

Bell Labs News

MARCH 16, 1992

Technical Excellence to Remain Hallmark of Redefined Labs

BY DAN VAN ATTA

A continued commitment to technical excellence that will retain Bell Labs as the world's premier R&D laboratory. Customer-driven focus on rapidly converting scientific knowledge into practical products and services. The willingness to accept change as necessary to the success of AT&T's business in a highly-competitive world.

These aspects of a "redefined" Bell Laboratories were the key messages conveyed March 10 by Bell Labs President John Mayo and AT&T Human Resources Senior Vice President Hal Burlingame in a live 90-minute satellite broadcast to thousands of employees gathered at 24 Bell Labs locations around the U.S.

The first of three such broadcasts planned this year, the sessions are aimed at updating employees on efforts to realign and more fully realize the human potential of AT&T's technical resources.

Calling AT&T's Human Resources system the "glue" that links the company's R&D resources, Mayo and Burlingame said that AT&T remains as committed as ever to the hiring, supervisory, compensation, training, promotion and other policies that have contributed to creating a world-class R&D community. What's changing, they said, is the

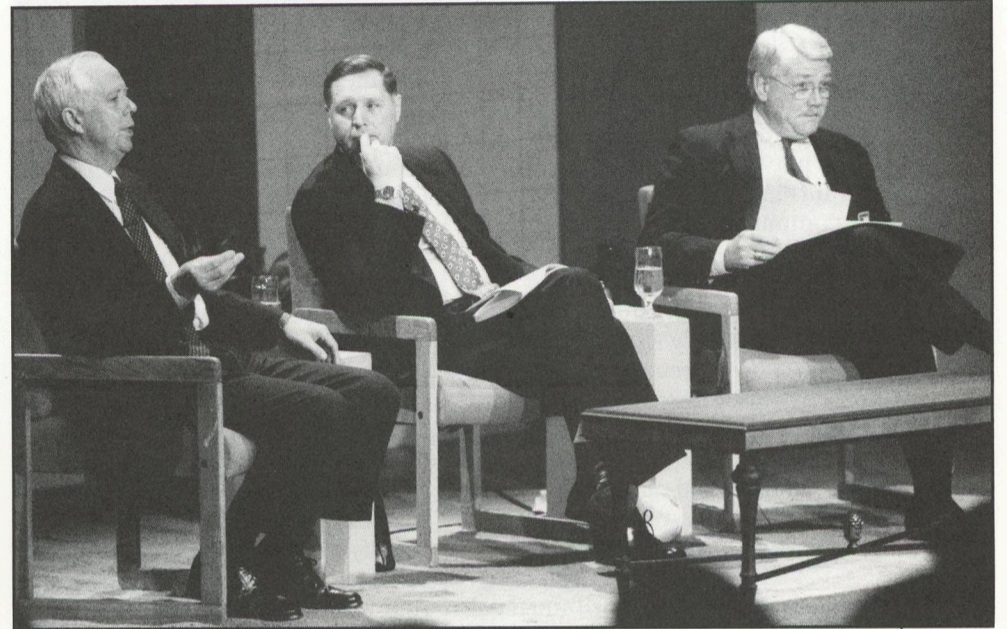
emergence of a strong strategic direction that will guide the entire corporation — including R&D.

"Redefinition is more about a change in mind-set than it is about a few more rules for our old mind-set," Mayo said early in the telecast. Referring to the division between core functions — such as architecture, research and applied research — and the alignment of development functions with the business units, Mayo said, "This is an organizational-change strategy that allows us to work in small, customer-focused teams, and yet retain the strength of Bell Laboratories through continued nurturing of R&D excellence."

Burlingame said the "real purpose" of the redefinition effort is "to foster innovation — to build creative connections between the talent base we call Bell Labs and the business units and customers in a manner that leads to commercial success and business growth."

Since the objective of change is to strengthen Bell Labs, Burlingame said Human Resources personnel have been listening to the concerns voiced by Bell Labs people. These concerns include:

- Wanting to be appraised and compensated by R&D supervisors;
- Maintaining an environment that supports creative, spontaneous learning;



John Mayo, left, and Hal Burlingame respond to questions during last week's live telecast to employees. Public Relations Executive Director Dave Boyce, right, surveys questions submitted during the broadcast.

- Continuing to have a technical career path; and
- Being treated as professionals, and not as a "commodity that is hired and fired with the short-term trends of the business."

At the same time, Burlingame said many business unit leaders say Bell Labs is too costly and that a stronger allegiance to the business units and their customers is needed.

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Jobs Sought For At-Risk Employees

BY DAN VAN ATTA

A total of 658 Bell Labs employees in Switching Systems, most of them located at the Indian Hill facility in Illinois, were among employees notified March 5 that their employment status has been designated as "at risk." The action comes as part of a cost-cutting effort under way to make AT&T's Network Systems Group — and its Switching Systems unit in particular — more competitive with a rising tide of global challenges.

The employees, 53 of whom are located in Columbus, 17 in Holmdel and three in other locations, have 60 days from the notification date to be reassigned to other positions within AT&T or accept severance compensation and leave the payroll. "With the leadership of Switching Systems Chief Technical Officer Mo Iwama and the cooperation of all Bell Labs organizations, we're making every effort to find positions for these 'at-risk' employees," commented Tom Cruz, technical business operations director in Switching Systems.

One way that management is trying to save jobs in Illinois and Ohio, Cruz said, is by actively soliciting resumes from any employee —

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Speech-Recognition System Crosses Technical Threshold

BY DAN VAN ATTA

On March 3, AT&T announced it is installing a speech-recognition system nationwide that will automate many calls now handled by long-distance operators. More important than the significant cost savings that will accrue, researchers say the new system represents a turning point in Bell Labs' nearly 20-year effort to build machines that respond rapidly and accurately to spoken language.

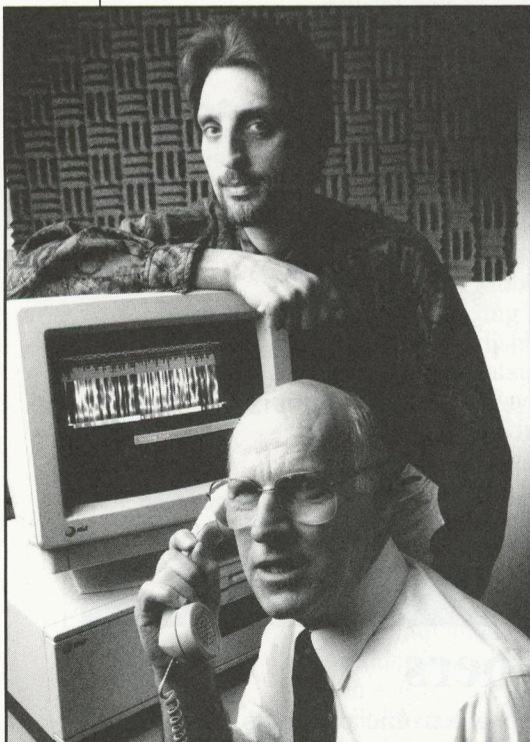
The decision to use the automation system, which is called the Automated Voice Response Call Prompter (VRCP), was not an easy one for AT&T. It means that, initially, as many as 400 management and 6,000 non-management operators will have to either change jobs, which may require retraining, or leave the company. But managers say AT&T can't afford not to make use of the advanced technology it has developed, especially systems designed around technologies, such as voice processing, that are vital to its future.

One of the voice technologies

used extensively in VRCP is based on an algorithm that allows a computer to "spot" certain command words, like "collect" or "person-to-person" even when they are used in a sentence or phrase with other words (such as, "I'd like to make a *collect* call, please"). Another technology of great importance to this system is the development of powerful digital signal processor (DSP) chips that perform millions of computations per second. Such computing speed makes complex techniques, like word spotting, practical in the marketplace.

The algorithms used in the VRCP system had their roots in the Speech Research Department at Murray Hill, then headed by Larry Rabiner. Like the advent of direct-dialed long-distance calling in 1951, or automated calling-card services in 1982, Rabiner says the

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Researcher Jay Wilpon, top, and System Engineer Abe Daudelin view voice patterns displayed by speech recognition system.

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LETTERS TO THE EDITOR

Recycling

In the Jan. 20 'President's Perspective' John Mayo says, "Bell Labs believes that recycling is not only the 'right choice' to save our environment, it's the only choice." Please remember recycling is the last choice of the Recycling 3 R's: it should come after Reduce and Reuse.

Peter Chen, Indian Hill

I was dismayed to see an important recycling issue overlooked in John Mayo's article, "Our Commitment to

Recycling" (Jan. 20). In order for a recycling effort to be truly successful, it must include plans to utilize recycled products (such as printer paper, packing materials, note pads, envelopes, and stationery). Recycling can only reduce the use of raw materials if consumers buy recycled products in place of those made from raw materials. I urge that Bell Labs and AT&T amend its recycling policy to include the purchase and use of recycled products.

Shirley Tobias, Columbus

SPEECH RECOGNITION

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use of VRCP on the nation's long-distance network represents an important turning point in the evolution of telecommunications technology.

A Core Technology

"AT&T's decision to use this technology is very significant," says Rabiner, now director of the Information Principles Research Laboratory. "Because VRCP is based on core technologies that we've developed, its use will lead to a broad range of new products and services that will provide value to customers in the future."

"VRCP is built on a wide range of voice-processing algorithms such as those used in AT&T's Conversant® Voice Information Systems (CVIS), which were introduced for business customers early last year. The CVIS are capable of accepting voice commands to speed such applications as credit-card and banking transactions, and catalog ordering.

The "word-spotting" algorithms used in the VRCP were developed by MTS Jay Wilpon, of the Speech Research Department, who steadfastly pursued the technology even after AT&T elected not to implement an automated system in 1987. Although tests done in the mid-1980s established both that such automated systems were possible and that customers would accept them, AT&T felt then that business constraints limited funds available for development.

"After AT&T decided not to deploy the proposed system, research took another look at the technology and decided it needed the capability to spot key words," recalls Wilpon. "If a caller said, 'I'd like to place a collect call, please,' the recognizer would fail to respond correctly to the word *collect*. The next two years were spent developing word spotting — making speech-recognition technology accurate and easy to use."

In January 1989, Wilpon says, "We developed a greatly improved version of the algorithm, and that's when the clock started ticking. We knew then that it was just a matter of time before the technology would be put in use."

Two months later, Wilpon and a colleague, Sedat Gokcen of AT&T Conversant Systems, built a device that demonstrated how the word-spotting speech recognizer would work. For this demonstration, Wilpon and Gokcen were the researchers, the developers and the marketers all rolled into one. "This demonstration was worth a thousand technical papers," Wilpon adds. "When AT&T management saw that the technology could be easily and economically implemented,

and worked well, our research 'push' became a business unit 'pull.'"

At the same time that Wilpon, with the support of Rabiner, was refining the needed algorithms, Abe Daudelin, then MTS supervisor, and his Operator Services Planning team at Holmdel were developing systems for automating the classification of calls using speech recognition. The result: Daudelin and Bell Laboratories were issued two critical patents for such automated services in 1989 and 1990.

"We were able to apply the algorithms that Rabiner and Wilpon had created," Daudelin says. "We could classify a call up front, and bring in an operator only when one was needed. And, we found customers very receptive to this new technology."

Unlike systems that are "trained" to understand the sounds made by a specific speaker, the VRCP system recognizes anyone speaking English words, and even most accents. It also utilizes advanced echo-suppression technology to allow customers the option of speaking over a voice *prompt*.

If a caller requires additional assistance, the word "operator" will automatically bring one on the line. The system is also designed to be "fail-soft," meaning that an operator will automatically be requested anytime the computer is unable to understand what a caller is saying.

Just the Beginning

Rabiner says the use of VRCP is just the first step in a series of voice-recognition services that will distinguish AT&T from its competition. In addition to possible network-security applications and information-access services, he says voice-controlled cellular phones will soon be operating "eyes-free and hands-free" in vehicles. "The personal communications devices that people will carry with them in the future will be too small for buttons," he adds, "so speech recognition will be used to control the device, such as to send and receive voice mail or faxes.

"These new algorithms and DSPs give AT&T the core competence that we need," Rabiner explains. "Ultimately, all AT&T products and services are going to have a voice-processing imprint on them, and almost all consumer-telecommunications products will be capable of responding to spoken commands."

Computer robots that listen and speak with the fluency of HAL in the film "2001 — A Space Odyssey" are a potential that may not be realized for a long time — "maybe five years away or maybe 50 years," Rabiner says. But VRCP, he adds, is an innovation whose time has come. ■

PRODUCT NEWS

Export Hotline Announced

AT&T and several multinational corporations unveiled a fax information retrieval system designed to help U.S. businesses, especially small and growing businesses, learn more about worldwide markets.

Called the Export Hotline, the system links users to a database containing information about 50 key industries of all major trading partners of the U.S. It can be accessed from anywhere in the country 24 hours a day.

The Export Hotline provides information about overseas markets. Callers access the database by first calling 1-800-USA-XPOR to receive the menu and codes of available

countries and industries. They then send the country/industry codes of their choice via fax to a designated telephone number, and receive by return fax customized reports within minutes. A typical report is 5- to 10-pages long. The only expense to users is the cost of the fax calls.

AT&T is the lead sponsor of the Hotline. Co-sponsors include Berlitz International, Delta Air Lines, DHL Airways, KPMG Peat Marwick, Cahners Publishing Company, Reed Exhibition Company, and the *Journal of Commerce*. The service is supported by the U.S. Department of Commerce as a means to promote U.S. exports.

High-Speed Modem Chip

AT&T Microelectronics announced the first 38,400-bit-per-second modem chip for data and facsimile communications that can be used to build battery-powered pocket and notebook PC modems. Called the AT&T LapTop Complete Modem Chipset, it transfers data at 38,400 bps, eclipsing the 2,400 bps offered by most modem chipsets. It also transmits facsimiles at 9,600 bps, a capability that meets user's needs to send and receive faxes through notebook PCs.

The chipset consists of four devices. Three of these, the AT&T DSP16A, AT&T T7525 Codec and

AT&T V32INTFC, implement the data-pump function. The fourth, the LMC (Laptop Modem Controller) is a microprocessor that supports the AT Command Set, compression protocols and EIA/TIA 578 Class I AT Command Extensions.

The new chipset is expected to speed migration away from lower performing 2,400-bps modems because the higher-speed modems can pay for themselves in reduced phone charges during the first year.

For more information, contact the AT&T Customer Response Center, 1-800-372-2447.

Display Construction Set Available

AT&T Network Systems has made its graphics software package, used to create graphical displays for telephone network management systems, available to business customers. The Display Construction Set (DCS) allows users to build graphical objects such as maps, tables, forms, menus and graphs.

The software tool, which was developed at Bell Laboratories, eliminates the time-consuming coding and compiling programming required by most graphics software. In addition, a

prototype user interface built with DCS can become the final product simply by changing the simulated data to real data. This feature eliminates the need to build a new user interface.

DCS is based on the X Window System and runs on the UNIX® operating system. It has been ported to Sun Microsystems and Hewlett-Packard workstations. For more information, contact Vinnie McCarthy at (201) 606-2846.

*X Window System is a trademark of MIT.

January 1992 Earnings Factors

	Long-Term Savings Plan For Management Employees		Long-Term Savings and Security Plan (Non-management)	
	Earnings Factors	Year-To- Date	Earnings Factors	Year-To- Date
AT&T Shares	.9523	.9523	.9525	.9525
Government Obligations	.9967	.9967	—	—
Diversified Equity Portfolio	.9917	.9917	.9917	.9917
Guaranteed Interest Fund	1.0068	1.0068	1.0069	1.0069
South Africa Restricted Fund	.9861	.9861	.9860	.9860
Employer Stock Fund	—	—	.9512	.9512

(Company match in LTSSP only, effective July 1990)

Earnings factors represent the change in value of the investments in each fund from the previous month. Thus, the current month's value of a fund may be approximated by multiplying the previous month's value by the current month's earnings factors.

2 9 9 7 9 2 4 5 8 0 2 9 9 7 9 2 4 5 8 0 2 9 9 7 9 2 4 5 8 0 2 9 9 7 9 2 4 5 8 0

Numbers

The U.S. world market share in electronic products has been dropping three percentage points a year since 1985.

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INDUSTRY WATCH

Spectrum
Opened to
Communications

Members of the International Telecommunications Union (ITU), a United Nations affiliate, have agreed to set aside a portion of the world's radio spectrum for a new multibillion-dollar communications system that would use dozens of low-orbiting satellites to relay calls to and from people carrying pocket-sized phones anywhere on Earth. The U.S. government pushed hard for spectrum space for the satellite system, in part because putting the system in orbit would bring major orders to U.S. companies. (*The Washington Post, March 3*)

Engineers'
Choice

IBM, Boeing and AT&T — ranked first, second and third, respectively — lead the list of places engineering students would most like to work, according to a national survey by "Graduating Engineer" magazine. "This year's graduates are showing a preference for companies with greater global business presence and strong product lines," said Bruce Matzner, president and publisher of the magazine. (*Investor's Daily, March 4*)

Few Jobs
for Physicists

Even as leading scientists warn that America's educational system is failing to produce scientists fast enough to fill a glaring projected shortage, many young physicists contend that universities are already turning out far more physicists than there are permanent jobs. Permanent research jobs for young physicists have virtually dried up, partly because the recession has drastically undercut the resources of universities and commercial research institutions. The trend is evident, for example, at AT&T Bell Laboratories, one of the world's preeminent institutions of physics research whose employees have garnered many Nobel Prizes. The company now employs 172 physicists as permanent staff members and 104 postdoctoral fellows. Very few of the latter group stand a chance of getting permanent jobs with the laboratory, says Dr. Arno Penzias, who is a Nobel laureate himself. On the other hand, Dr. Penzias said, the training postdoctoral fellows receive at the laboratory prepares them for a wide range of physics specialties. (*The New York Times, March 10*)

LEAGUE
Conference
Held

Members of the LEAGUE, Lesbian and Gay United Employees of AT&T, met in Florida recently to discuss homophobia, ways to combat it, and other issues affecting gays, lesbians and bisexuals in the workplace. The conference, the first of its kind, was held with the backing of AT&T managers. They believe that when workers feel at ease, productivity rises. LEAGUE was formed to fight anti-gay behavior, give gay people a forum to help each other, and show colleagues the value of a workplace where employees feel comfortable. Gay activists say AT&T is among a small number of companies in the United States that have gay and lesbian employee organizations. (*The Orlando Sentinel, Feb. 29*)

U.S.
Relaxes
Export
Policy

In a reversal of policy, the United States agreed with its major allies to allow the former Soviet republics to buy state-of-the-art telecommunications equipment that had been long denied to the communist state. Included in the new list of equipment approved for sale are fiber-optic transmission lines that U.S. spy agencies did not want exported because they impede eavesdropping. The administration signed on to the new rules under pressure from both European allies and U.S. telecommunications firms. (*The Washington Post, March 6*)

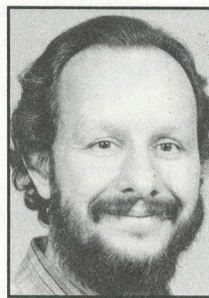
Portable
Computer
Phone in
Wings?

Matsushita Electric Industrial Co. is negotiating with AT&T to set up a joint firm to develop portable telecommunications gear that includes computer functions. AT&T is forging prototypes using an operating system developed by Go Corp., Matsushita officials said. The new equipment is capable of making radio contacts like conventional mobile telephones and is capable of sending and receiving handwritten letters and pictures on liquid-crystal displays. The joint firm is expected to incorporate Matsushita's advanced computer and liquid-crystal display technology into the new product for sale in both the United States and Japan, company officials said. (*The Japan Times, March 3*)

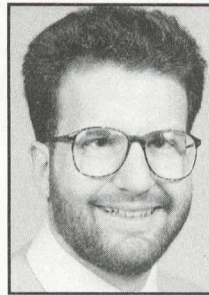
Faster
Chips

Rambus Inc., a Silicon Valley start-up company, said it has developed a technology to vastly increase the speed of memory chips and computers, and that it has licensed the technology to three big Japanese computer-chip makers. The company said the technology would increase by tenfold the speed at which information was transferred from memory chips to processors. Fujitsu, NEC and Toshiba have acquired the license. The three Japanese companies said they would produce and sell dynamic random-access memories, and other chips that incorporate the Rambus technology. (*The New York Times, March 10*)

NEWSMAKERS



Eddy



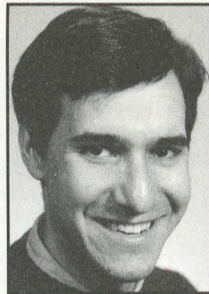
Nonnenmann



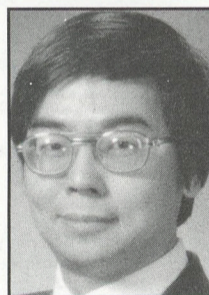
Lanzerotti



Nagel



Schapire



Wong

John Eddy and Uwe
Nonnenmann,

wrote a paper, "KITSS — A Functional Software System Using a Hybrid Domain Model," that was selected as one of the five best papers presented at the IEEE Conference on Artificial Intelligence for Applications 1992. The paper describes novel approaches to automating the testing of large software systems and will be published in a special issue of *IEEE Expert*. Eddy is a DMTS in the Customer Switching Laboratory at Middletown, and Nonnenmann is an MTS in the Computing Systems Research Laboratory at Murray Hill.

Louis Lanzerotti,

DMTS in the Thin Film Metal and Dielectric Research Department at Murray Hill, was appointed to Vice President Dan Quayle's Space Policy Review board. The board, consisting of 33 members from the aerospace community, will be involved with technical and policy studies.

Suzanne Nagel,

director of the Manufacturing Process Research and Development Laboratory in Princeton, has been elected president-elect of the IEEE Lasers and Electro-Optics Society for 1992. As president-elect, she will assume specified duties in the management of the society and will become president in 1993.

Robert Schapire,

MTS in the Artificial Intelligence Principles Research Department at Murray Hill, is the winner of the Association for Computing Machinery's 1991 Doctoral Dissertation Award. The award will be presented to Schapire for his thesis, "The Design and Analysis of Efficient Learning Algorithms," and will be published by the MIT press.

C.P. Wong,

DMTS in the Interconnection Manufacturing Processes Department in Princeton, has been elected president of the IEEE Components, Hybrids and Manufacturing Technology Society. He will assume the leadership and management of the society for a two-year term.

AT&T Sponsors Turing Award

The 1991 A.M. Turing Award, given by the Association for Computing Machinery (ACM) to honor an individual for long-term technical achievements in computer science and information technology, was presented March 3 to Professor Robin Milner of the Computer Science Department, University of Edinburgh, Scotland. The award includes a \$25,000 prize, which is provided by AT&T.

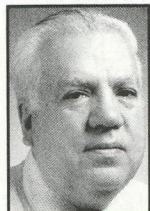
Milner was recognized for his innovative work in challenging areas of computer science for the past 20 years. The ACM Awards Committee cited Milner for three achievements: LCF, the machination of Scott's logic of computable-functions; ML, the

first language to contain polymorphic-type interference together with a type-safe exception-handling mechanism; and CCS, a general theory of concurrency. In addition, Milner was noted for formulating and advancing full abstraction, the study of relationships between operational and denotational semantics.

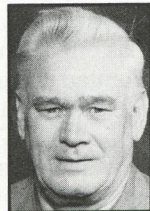
The Turing Award is named for Dr. A.M. Turing, the British mathematician whose work formed the basis for much of the development of computer science. Bell Laboratories scientists who have won the award include Richard Hamming (1968), Dennis Ritchie and Ken Thompson (1983), and Robert Tarjan (1986). ■

PEOPLE

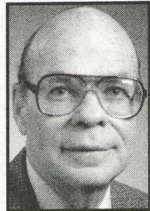
April Service Anniversaries



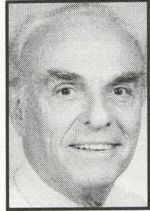
Martingano



McCarthy



Saltzberg



Wolfe

George Barnosky
Electronic and Photonic Process
Operations Department (BL052391),
MH, April 25, 35 years

Clarence Becraft
Cellular Systems Software Design
Department (BL054414), WH,
April 7, 40 years

Michael Berry
New Jersey Computing Services
Department (BL045266), MH,
April 17, 35 years

John Herold
Multi-Chip Module Engineering
Department (BL054726), MV,
April 8, 35 years

Gerald Martingano
Product Quality Assurance and
Realization Department (BL059466),
MT, April 2, 35 years

Timothy McCarthy
R&D Facilities Management
Department (BL077812), WH,
April 8, 35 years

Burton Saltzberg
Data Communications Research
Department (BL045351), MT,
April 22, 35 years

Raymond Wolfe
Physics of Materials Research
Department (BL011547), MH,
April 30, 35 years

Headington, E.E. (17th) ... BL054323
Chu, T.C. (10th) ... BL054325
Kelly, K.K. II (24th) ... BL054424
Blum, S. (17th) ... BL054432
Eichenbaum, B.R. (17th) ... BL054585
Dunn, B. (8th) ... BL054624
Kastet, J.W. (13th) ... BL055442
Davis, M.H. (4th) ... BL055518
Rose, C.I. (25th) ... BL055546
Herrington, E.B. (26th) ... BL055548
Ostrander, J.M. (17th) ... BL059521
Walker, L.L. (24th) ... BL059632
Pannone, L.V. (12th) ... BL059713
Kennedy, T.S. (22nd) ... 16AN0000
Anderson, C. III
(24th) ... 131000000
Leindecker, R.K. (17th) ... BL077197
Jones, C.M. (11th) ... BL077221
Roth, M.E. (24th) ... BL077221
Kelly, B.A. (17th) ... BL077801
Selby, J.G. (28th) ... BL077801
Rudolph, A. (25th) ... BL077811
Solomon, A.D. (19th) ... BL077811
Riley, J.E. Jr. (4th) ... BL077872
Voswinkel, G.S. (15th) ... BL077881
Richardson, B.D. (19th) ... BL079551

15 Years
Psota-Kelly, L.A. (4th) ... BL011552
Sullivan, M.L. (25th) ... BL012381
Peterson, D.E. (4th) ... BL045258
Roman, S.M. (4th) ... BL045258
Feng, F.H. (18th) ... BL045372
Johanson, K. (25th) ... BL046229
Welsh, M. (18th) ... BL046234
Paull, C.M. (9th) ... BL051252
Witting, H.R. (13th) ... BL051314
Johnston, G.C. (19th) ... BL052464
Asher, I.M. (1st) ... BL052823
Stafford, E.K. (3rd) ... BL054327
Burns, K.J. (5th) ... BL054372
Rivera, N.M. (3rd) ... BL054588
Walker, S.L. (21st) ... BL055434
Gilbert, J.G. (25th) ... BL055534
Provenzano, M. (14th) ... BL055665
Thorpe, B.L. (4th) ... BL055665
Boland, P.J. (18th) ... BL055677
Tennessen, D.M. (4th) ... BL055684
Johnson, V.A. (11th) ... BL055813
Cartwright, C. (20th) ... BL055824
Caprio, F.J. (4th) ... BL059462
Burns, C.A. (2nd) ... BL059712
Barnes, L.G. (11th) ... BL059713
Marangelli, G. (25th) ... 16AA00000
Grandlienard, D. (4th) ... 131E30000
Kalisch, R.L. (4th) ... 131N80000
Nolan, M.K. (24th) ... 131040000
Ford, D.W. (25th) ... 131E50000
Peacock, M.S. (25th) ... 131N50000
Forde, R.R. (25th) ... 120730000
Dickson, D.M. (5th) ... BL063111
Heidel, A.A. (3rd) ... BL063118
Canose, J.A. (11th) ... BL077166
Connert, E.T. (25th) ... BL077801
Maye, V.J. (4th) ... BL077801
Caporaso, R.D. (11th) ... BL077811
Edwards, L. (18th) ... BL077811
Anderson, C.L. (18th) ... BL077842
Magos, D. (1st) ... BL079540

10 Years
Cimini, L.J. (5th) ... BL011344
Behringer, R.E. (26th) ... BL011366
Baldwin, N.E. (24th) ... BL012381
Santucci, M.T. (12th) ... BL012381
Krzywda, L.B. (12th) ... BL045200
Gregorich, R.J. (26th) ... BL045261

30 Years
Collman, C.M. (9th) ... BL051151
Burgiel, J.C. (24th) ... BL054586
Maslowski, C. Jr. (26th) ... BL054799
Snare, R.C. (2nd) ... BL055823
Walls, J.E. (2nd) ... 131E10000
Holtz, R.E. (25th) ... BL063161
Carleton, N.B. (30th) ... BL077196
Frank, C.L. (4th) ... BL077451
Bearlepp, G.J. (9th) ... BL077811
Burke, J.M. (23rd) ... BL077811
Smith, R.E. (9th) ... BL077811
England, W. (30th) ... BL077821

25 Years
Storz, F.G. (19th) ... BL011366
Malcolm, J.A. (9th) ... BL045266
Doten, J.A. (3rd) ... BL0454
Ackerman, J.T. (26th) ... BL046229
Mandal, B.R. (13th) ... BL051239
Butler, D.E. (17th) ... BL051351
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In Memoriam

Barrett Bradley,
formerly a designer at Indian Hill,
died Feb. 20. He retired in 1982
after 28 years of service and is
survived by his wife Joyce.

James Clark Jr.,
formerly an MTS at Allentown, died
March 2. He retired in 1970 after
47 years of service and is survived
by his wife Camilla, two daughters
and a son.

Peter DiBartolomeo,
formerly a guard at Murray Hill,
died Oct. 30. He retired in 1978
after 16 years of service and is
survived by his wife Sabina.

William Frey,
formerly a supervisor at Whippany,
died Feb. 22. He retired in 1964
after 44 years of service and is
survived by a daughter.

Mary Riley,
formerly a general clerk at Whip-
pany, died March 3. She retired in
1976 after 20 years of service and
is survived by two sisters.

Andrew Scaglione,
formerly a head cook in New York,
died Feb. 19. He retired in 1962
after 41 years of service and is sur-
vived by a niece.

George Small,
former Bell Labs comptroller, died
Jan. 14. He retired in 1961 after
47 years of service and is survived
by a son.

Bernard Stevens,
formerly an MTS at Murray Hill, died
Feb. 13. He retired in 1986 after
25 years of service and is survived
by his wife Katherine.

Sigurd Stockfleth,
formerly a department head at
Whippany, died Feb. 2. He retired
in 1965 after 39 years of service
and is survived by his wife
Margrethea.

Frank Varkala,
formerly a supervisor at Murray Hill,
died Feb. 13. He retired in 1976
after 29 years of service and is
survived by his wife May.

1991 Doll and Toy Results

Employee cash donations exceeding \$39,100 were made last year. A total of 1,150 dolls and teddy bears were dressed, and gift and toy contributions totaled 15,590. Employees' willingness to volunteer and give made last year's campaign another success. The results by location were:

Location	Cash Donations	Dolls/Bears Dressed	Gifts and Toy Donations
HL/SF	\$ 3,599	N/A	1,730
MH	7,614	195	6,900
WH/MO/CH	5,338	263	900
Pennsylvania*	7,000	N/A	1,550
South Jersey	14,448	600	3,876
LC	1,175	92	634

*Campaigns in these locations are called Operation Santa Claus.

Tell Us a Story

If you have suggestions for stories you would like to see covered in the *Bell Labs News*, please send them to us. See the masthead on this page for the editor's address.

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