured a data communications option which enabled it to operate on-the-line as a terminal computer.

As developments in microcircuity were applied to Series TC and Series L systems in the 1960s and 1970s, the systems evolved from electro-mechanical machines to fully electronic computers.

Burroughs Becomes a Computer Company

In parallel with Burroughs development of electronic products for accounting applications, the Company expanded its capability for development of larger, multipurpose computer systems. The Burroughs memory memory system built in 1952 for ENIAC, the world's first electronic computer, increased the computer's memory capacity almost sixfold, and demonstrated the Company's capability in electronic computation. In 1956 Burroughs acquired the ElectroData Corporation of Pasadena, California, a leading producer of computing equipment, and further expanded the Company's base in electronic technology.

The acquisition of ElectroData, an established company in the computer industry, provided Burroughs with much needed engineering and manufacturing capacity. The same year Burroughs Great Valley Laboratories were opened in Paoli, Pennsylvania.

First Family of Computer Systems

Burroughs development of a full range of computer systems progressed steadily. The Company introduced large-scale Datastar 220 in 1957, the B 251 visible record computer for banking applications in 1958, the B 200 series of small- to medium-scale solid-state computers in 1961, and the B 5000 solid-state modular data processing system also in 1961. The B 5000 was regarded as the most advanced and scientific computer offered by any manufacturer. It departed from traditional concepts of computer design, and featured such pioneering concepts as automatic multi-programming, exclusive use of compiler languages, Burroughs Master Control Program, and "virtual memory."

In 1965 the B 5000 was followed by the more powerful B 5500 system in 1964, as Burroughs began its "family" approach to computer design. In addition to the B 5500, the '500' family included the large-scale B 6500 and medium-scale B 2500 and B 2000 systems introduced in 1966, and the small-scale B 500 systems released in 1968.

The '500' family served a broad cross-section of size requirements in fields such as banking, manufacturing and government. It solidified Burroughs position in the computer industry, and provided the base for the Company to further expand its computer manufacturing capabilities.

Participation in Defense and Space Programs

The early programs to expand Burroughs electronic capabilities also resulted in the Company being awarded numerous government and defense contracts. Burroughs computers were used by the United States Navy in its POLARIS program, and by the U.S. Air Force in the SAGE, ALRJ and BIC菊 continental air defense networks. In 1961 Burroughs was named by the Air Force as hardware contractor for the NORAD combat operations computer complex and data display system. The computer was used to make split-second evaluations of threats to the North American continent, using input from satellites and radar throughout the world.

During this time, Burroughs was also an active participant in the U.S. space program. The world's first operational transistorized computer, produced by Burroughs in 1957, was used in guiding the launch of the Atlas Inter-continental Ballistic Missiles. A later version of this computer guided every launch in the MERCURY and GEMINI programs of manned space flights. With the completion of the first space program, introduced in 1965 between GEMINI VI and VII, Burroughs guidance computers had handled more than 300 successful missions without failure, error or delay.

That year, the Burroughs computer that had guided the first Atlas missile was presented to the Smithsonian Institution by the U.S. Air Force, and another of the first ground guidance computers was installed in the Air Force Space Museum at Cape Canaveral, Florida. The last of 17 such Burroughs guidance computers was retired by the Air Force in 1978 after completion of more than 400 successful missions.

The 1970s—Burroughs Becomes an Information Management Company

In the late 1960s, Burroughs began the first phase of a major, long-range capital expenditure program for the expansion of its worldwide production resources. Five new factories were opened that year, including two in the U.S. and one each in Belgium, Brazil and Mexico. More facilities followed in the 1970s, as the Company's production centers increased from 36 in 1966 to 61 in 1976.

The 1970s saw the further merging of Burroughs electronics and computer development efforts of the previous two decades, and the Company's emergence as a leader in the computer industry. The decade also marked Burroughs entry into other areas of information management, principally office automation. The Company used its growing resources to develop several complete new families of computer systems—from minicomputers for data preparation and document them with a full range of related software, products, computer peripherals, terminal and data communications or systems, and data management equipment.

Burroughs Series TC and Series L electronic systems, which had been introduced in the late 1960s, were continually refined for various business applications. These refinements along with continued electronic developments led to the introduction of the B 80 Series of miniature-scale computer systems in 1976. The B 80 brought the power and memory capacity of much larger computers to the small-scale computer market, and these features were further evident in the B 90 Series announced in 1979.

Burroughs also continued to place strong emphasis on the development of larger computer systems during the 1970s. Following the successful 1970 introduction of the "500" family of computers, the "700" family was introduced between 1971 and the end of 1975. The "700" family considerably extended Burroughs coverage of the data processing market from the base established with the '500' family.

In late 1975 Burroughs began introducing the "800" family, which typically occupies only half the space and requires 50 percent less power to operate than the "800" family members. In 1979 Burroughs announced the first models of the "900" family of systems. The "900" models, which typically occupy only half the space, are recognized worldwide as leaders in their category, based on their performance in applications ranging from banking and finance, telecommunications, health care, education, government, transportation and many others.

Burroughs expansion in data processing was paralleled by its entry into the office automation market. The Company entered the facsimile communications market in 1975 by acquiring Graphic Sciences, a domestic producer of equipment under the "dex" trademark, and entered the word processing market one year later by acquiring RediComm Corporation.

The acquisition of the assets of Century Computer Corporation in 1979 added an optical character reader to the computer systems-from the growing range of office automation products which have become an increasingly important segment of Burroughs "total information management" capability.

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Burroughs history

In June of 1981, Burroughs carried office automation a step further with the introduction of the OFISSTM Information System. OFISSTM brings the benefits of office automation to managers and professionals as well as the clerical staff. A key element in OFISSTM is Burroughs' new OFISfile, a unique device that houses the equivalent of up to 80,000 typewritten pages and can locate a specific letter, report, document, or group of related documents in seconds following simple English-language commands. OFISSTM also allows the manager to communicate and share this information with others electronically.

In 1981, Burroughs strengthened its capability in meeting the growing demand for information management systems, which totally integrate hardware, software, service and support with the acquisition of System Development Corporation (SDC) of Santa Monica, California. SDC is a leading information systems company serving businesses and government agencies throughout the world.

Today, with the merger of Burroughs and Memorex, Burroughs Corporation is the second-largest information processing company in the world. With more than 67,000 employees worldwide, Burroughs is far cry from the American Arithmometer Company, the 100 years ago.

SDC plays part in space shuttle

The success of America's first space shuttle mission earlier this year had special significance for a number of employees at System Development Corporation (SDC), a Burroughs subsidiary. These employees were involved in the developmental stages of the shuttle program. In fact, SDC received special recognition from the National Aeronautics and Space Administration (NASA) for their contribution to the program.

The development work was performed at NASA's Stidell Computer Complex in Louisiana, which SDC manages, and at SDC's Hampton/Langley site in Virginia.

At Stidell, the work involved processing data on the engineering design and fabrication of the shuttle's external fuel tank. Prior to the launch, SDC also processed data obtained from single and multiple shuttle engine tests for various NASA contractors.

The work at the Hampton/Langley site was in support of tests on the heat shielding tiles that were essential to the shuttle's safe return from space. The work involved transcription and analysis of data during the tile cycle fatigue tests.

System Development Corporation adds strength to Burroughs

Among Burroughs' latest steps to strengthen its capability to meet the growing demand for information management systems which totally integrate hardware, software, service and support, was the acquisition of System Development Corporation in 1981.

Headquartered in Santa Monica, California, SDC supplies computer-based systems, products and services to businesses and government agencies throughout the world. The company has major offices in each of the U.S. and abroad, and employs 3,800 people.

Established in 1965 as part of the Rand Corporation, SDC was incorporated as a separate, non-profit corporation to assist in the design, development and implementation of a large-scale, computer-based air defense system for the U.S. Air Force. The result was the SAGE ( Semi-Automatic Ground Environment ) command and control system.

SDC completed the transition from a non-profit corporation to a for-profit corporation in the late 1960s as it became a total system contractor, integrating hardware and software in turnkey systems. Since then, it has continued as a major contractor for the U.S. Government while continually developing and building its commercial product line and markets. Approximately 41 percent of SDC's business now stems from the Department of Defense, 38 percent from other government agencies, and 21 percent from private industry.

SDC's business involves developing electronic systems that help people in government, defense, science, industry and commerce with the job of managing information. The company's range of activities includes analyzing complex information management problems, designing problem-solving software, integrating computer hardware and software into functional systems, training people to use new systems, managing and operating computer systems for customers, and providing advanced data processing, data base and data communications services to a variety of users.

SDC also conducts research and development programs in such areas as networks and distributed processing, system security, signal processing, and office automation technology.

Rancho Bernardo facility develops proprietary VLSI

The computer is generally considered the electronic invention of the current era, but the microcircuitry that forms the nucleus of the computer is considered by many experts to be the real marvel of electronic technology.

This tiny silicon chip, often referred to as an integrated circuit or a microprocessor, gave the nation's first space shuttle a safe return from space. The computer's ability to perform millions of calculations and store data for later retrieval is a result of the incredible advances in miniaturization made in the microelectronics industry.

The circuit's maze of thousands of semi-conductor devices (e.g., transistors) on that chip. Just as remarkable as the finished product is the process through which they are manufactured.

At Rancho Bernardo, the production of microcircuits begins with a logic diagram which, depending upon its complexity, may take from a few months to several years to finalize. Utilizing computer-assisted design (CAD) and layout techniques, the circuit's maze of thousands of transistors and diodes is drawn 500 times larger than its eventual one-quarter-square-inch size.

This massive diagram is then divided into sections and each element of the circuit is checked for accurate position and size.

The computer was prepared to define and transfer the pattern of each of several layers of circuitry onto the silicon wafer. For each layer, a five-inch reticle containing a perfect photographic image of the layer of circuitry is generated. The reticle reproduces the pattern on the wafer in its actual working size, and a "step and repeat" photographic process is used to fill the entire area of the wafer with copies of the image.

Separate reticles are required for each step of the production process: isolating the chips from each other on the wafer, defining the "gates" which control the flow of electronic signals; isolating contact points between layers of circuitry; and overcoating the entire wafer with a protective layer of silicon dioxide.

Although each photographic image is two-dimensional, the photoengraving process enables layers of either conductive or insulative material to be alternately implanted, masked and removed, resulting in a three-dimensional product only a few micrometers thick.

Although the circuits appear simple to the naked eye, each logic chip may contain tens of thousands of elements imbedded in its surface. These memory chips may now effectively store 64,000 bits of information.

Burroughs has begun building a worldwide network of computer-based resource control centers to speed response to customer service calls. Through telephone "hot lines," Burroughs field engineers can diagnose a system on-line.
“Office of Tomorrow” around the corner with OFIS™

Burroughs Corporation took a giant step toward the “Office of Tomorrow”—a new approach to the paperless or automated office—when it introduced its OFIS™ Information System. Developed by Burroughs' Office Systems Group in Danbury, Connecticut, the system supports increased office productivity through its advanced electronic filing and communications abilities and the latest methods of creating, displaying and processing office information.

Designed for managers and professionals as well as clerical personnel, OFIS™ 1 consists of the following principal components:

- **OFISfile**—a unique storage device that houses the equivalent of up to 80,000 typewritten pages and can locate any specific letter, report, document or group of related documents in seconds by following simple English-language commands.
- **OFISdirector**—an information processor that lets system components communicate with each other, handles electronic mail and provides executives with personal productivity tools for scheduling meetings and writing memos.
- **OFISwriter**—a word processor for preparing, editing and communicating text.
- **OFISreader**—an optical character recognition page reader which scans typewritten pages and transfers them to the OFISwriter, where they can be revised, or to the OFISfile, where they can be accessed.
- **OFISterminal**—an inquiry and display station used with OFISfile, and where they can be accessed.
- **OFISworkstation**—a keyboard and display unit used with the OFISdirector.

OFIS™ 1 is a totally modular system. A user can install a complete system, or start with a few basic components and add to them later. The system's compatibility with many other makers of office equipment protects users from unnecessary "start over" costs.

What all this means to the user, especially if he or she is in the managerial level, is that he or she will have more time to concentrate on strategy and intellectual work as the routine information distributing and processing time is cut down to micro-seconds. It will also provide the manager with more pertinent and timely information to assist decision-making.

"Ironically, while television soap operas are transmitted by satellite, vital business information too often travels at the speed of the mall cart," says Roger W. Johnson, OSG president. "And then, it can't be located if your secretary is out to lunch. In contrast, automated systems like OFIS™ 1 system, make information available for the asking."