THIRTY-NINE YEARS AT LITTLE ROCK

OUR HISTORY AND OUR HERITAGE

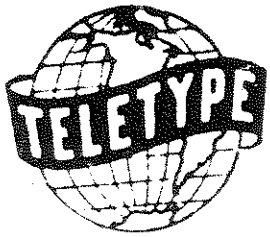
IMPORTANT PRE-BELL SYSTEM DATES

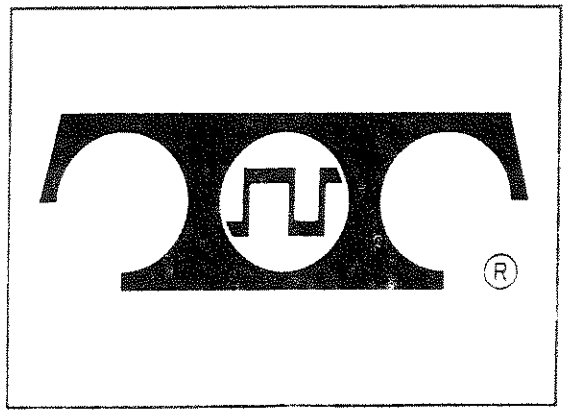
From Gray & Barton to Western Electric to Bell Telephone Co.

1869 - Gray & Barton formed
1872 - Gray & Barton becomes Western Electric
1876 - Alexander Graham Bell invents telephone. Bell forms Bell Telephone Co.
1881 - Bell Telephone Co., incorporated as American Bell Telephone Co., acquires Western Electric.
1882 - Western Electric opens its first international subsidiary & factory in Antwerp, Belgium.
1885 - AT&T subsidiary formed with Theodore N. Vail as president.

From Morkrum Company to Teletype Corporation

1907 - Morkrum Company was incorporated
1908 - First test of an experimental printer on a telegraph line
1910 - First commercial sale of teleprinters to Postal Telegraph System
1913 - High vacuum tube amplifier invented
1915 - Transcontinental service begins
1916 - Loudspeaker invented
1918 - Morkrum Company moved into its own building at the corner of Southport & Wrightwood avenues.
1925 - Bell Labs opens in New York City. AT&T's international business sold.
1928 - Morkrum Company name changed to Teletype Corporation

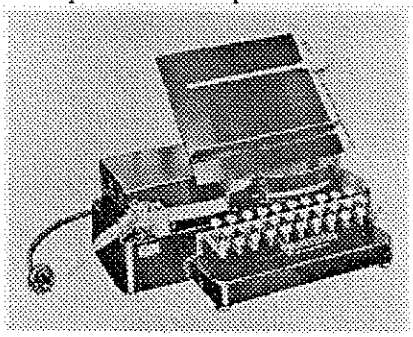




TELETYPE CORPORATION Product Line in 1930

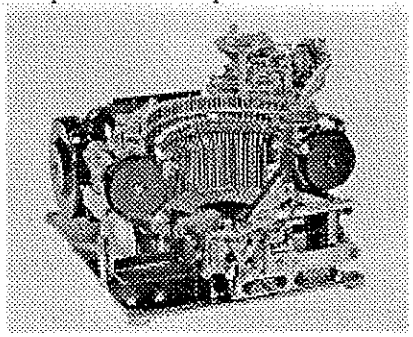
Teletype Corporation entered the Bell System on October 1, 1930. From that point on, advances in its products were directed to the communication needs of the Bell System, as well as its other commercial customers. From very early models to the latest high speed units, Teletype@ equipment has met a variety of business, as well as governmental applications.

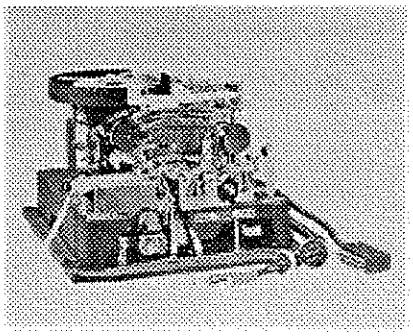
Wheatstone Perforator converted Morse Code into perforated tape

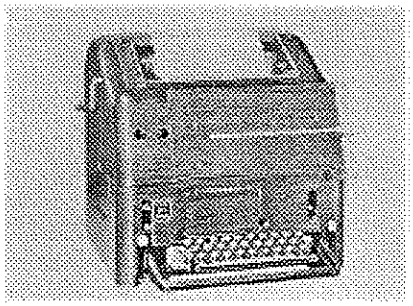


Model 14 Printer (FP) used to type data on tape

Model 14 Typing Reperforator (FRP)-first model that punched and printed on tape







Model 15 Page Printer.
Above Center: Model 14 Reperforator Transmitter Distributor (FRXD) - same as FPR, but could send message on line.

Employees converting Morse Code to perforated tape and transmitting information.

TELETYPE - THE WAY WE BEGAN

The first data terminal was invented by some caveman who decided to beat on a hollow log to signal his friends. The technique of encoding messages transmitted by sound waves was refined over the ages and with the harnessing of electricity, communications took its first major step forward. The telegraph was invented.

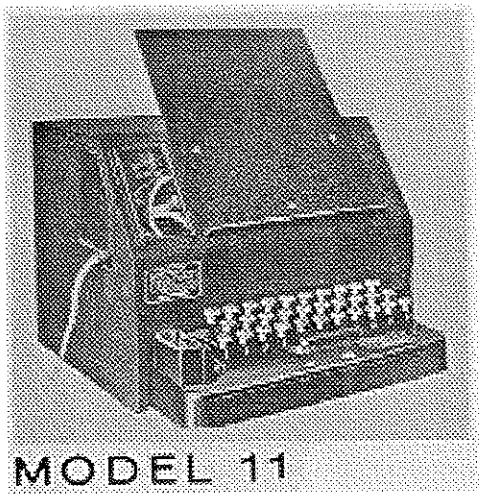
On May 24, 1844, Samuel Morse sent a telegraph message from Washington to Baltimore on the first electrical data set, over the first data line, using the first conversational electrical code. Many other experiments in printing telegraphy were conducted over the next thirty years, but in 1874, Emil Baudot, a Frenchman, developed a printing telegraph system that was widely used in Europe.

In 1902 in Chicago, Frank Pearne, a young electrical engineer and Charles Krum, a distinguished mechanical engineer began experimenting with printing telegraphy and were backed by Joy Morton of Morton Salt. Their overall progress was encouraging and they incorporated in 1907 under the name Morkrum Company. Their first working model was placed on trial for the Chicago and Alton Railroad over a 150 mile span between Chicago and Bloomington. As telegraph operators and railroad men looked on in amazement, these devices sent and received written messages over wires which had previously carried only the sound of telephone voices or the code of the telegraph operator. Here was a practical device - the teletypewriter- which did for the written word what the telephone did for the spoken word. The test was highly promising but there still remained the major obstacle of synchronizing the sender and receiver. This problem was corrected by Howard Krum, son of Charles Krum, who joined the firm in 1909 and developed the "start-stop" principle.

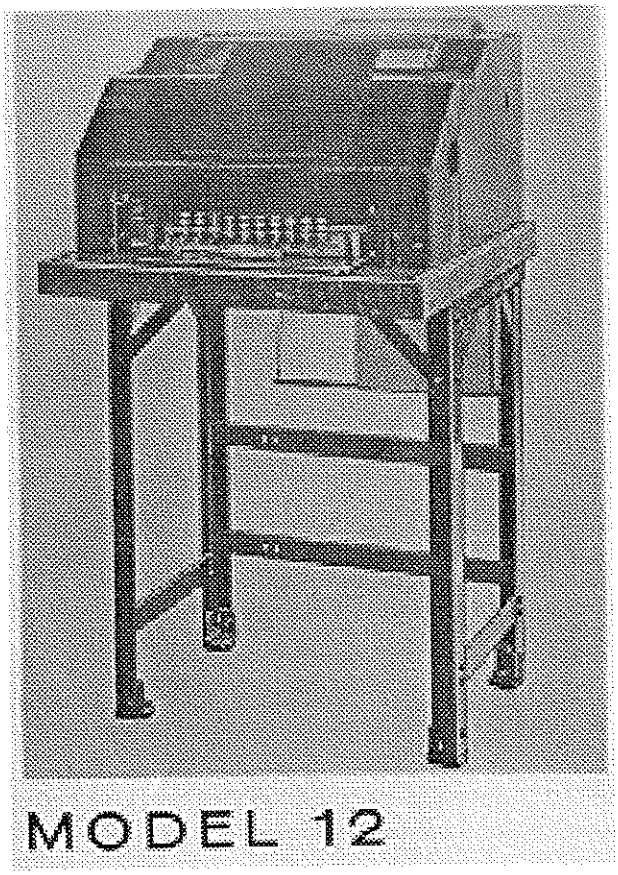
The first commercial sale of the young company was an installation between New York and Boston for the Postal Telegraph System. A few years later, the Associated Press adopted Morkrum equipment for simultaneous transmission of news information to competitive newspapers in the New York area.

In 1918, the Morkrum Company expanded to new quarters on Chicago's North side and with 500 employees began production of the Model 11, their first commercial teletypewriter. At this time, printing telegraphy was limited to commercial telegraph and railroad uses, but in 1922, the Model 12 was marketed which opened the doors to general

business uses. Three years later, model 14, a typebar tape-printer was developed for heavy use in the telegraph market.



MODEL 11



MODEL 12

The Morkrum company merged with Kleinschmidt Electric in 1925 to become the Morkrum-Kleinschmidt Corporation, which proved to be a cumbersome name, so it was changed to TELETYPE CORPORATION in 1928. The Teletype Corporation was purchased by AT&T (American Telephone and Telegraph Company) in 1930 and became a wholly-owned subsidiary of the Western Electric Company. This was the same year that Model 15, type-bar, page-printer with stationary platen was introduced. This machine soon became the "bread and butter" line of Teletype, reaching its peak output during World War II. In a war that would be won by outproducing the enemy, swift, written messages were needed to avoid errors in coordinating war production. Also, in long-distance conferences, teletypewriter messages could be "scrambled" more easily than telephone voices. Many Model 15's are still in operation today (1977). Because of the wartime challenge, Teletype's production soared. In 1944 production

was fifteen times greater than in 1939. That year the men and women of Teletype received the Army-Navy "E" Award for their production record.

In 1951, Model 28, a lighter-weight, faster, more versatile, quieter page printer was developed and dominated the "message market" during the 1950's. As the Chicago location bulged at the seams with production, it became necessary to find more manufacturing space.

The Teletype Corporation embarked on an extensive survey across the country looking for a good location in which to expand its manufacturing facilities for its fast growing business. They were so impressed with the Little Rock environment and with the community enthusiasm, they decided on Little Rock as the best location for their new facility.

An office was opened in June 1957 on Third Street in downtown Little Rock to hire the skilled, semi-skilled, trainee and office personnel needed to open a new manufacturing facility. In September of that year, manufacturing operations began on sub-assemblies for the Model 28 with 150 employees in a pilot plant of 75,000 sq. ft. located at Patterson and 65th Streets.

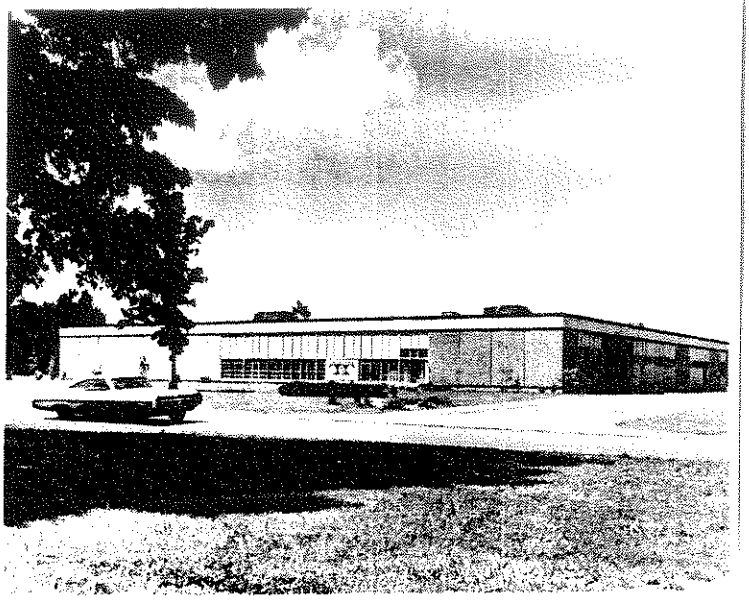
In December of 1966, construction began on the 160 acre site in which we are located today. In 1968 this modern facility of 288,000 sq. ft. was completed and the Little Rock location had grown to 760 employees. Once moved into the new building, we assumed responsibility for the assembly of the LPR, LESU, Call Control, Miscellaneous Base, LK and LAK. It became obvious that more space would be needed in the future due to the production expansion so an additional 325,000 sq. ft. was built and occupied in 1971. The Cable Shop was relocated in the new space. Later we assumed Circuit Card manufacturing and all of the Cable manufacturing for the Teletype Corporation.

With the demand for more speed, the electro-mechanical models which Teletype had always manufactured could not respond to this need, so 40-type units were born in the early '70's. In the Fall of 1974, Little Rock began manufacturing the printer for these units and eventually assumed the manufacture and assembly of the majority of 40-type products.

Note: This article is from "Teletopics" published April, 1977.

1957

The building where it began
at Little Rock on 65th Street.



The newspaper add has
the original Teletype Logo.

ARKANSAS DEMOCRAT –
Sunday, March 3, 1957-Monday, March 4, 1957

TELETYPE CORPORATION

MANUFACTURERS OF PRINTING TELEGRAPH EQUIPMENT

is pleased to announce its plans to begin manufacturing operations in Little Rock next August.

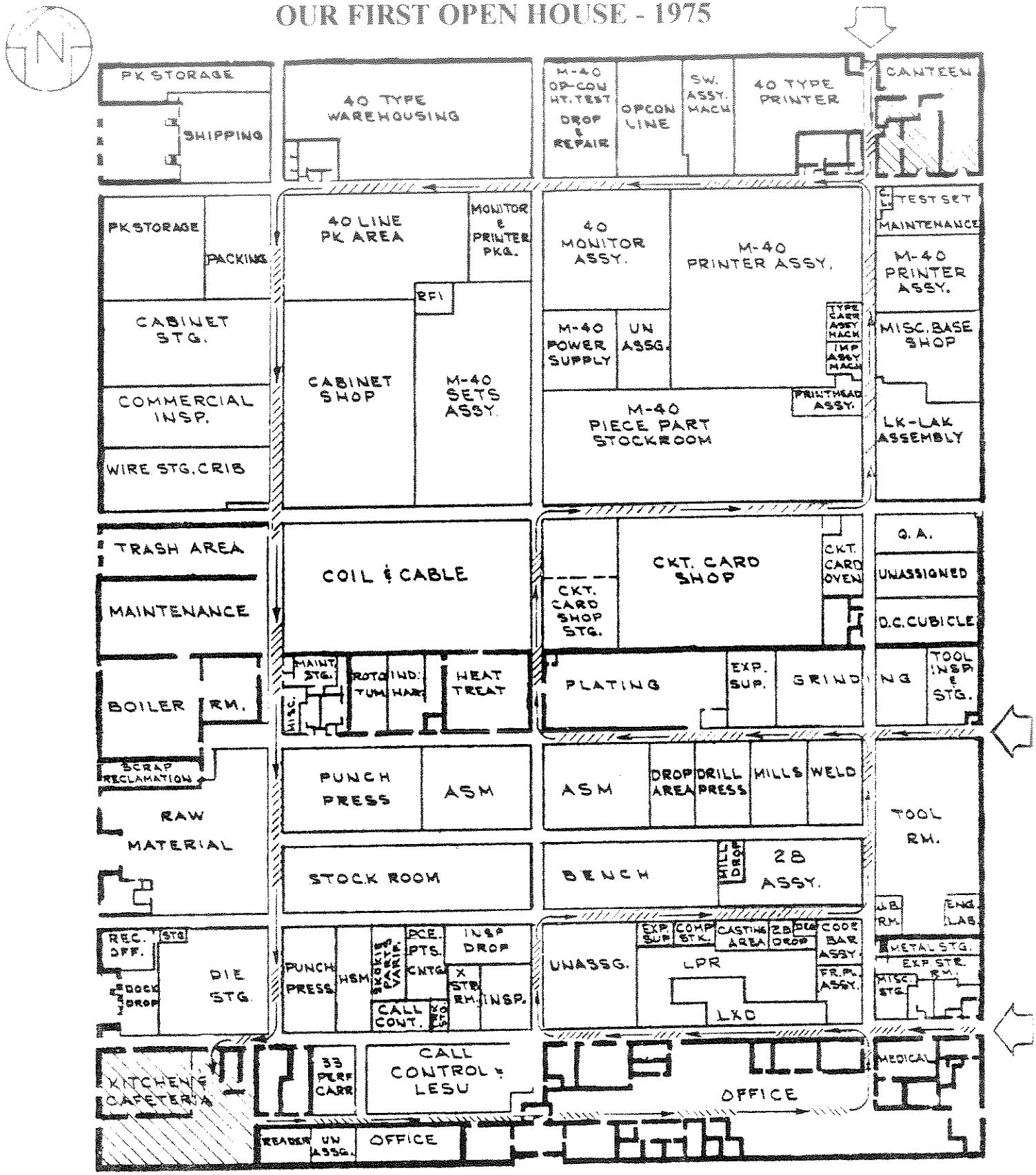
Announcement of plans for the opening of its employment office will be made in this paper by early summer.

TELETYPE

Teletype Corporation
1400 Wrightwood Avenue – Chicago 14, Illinois

A Subsidiary of Western Electric,
Manufacturing Unit for the Bell Telephone System

BUILDING FLOOR PLAN FOR OUR FIRST OPEN HOUSE - 1975



TELETYPE BUILDING TOUR GUIDE

ALL GENERAL SAFETY RULES WILL APPLY.
ALL CHILDREN SHOULD BE ACCOMPANIED BY AN ADULT DURING THE TOUR

DRIVE WITH SPECIAL CAUTION ON THE PARKING LOT.
NO CAMERAS PLEASE.
SMOKING IN CAFETERIA ONLY.

EVENTS IN THE HISTORY OF TELETYPE CORPORATION

1930 - Teletype Corporation purchased by AT&T and became a subsidiary of Western Electric Company (October 1).

1932 - Model 15 page printer helped to inaugurate AT&T 's Teletype writer Exchange System - TWX - establishing central switching exchanges through which subscribers could communicate by teleprinter with each other.

1930s - Message relaying developed for extensive networks involving many machines. Instead of requiring wire lines between every printer in the network, message centers accepted traffic and relayed it at a practical time.

1940 - First "torn tape" method of message relaying installed - attendant tore off each message as it came in and fed it into a transmitter by hand.

Some post-war uses:

CAA weather reports - development of Sequential Control (SECO) for automatic reporting from 600 outlying locations

DEW line communication

Red Cross "Amcross" system

National Police Teletypewriter Network

1950 - Purchased T1 building on Touhy Avenue in Niles, IL (115,000 square feet).

1954 - Purchased Fullerton West building in Chicago (376,000 square feet). Model 28 available for commercial sale - featured a moveable typebox instead of the platen...ran at 100 words per minute!

1956 - Purchased a second plant referred to as T2 in Niles (52,000 square feet).

1957 - Purchased a tract of land in Skokie, adjacent to the original Touhy buildings. Construction of the present 1,300,000 square foot complex began in 1958. Also purchased a 160-acre site in Little Rock, Arkansas. Construction of present 653,700 square foot building began in 1966.

1961 - Delta Airlines test of developmental line switched teletypewriter service.

1963 - 176 Project - a combined Bell System effort. Teletype Corporation developed high speed electronic equipment that later became the standard product line.

1969 - Opened first product service center - organization has grown to include 76 locations.

1973 - First sale of Model 40 printer and monitor

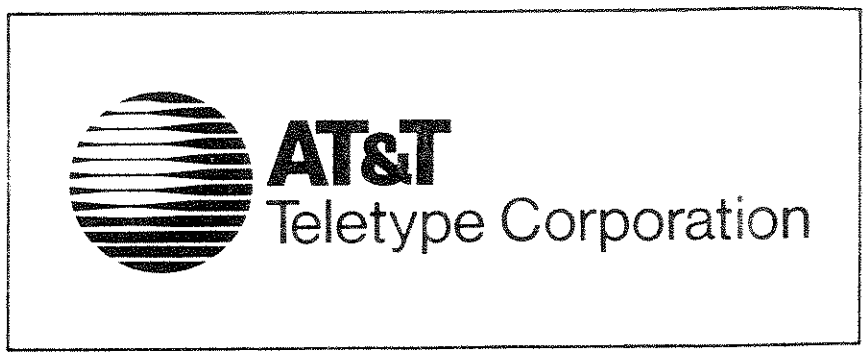
1976 - First sale of Model 43 teleprinters

1979 - First sale of Model 4500 family of equipment

1980 - Fiftieth anniversary in the Bell system

1984 - Teletype Corporation becomes AT&T Teletype Corporation

1987 - AT&T Teletype corporation ceases to exist as a separate corporate entity.



LITTLE ROCK FACILITY HISTORICAL HIGHLIGHTS

1957 - (June) Teletype Corporation of Skokie, Illinois opened an office of Third Street to hire people for its new Little Rock manufacturing plant.
(September) Manufacturing operations began with 150 employees making sub-assemblies for the Model 28 at a 75,000-square-foot pilot plant at Patterson and 65th Streets.

1966 - (December) Construction began on its current 160-acre site at Scott Hamilton Drive and Interstate 30.

1968 - The new 288,000-square-foot facility is completed. Approximately 760 employees were producing Model 28/35 perforators, electrical service units, and bases and keyboards for the Model 30 call control.

1971 - 325,000 square feet was added to the facility.

1974 - Began manufacturing the Model 40 printer and eventually the majority of Model 40 products featuring video displays.

1976 - Started manufacturing the keyboards for the Model 43 product line.

1981 - Introduced the unitized keyboard. Significantly reduced manufacturing costs and improved efficiencies.

1983 - Introduced the System 5000 intelligent data terminal family and T300 high speed printer.

1984 - (January 1) Breakup of AT&T and the Bell Telephone Co.

1984 - Teletype Corporation becomes AT&T Teletype Corporation.

1985 - Introduced Starlan local area network products for linking groups of computers.
Introduced a new generation of business communication terminals, the 600 family of terminals featuring multitasking and graphics capabilities.
Introduced the AT&T 6500 Multifunction Communication System, consisting of modular controllers, data terminals, and printers, which can link together computers of different types (synchronous and asynchronous) and makes (including AT&T 3Bs, 3270 mainframes and VAX computers).

1986 - Select Ordering System developed by Purchasing Organization. SOS is a computerized order system that streamlines ordering procedures and cuts costs and manufacturing lead times.

1987 - Little Rock Works becomes part of the larger AT&T Company. AT&T Teletype Corporation ceases to exist as a separate corporate entity.
Little Rock Works hosts "AT&T for Arkansas Day." More than 125 Arkansas vendors tour the plant and receive information on AT&T quality standards and vendor requirements. Part of the AIDC's MatchMaker Program, the day-long event resulted in establishing relations with additional Arkansas suppliers.

1988 - General Manager Larry Fetherman introduces Little Rock Opportunity, a strategic plan that keeps employees informed about new technologies and factory changes and trains employees for 1990s skills through a series of programs.

1989 - (July) AT&T Computer Systems unveils four new networked computer systems, including two (AT&T 6383/33 WGS Model S and AT&T 6386/SX WGS) that will be made at Little Rock. (One of the two manufactured at Little Rock will also be manufactured by the developer, Intel Corporation).

1989 - PRAISE, an employee recognition and suggestion program, is unveiled. The program is designed to give employees quick recognition for their good ideas. (November) Introduced 730 Multitasking Terminal with Graphics and the 730X terminal, manufactured in Little Rock.

1990 - (April) Memorex Telex Corp. buys substantially all the assets of AT&T's synchronous terminal product business. Agreement calls for Little Rock Works to continue to manufacture synchronous terminal products for at least two years.
(April 19) Little Rock Works observes the 20th anniversary of Earth Day with a tree planting ceremony and the distribution of 4,500 tree seedlings to employees. Little Rock Works was recognized by Region 6 of the U.S. Environmental Protection Agency for sponsoring and "outstanding" Earth Day program--the only AT&T facility or organization to be so honored.
(May) AT&T introduces the Little Rock-made AT&T 6286/EL WGS, the first AT&T personal computer designed and manufactured in-house.
(May) the ETOP Computer Learning Center is unveiled in a ceremony with GM Larry Fetherman, Mayor Buddy Villines and Bob Stander, director of manufacturing, IBEW International.
(June) The AT&T 6386/EL WGS computer, an entry level desktop computer used for stand-alone and networked computing, and the AT&T StarServer E, designed for telecommunications and other applications, are introduced at Comdex.
(December) Little Rock Works received the AT&T Environment Award for being the Company's first domestic CFC-free factory.

1991 - (January) Transferred from Communications and Computer Products Sourcing and manufacturing Division (C&CP) to Computer Systems (CS).
(November) Due to the merger of AT&T Computer Systems and NCR, Little Rock Operations Center transferred from Computer Systems (CS) to Communications Products Sourcing and Manufacturing division (CPS&M).

1992 - The AT&T Smart Card, an intelligent credit card size product containing microprocessor and circuitry, began to be manufactured at Little Rock in the first quarter.

1993 - Began manufacturing cellular telephones at Little Rock.
Two types of Smart Card Readers (5B and 20A-1) began being produced at Little Rock. Each version of the reader is designed to read information stored in the smart cards that are produced at Little Rock.

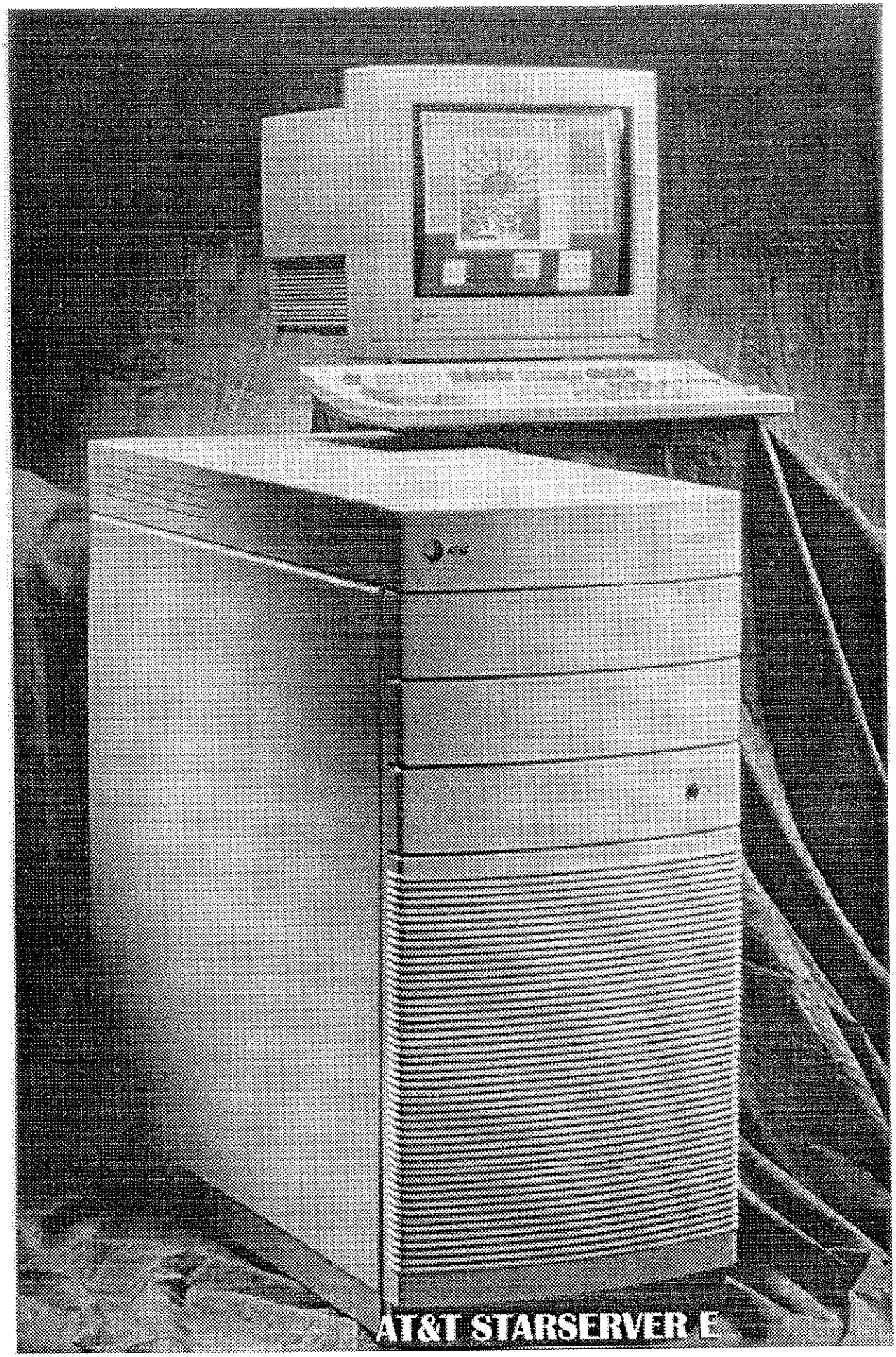
1994 - AT&T Custom Manufacturing Center at Little Rock became part of the facility network that supports AT&T Custom Manufacturing Services business unit.

1995 - (September 20) AT&T Chairman Bob Allen announces that AT&T will split into three companies: a systems and technology, a long-distance and a computer business. Little Rock manufacturing becomes part of the systems and technology company.

1996 - (February 6) Lucent Technologies name is announced.

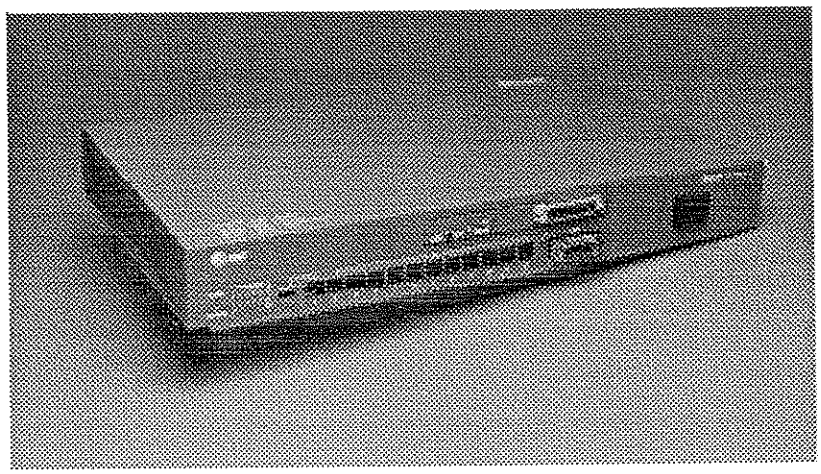
1996 - (August) Plant stops manufacturing and closing procedures begin for CMS Little Rock.

Note: These dates were taken from company publications.

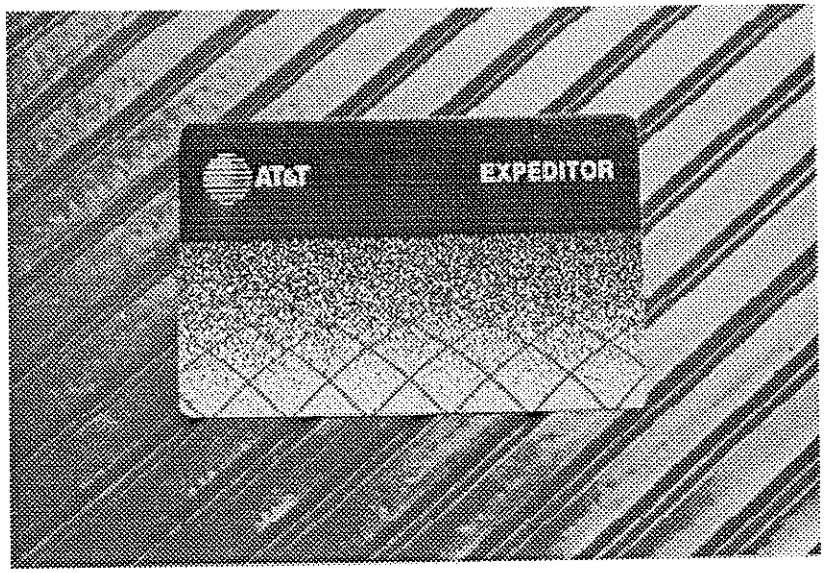

AT&T STARSERVER E

The 6286 WorkGroup System is a high-speed, IBM PC AT-compatible personal computer based on the Intel 80286 microprocessor. A small, low-profile machine, the 6286 WGS has high-end features such as 12 MHz CPU performance and fast hard disks.

STARLAN 10 NETWORK SMARTHUB
Used for interconnecting
computers on a LAN



The AT&T SMART CARD
Production began in 1992 on an
intelligent credit card size product
containing microprocessor and circuitry



AT&T Custom Manufacturing Center-
Little Rock

7600 Interstate 30
P.O. Box 8912
Little Rock, AR 72219-8912
501 562-4411

WHY DID FALCON SALE FALL APART?

By Scott Solomon
Staff Writer (This article is from a Greensboro newspaper)

Jim Becher calls AT&T's decision to cancel the sale of its contract manufacturing division near Greensboro "an absolute mystery." Judging by AT&T's insistence on deflecting questions about what sullied the deal last month, it's a mystery that seems destined to remain unsolved.

What is known is that Becher's Blue Ridge Investors Limited Partnership had agreed to provide equity financing for a management buyout of the division, which AT&T dubbed "Falcon."

Leading the eight-member management buyout team was Falcon's aggressive 49-year-old president, Carl Ashby, who had been at the helm of the division since December 1993.

"This clearly would have been one of the top 10 privately held companies in North Carolina, with a fast growth track, a seasoned management team, great facilities and a great position in the market," Becher said. "It would have been a wonderful thing for our community."

Ashby's team had negotiated to buy the division for an undisclosed sum from AT&T and its newly created company, Lucent Technologies Inc.

The Falcon operation, situated at Rock Creek Center east of Greensboro, makes sophisticated electronics such as computer modems and high-security telephones for outside customers, including giant Cisco Systems. The operation's annual sales are about $150 million.

It employs about 450 workers, more than half of them union.

According to Becher, the deal was slated to close March 29. In preparation for the sale, a week before the scheduled closing, AT&T brought in Coopers & Lybrand, an international accounting firm, to conduct a audit of the Falcon division.

Lucent spokeswoman Vicki Gault has declined to detail the findings of the audit beyond saying it revealed nothing out of the ordinary.

Yet for reasons Gault has repeatedly declined to discuss, by March 26 union officials at the Falcon plant were told the proposed management buyout had collapsed.

On March 27, AT&T said publicly that it was unable to reach agreement with Ashby and that it would continue to search for a buyer for Falcon.

On top of that, Ashby and his chief financial officer, Mel Renkey, resigned from AT&T. Ashby said his retirement had been planned for a year and that he

would help run the Hallmark card stores owned with his wife, his sister and her husband.

Attempts to reach Renkey have been unsuccessful.

Ashby said he and AT&T could not come to terms within the deadline they had set.

Becher said he learned of AT&T's decision to call off the deal in a phone call from Ashby on the afternoon of March 27. Becher had to quickly call Blue Ridge investors and tell them not to wire the money, which they had planned to do the next day.

He first described Ashby as "shattered" by AT&T's decision to pull out of the deal then said that might be too strong.

"He has worked for AT&T for most his whole life," Becher said. "He's a young man. He put a tremendous amount of effort and time into this. He did everything right. He did not feel that at the last minute there would be a hitch like this because he had the commitment of the seller all along the process."

Outwardly, at least, Ashby has confessed nothing to indicate he's upset about what happened. He said Tuesday that he looks at the cancellation of the deal as nothing more than a business decision by AT&T. "Some deals go, and some don't" he said. "I have a philosophy. I worry about the things I can change. I don't worry about the things I can't change."

As far as the Falcon operation is concerned, Ashby said Lucent is aggressively seeking a long-term solution that will benefit both its customers and employees. In the meantime, he said, the best thing Greensboro can do is "let time take care of it."

"To continue to try to find things that aren't there and keep speculation going is not going to make that process any easier," he said.

Whatever the reasons behind the collapse of the sale, financing apparently was not one of them. Blue Ridge was to provide equity for the deal, and NationsBank was to finance the debt.

Based in Greensboro, the Blue Ridge Partnership was formed in 1994 when 58 individuals put up a minimum of $250,000 each. The objective: fast-growing Southern Businesses in need of capital.

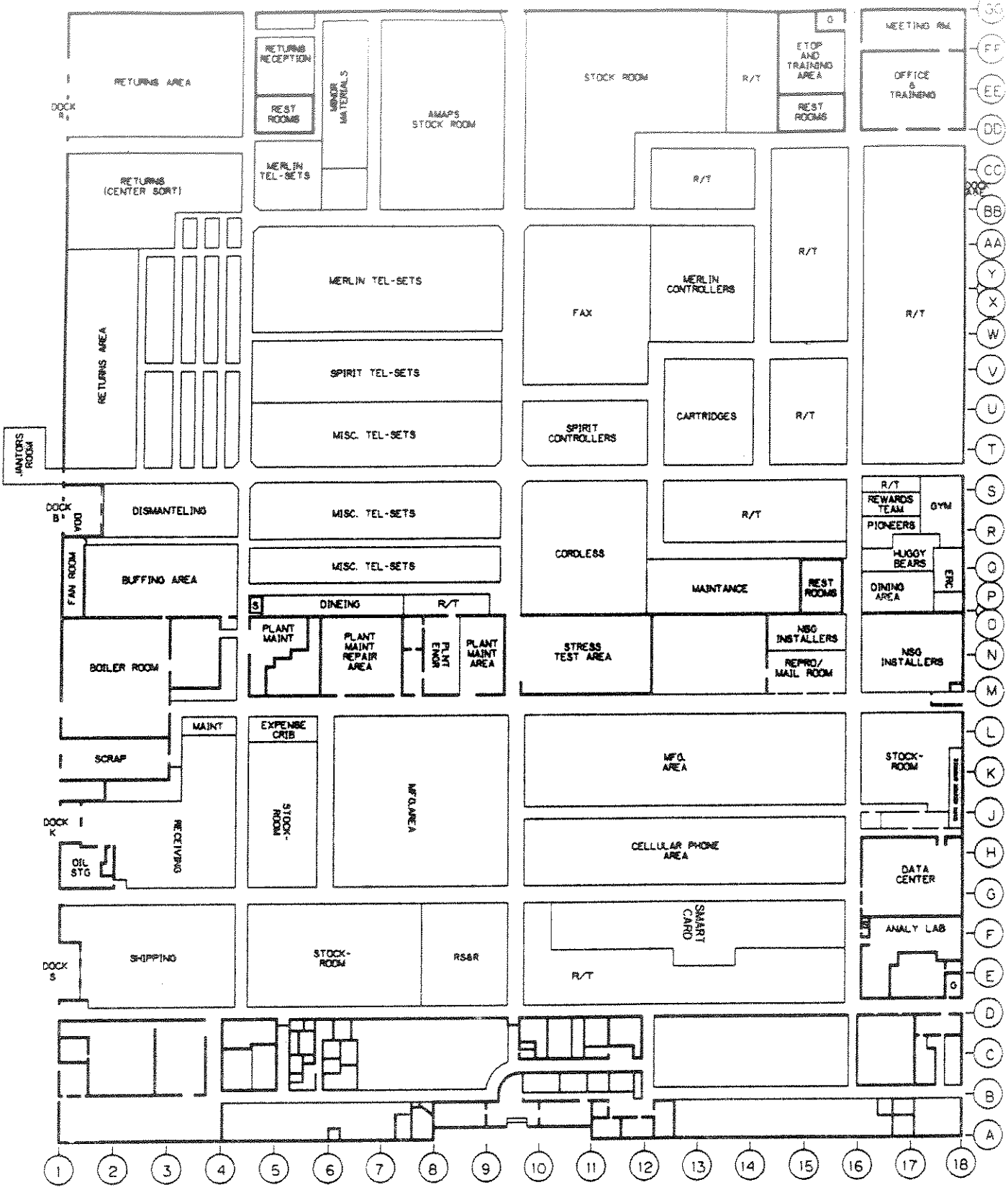
About 85 percent of the money came from the Piedmont Triad, with the rest coming from investors in cities such as New York, Chicago, Baton Rouge, La., and Raleigh. The partnership is an offshoot of the Geneva Corp., a holding company owned by Becher and H. Michael Weaver.

Though it may sound surprising, Becher has not given up hope the sale can be revived. He has telephoned, faxed and written to AT&T to tell the company that Blue Ridge is still interested in striking a deal. AT&T has not responded.

In a letter to Blue Ridge investors, Becher said, "I still believe in phoenix birds." referring to the Greek legend about the animal that lived 500 years, buried itself on a pyre and then rose from the ashes.

"There's still a genuine interest on everybody's behalf to resurrect the project," Becher said. "It's a good company."

Everybody is interested, it seems, except AT&T.



FLOOR PLAN
AT&T LITTLE ROCK
OPERATIONS CENTER

NORTH

SK-353-A
REVISED 4/24/95

AT&T AND THE TELEPHONE INDUSTRY: 1877-1910

Alexander Graham Bell (1847-1922) will always be remembered as the father of the electric telephone. In 1874 he began work on his great invention, inspired by experiments with devices to help the deaf. On March 10, 1876 the first sentence was successfully transmitted by telephone. Demonstrations at the 1876 Philadelphia Centennial Exposition introduced the telephone to the world and led to the organization of the Bell Telephone Company in 1877.[1]

In 1879, after a short period of competition with Western Union, the Bell System gained exclusive control of the telephone industry.[2] The American Telephone and Telegraph company was incorporated in 1885 in New York, NY The company became the central organization of the Bell Telephone System through a stock transfer in 1899.[3] Until Alexander Graham Bell's patents expired in 1893 and 1894, AT&T focused on serving the business community in the nation's larger cities. AT&T decided that because the marginal efficiency of capital was higher in more densely populated markets, it would largely ignore rural areas, towns, and smaller cities.[4]

The larger cities were served by AT&T licensees, called Bell Operating Companies (BOCs). In exchange for the exclusive right to develop the market in a local region, the operating company agreed to provide the parent with 35 percent of its stock, purchase its equipment from AT&T's subsidiary Western Electric, interconnect with AT&T's long-distance network, and allow the parent company to monitor its engineering practices. During the monopoly era, AT&T's strategy was quiet profitable with estimated earnings of an average annual return on investment of 46 percent.

By 1887 there were more than 150,000 telephones in the United States and the number steadily increased each year.[5] Service for these phones was provided by AT&T, the BOCs, and numerous Independent exchange companies. By the start of the twentieth century, AT&T had over 50 percent ownership in most Bell Operating Companies. Its voting power allowed the parent to standardize procedures more rapidly than the Independents. However, because decision-making power for AT&T resided at its New York headquarters the Independent officials were more aware of local conditions and had greater latitude in adopting policies that met the needs of their communities. This local control was a substantial factor in their success.[6]

The Independents began to construct regional networks and to link them together. However, the clarity of conversation on their long-distance networks was often inferior to Bell's and they needed capital to construct

high-quality trunk lines to expedite the completion of long-distance calls. The companies faced financial constraints that prevented them from raising the capital. In addition to this, AT&T forced its rivals to take losses in local markets by employing predatory actions. This damaged the Independents' ability to fund the construction of their toll network or to finance expansion into new markets. The BOCs lowered their rates below that of their competitors and operated at a loss to force the competition out of business. From the beginning of competition, a consensus had emerged within the parent organization and among the Bell Operating Companies "that the profit need not necessarily be immediately attached to the particular transaction, but that the company itself profit by what is done."

City officials now realized the value of franchises and sought to share in the profit. They set maximum rates, demanded free use of telephone poles and underground conduits for fire and police lines, and required royalty fees. State and local regulations constituted a barrier to new entry because they were not imposed on Bell as well. Many of Bell's franchises had been granted when telephony was new and its commercial value uncertain. Therefore, they did not include similar requirements.

Laws and franchises were granted that had unanticipated deleterious effects on entrants. Bell successfully lobbied (at times illegally) for municipal rules that were harmful to entrants. In 1902 AT&T purchased two leading telephone manufacturers because they were exchanging equipment to the Independents for stocks and bonds. The holding was found to be a restraint of trade and AT&T was forced to sell them in 1909.

Consequently, AT&T emerged in control of the industry as increased numbers of Independents either sold their properties to Bell or joined Bell's network on terms that had been considered unsatisfactory a few years earlier.

A CASE FOR MONOPOLY

The plaintiff, the United States of America, filed its complaint on January 14, 1949 in the case of *United States verses Western Electric Co., Inc., and American Telephone and Telegraph Co.* The final judgment was entered by the Court on January 24, 1956. The defendants were ordered to submit a plan of reorganization to the Department of Justice for its approval within 6 months to be completed within 18 months after the effective date of the Modification of Final Judgment.[7]

The Court ordered AT&T to physically separate from the Bell Operating Companies in respect to facilities, personnel, and books of account; to terminate the License Contracts between AT&T and the BOCs; and to transfer ownership of the separated portions of the BOCs providing

local exchange and exchange access services from AT&T. The ruling also stated that until September 1, 1987, AT&T, Western Electric, and the Bell Laboratories, shall, upon order of any BOC, provide on a priority basis all research, development, manufacturing, and other support services to enable the BOCs to fulfill the requirements of this Modification of Final Judgment.[8]

Basically AT&T would retain ownership of the manufacturing operations, Bell Labs, and the long-distance services. The Bell Operating Companies would provide local services. Although the monopoly charges were filed in 1949 the actual breakup of AT&T and the BOCs did not occur until January 1, 1984.[9]

BELL LABS

One of the first and perhaps the most dramatic adjustment to create efficient outcomes after divestiture was made at Bell Labs. What was once widely regarded as a national treasure--because the fruits of its research were available to any company that sought a license--became simply a huge corporate research and development laboratory. Bell Labs began to use its technology solely for the benefit of AT&T.[10]

This transformation was gutwrenching for Bell Labs executives. President Ian M. Ross said, "Bell Labs has lost its end-to-end mission," meaning that it no longer is responsible for developing all the technology for a complete communications system. Until 1984 the labs had one clear-cut goal: to build the world's best phone network. Its annual budget grew steadily and topped the $2 billion mark.

Bell Labs adopted a new, far more commercial mission: "To give AT&T the technology it needs to be a world leader in information systems," said Ross. The breakup caused Bell Labs to write a formal mission statement for the first time. This was part of the growing pressure on Bell Labs to pay its own way by churning out new products. "There is a sense of urgency: The time scale of introduction and production is shorter than it was in the past," said Eric E. Summer, a vice-president for Computer Technologies.[11]

The number of Bell Labs employees dropped from nearly 25,000 to 18,000 in one year. About 3,000 of them went to Bell Communications Research, a new laboratory set up as the research arm of the seven regional telephone companies. Another 4,000 staffers were sent to AT&T Information Systems. Separating these research groups broke the critical link between researchers and development engineers that Bell Labs had considered so important to its success. "We have exchanged closeness to

each other for closeness to the customer," said John S. Mayo, executive vice-president for Network Systems.

AT&T asked Bell Labs to deliver more and more new products and tighten its belt at the same time. Along with the rest of AT&T, Bell Labs was ordered to cut the budget for 1984 by 25%. "We obviously don't have as large a revenue stream as we once had to support Bell Labs," said James E. Olsen, chairman of AT&T Technologies. He said there would be "additional down-sizing in 1985. There isn't any part of our cost curve that is a sacred cow."

The $200 million annual budget was not cut at that time for the core of Bell Labs (its vaunted basic research operation in Murray Hill) and executives maintain that the strong link between basic science and product development will be preserved, "We must commit ourselves to continued world leadership in basic research while supporting our marketing objectives," AT&T Chairman Charles L. Brown told senior managers.

Bell Labs' future is still hard to forecast. It is certain, however, that the laboratories are no longer a national resource. The free ride is over for those companies that built their businesses on technology developed by Bell Labs.[12]

COMPETITION

Perhaps the most startling result of the AT&T divestiture was the sharp increase in competition in the switching and transmission equipment markets. AT&T's Western Electric was once assured of the market for most of the requirements of its Bell operating company affiliates. However, In 1988 it was reported that since divestiture AT&T lost more than one-third of this business to competitors. Surprisingly, very little of this loss was in large switches or PBXs, where AT&T had been able to meet the surge in competition reasonably well. Rather, the losses were in the transmission equipment, wire, and various other products that go into the telephone company plant.[13] In addition to this, by 1989 there were 500 long-distance companies vying for customers in the $60 billion-plus long-distance market.[14]

AT&T had to transform from a staid monopoly into a tough and nimble competitor to survive. From the beginning of divestiture purchasing agents began looking for ways to cut inventory drastically. The balance sheets for 1985 and 1986 reflect this with a $1,000,000 reduction in inventory.[15] The JIT process was introduced in AT&T's manufacturing plants across the country. This improved material flow and productivity and cut costly inventory while reducing manufacturing lead-time and

improving product quality. Manufacturing time dropped for some products from four weeks to two hours.[16]

AT&T became a customer driven supplier and accepted the belief that customers attach value to quality, reliability, innovation, service and price. They also began designing solutions for businesses that were looking for a competitive edge from suppliers that not only sold quality communications and computer products and services, but who could tie these products and services together into creative solutions.[17]

In 1986 AT&T introduced an 800 service for any size business which allowed customers to receive calls over their regular telephone lines. They also promoted new services such as the 800 Service Assurance Plan, which guaranteed customers uninterrupted service.[18]

AT&T became leaner as their operations downsized all over the country. Employees were offered retirement packages to voluntarily reduce the number on roll.

INTERNATIONAL MARKETS

The fast-growing global marketplace offered a world of new opportunities, and AT&T positioned itself to take advantage of those opportunities. In 1989 the company was globalizing its work force through international training, domestic jobs focused on global markets and offshore assignments. There were already more than 14,000 employees overseas, including 500 expatriates. To globalize overseas employees, some of them began working on rotational assignments in the United States and other countries.[19]

AT&T accepted the challenge and used a variety of methods to enter international markets including contracts and manufacturing. For example, AT&T signed a $154 million contract with Japan's Nippon Telephone and Telegraph Corp. to develop equipment for the largest application of SONET-standard technology in the world. In 1986 AT&T invested $200 million in a Microelectronics plant and began construction on a facility to manufacture integrated circuits in Spain. That same year AT&T began operations in Singapore to produce telephones. Three years later they had produced 10 million phones.[20] AT&T explored all possibilities and developed into an international company. It would require a thick book to document all the challenges that were met and all the opportunities that were explored.

SUMMARY

Divestiture caused AT&T to change Bell Labs from a national resource for all businesses into an organization that operates solely for the advantage of AT&T. When AT&T separated from the Bell Operating Companies they lost a sure market for their manufactured products. To create an efficient outcome AT&T had to face competition, become leaner, become customer driven, and create new services.

AT&T changed from a predominantly analog to an all-digital network primed to capitalize on the emerging market for advanced services. They took a business that was exclusively domestic and made major strides in becoming a truly global corporation.

According to AT&T's CEO, Bob Allen, since 1984 shareowner value has grown more than 19 percent annually on an average compounded basis. However, he believes AT&T can jeopardize their potential if they get complacent.[21] The bottom line is divestiture permanently altered AT&T's structure by placing them in a position where they had to compete. The nation now has more choices for long-distance service. The telecommunications industry is continually reaching out for new technology and striving to provide better service. Other countries benefited by gaining access to AT&T's technology. However, on an individual level the effects of job loss were devastating for many AT&T employees.

Note: This paper was researched and written by Marie McCosh.

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THE HUGGY BEAR STORY

For the Teletype Life Member club the Huggy Bear project started in the fall of 1985 with the cry of a child. However, before I tell you our story, let me give you a little of the history of the Teletype Life Member Club. The Club was formed in 1982 and is made up of AT&T retirees, mostly from the Little Rock Works plant. It is part of the Telephone Pioneers of America, which has more than 850,000 members who do volunteer work in all fifty states and Canada. Our Club has approximately 460 members.

Like I said, it all started in 1985 when one of our members, who volunteers at the St. Vincent Infirmary Medical Center, heard a child crying in the recovery room and wondered if something couldn't be done to make the child's stay in the hospital less traumatic. Well, as you read this, you will quickly discover that God is probably a Silent Partner in this project, for whenever we need help - it seems to be there.

Two months later at a meeting in Conway, we heard that the Telephone Pioneer Life Member Club in Fort Smith made and delivered Huggy Bears to children in local hospitals. What a great idea! At the monthly luncheon of the Club it was decided that we would start a Huggy Bear Project in Little Rock. St. Vincent Infirmary Medical Center was selected as the first hospital to be furnished Huggy Bears. A survey indicated that they would need about 20 Bears a week for in and out-patient children.

Next came the question, "Who would head our project?" We didn't know at the time but some of our members had been making Huggy Bears at home. They were then delivered to nursing homes. One of these women agreed to be Chairperson and has done an excellent job of keeping us on course. She determined that we should have an inventory of 200 bears before we make our first delivery.

So now we had a Chairperson, the know-how, about fifteen volunteers, and a goal of 200 Bears. All we needed was money for materials. At the very next meeting that our president attended with the Teletype Pioneer Council, they discussed what a good year they had in sales in their Pioneer Store and that monies were available for charitable projects. We asked for, and received, $1000.00. That was in 1984 and they have been a steady contributor to our project and are currently donating $100 a month for Huggy Bear material.

AT&T agreed to give us a partitioned area in the Cafeteria for making Huggy Bears. This proved to be a big break for us because it gave us exposure. Employees, after eating lunch, would drop by to say hello and one of those who dropped by watched us laboriously cutting the material with scissors. This was our slowest operation. He volunteered to cut out the bears for us. It just so happens that he has his own business, making cut-outs, and stated that it would be simple for him to make a die. He did! And now stamps out thousands of fronts and backs an hour. Having stamped material was probably the single most important development that made the Huggy Bear Project the success it became. The cut-outs are all uniform; the holes for assembling the eyes and nose are pre-punched. It freed up individuals for other jobs and last but not least, it make the Huggy Bear Project a five state project.

Our aim has always been to get Huggy Bears to as many hospitalized children as possible. So with that in mind, we asked the Arkansas Chapter of the Telephone Pioneers for $1000.00 so that we could buy material for kits to be sold to Telephone Pioneer Councils and Clubs throughout our five state region of Arkansas, Texas, Kansas, Oklahoma and Missouri. They agreed and we have furnished over 100 kits to Council and Clubs in all five states. Each kit consists of 100 sets of a front, back, stiffener and a tongue. We shipped our first kits in August 1989.

I'm getting ahead of our story so let's get back to those first Bears. By February 1986, we had made 200 bears and approached the St. Vincent auxiliary volunteer office with our plan to give Huggy Bears to children. They agreed to handle distribution and even had a sticker make in the shape of a band-aid that reads, "I'll make your stay more bearable at St. Vincent's." These are attached to each bear by the hospital.

We continued to have problems with sewing machines breaking down, difficulty with firmly assembling eyes and noses and no space for storing material. Well, lo and behold, an individual retired from AT&T and joined our Huggy Bear group in 1988. As things often happen, we were so busy making bears that we didn't see what could and should be done - but he did. In 1988 and early '89 our operation improved a hundred-fold. First, he went out and purchased six refurbished sewing machines for $50 each. Second, he told the Company that we needed a permanent, secere place to make Huggy Bears and they agreed. Third, he purchased and had installed a paper cutter to reduce the time it takes to cut the material into squares prior to stamping. And last he had a fixture made to guarantee proper assembly of the eyes and noses.

As I mentioned earlier, we have always been dependent on others for funds to keep our project going. Besides the money we receive from the Council, AT&T donates $1000 a year to the Club, most of which goes to the project. Also, two groups who have children that have benefited from the Huggy Bear project, each donated $25.00 for material. There is always the unexpected help form our Silent Partner. Like the time we couldn't find anyone in Little Rock who could furnish us eyes. We were in the position where if we didn't get eyes within a week, we would shut down. As we were discussing our problem, a supplier of material to AT&T heard of our dilemma and told us that his brother in Texas ran a hobby store and he probably had eyes for our Bears. He contacted his brother who immediately shipped us 3,000 eyes at no cost.

So as we celebrate the delivery of our 10,000 Huggy Bear, we are happy to announce that bears are distributed to children at the following hospitals: St. Vincent's, Baptist Medical Center, Baptist Memorial, Doctors, Children's and Southwest. Bears have also been given to the State Police and MEMS for children in crisis situations. Currently we are working with the Advocates for Battered Women and will be furnishing Huggy Bears for the children of these women.

We still have the same dedicated Chairperson and most of the original group that started out five years ago. Also included in our current group of 30 - 35 that meet every Thursday, are two retired AT&T Vice Presidents; a teenager who periodically shows up with his grandmother; and the in-laws of one of our members (they are in their mid-80s).
We produce about 150 bears a week and it is truly a labor of love for children, but we also enjoy getting together every week for about six hours to swap stories.

Tom

Note: The Huggy Bear Project has been producing Bears for 11 years now and will product their 50,000th bear in November 1996. The bears are now also given to abused children at Children's Hospital. The original group still meet each week to make bears and hope new members will join them in this worthwhile project.

Dear Fellow Retirees and Future Retirees:

Several times since I started to work here in 1969 I have had sickness and/or death in my family. The people from AT&T have always responded in a kind and caring way.

In 1986 I had to stay in bed for almost a month with a back injury. My friends and co-workers sent flowers and a very nice gift. However, what I enjoyed most were the phone calls and get well cards that let me know they were thinking of me.

What touched me most was that in my times of pain and grief, someone would say, "We're praying for you," or "We had prayer for you in our church Sunday."

I wrote this poem because of those caring people. I hope all of you enjoy reading it as much as I enjoyed writing it.

We are leaving a very nice group of people, and I hope they can work here until their day has come, as ours has this year.

My heart was sad and lonely
My head bowed in despair.
Then my spirits lifted,
My friends had said a prayer.

It seemed that all was going wrong
My life was one nightmare.
I thought I could not take the pain,
Then my good friend said a prayer.

Just knowing that they stood by me
And showing that they cared.
They did the only thing they could,
They knelt and said a prayer.

The days and weeks just dragged
Along and I became aware,
That every time my spirits dropped
My friends would say a prayer.

So if you have a dear, dear friend
Who has more than they can bear,
Just go to them and simply say
"I'm going to say a prayer."

Prayer is something you can do
Anytime or anywhere.
The best gift you can give your
Friends is just to say a prayer.

This poem was written by Dean Lacefield Adams when she retired.

WHERE JOY ABOUNDS

Tucked away in our subconscious is an idyllic vision. We see ourselves on a long train trip spanning the continent. Through the windows we drink in the passing scene of cars on nearby highways, of children waving at us from a crossing, of cattle grazing on a hillside, of smoke pouring from power plant, of row upon row of corn and wheat, of mountains and valleys, of city skylines and village halls.

But uppermost in our minds is our destination. On a certain day at a certain hour we will pull into the station. Then wonderful dreams will come true, and the pieces of our lives will fit together like a jigsaw puzzle. How restlessly we pace the aisles, damning the loitering minutes--waiting, waiting....

"When I reach the station, that will be it," we tell ourselves . "When I'm 18." "When I buy a Mercedes!" "When I put the last kid through college." "When I've paid off the mortgage!" "When I get that big promotion." "*When I retire*, I shall live happily ever after!"

Sooner or later we realize there is no station, no place to arrive at once and for all. **THE TRUE JOY OF LIFE IS THE TRIP**. The station is only a dream that constantly outdistances us.

"Relish the moment" is a good motto, especially when coupled with Psalm 118:24: "This is the day which the Lord hath made; we will rejoice and be glad in it."

So, stop pacing the aisles and counting the miles. Instead, climb more mountains, eat more ice cream, go barefoot more often, swim more rivers, watch more sunsets, laugh more. *Live* life as you go along.

Condensed from "The Station" by Robert J. Hastings