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See page 2

Attorney **JAMES POOLEY** comments on avoiding lawsuits when hiring a technical employee who may have confidential information that may be used in a new position.

See page 9

AT&T is increasing monthly rental rates 40 percent starting January 1, causing rent-or-buy decisions to become more complex for businesses and residences.

See page 7

DON HOEFLER switches from prose to poetry with a year-end salute to Silicon Valley, its successes and its failures.

See page 2

A marketing struggle amo
disk drive and media
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Tandem Casts Off Mistaken Identity

CUPERTINO — It has been called home of the Friday afternoon beer bust, an organization run by unorthodox management techniques, the leader in the "fault tolerant market" and a company in danger of losing market share to imitative competitors.

If this portrayal *sounds* like Tandem Computers, Inc., you're right. But if you ask Tandem management, it's a case of mistaken identity.

Like most organizations that experience explosive success and are headed by a colorful executive, Tandem, a manufacturer of online transaction processing computer systems, has received more than its share of

James Treybig

attention and notoriety. Sitting squarely in the midst of the hoopla has been James "Jimmy T." Treybig, the company's founder and president.

Founded in 1974, Tandem has garnered an almost mystical reputation due to a combination of technological firsts, soaring success, and a "humanistic" management approach.

"The need for Tandem simply came from being exposed to and studying the market," says Treybig. What he "simply" recognized was the need for a failure-safe computer system in the online transaction processing marketplace, pegged by some industry analysts to reach $1.3 billion by 1986.

Some eighteen months after initial formation, Tandem

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China is a "sleeping giat
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A critical element in
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FORTH DEVOTEES PROMOTE LANGUAGE

SAN CARLOS – Are FORTRAN, BASIC, and COBOL destined to be joined, or someday even replaced, by a little-known computer language called FORTH? A small band of

The Porter Prognosis: Disk-Drive Industry Thriving

The disk-drive industry has become the new darling of the high-tech field.

The growth of the disk-drive industry has been so dynamic, this way of thinking.

"As densities go up, you have to be concerned about the contaminants coming between the head and the disk. The fixed

TANDEM CASTS OFF MISTAKEN IDENTITY

continued from page 1

began shipment of its NonStop System product line which has worked its way into banking, transportation, manufacturing and brokerage markets. Translated into monetary terms, the company has exploded into a nearly $400 million-a-year organization in seven years, and shows signs of even more dramatic growth in the immediate future.

Yet, for all its technological contributions, Tandem's unstructured management style within the company's rapid growth environment remains a point of fascination and occasional criticism.

The traditional Friday afternoon beer parties, Treybig-led employee orientations, and open-door management policy of the company's early days are still a trademark of today's Tandem.

Uppermost in the minds of industry analysts is whether or not Treybig's brand of managing is now appropriate for a company of Tandem's size.

"It's not eccentric," retorts Treybig in defense of his management philosophy, which he feels has been misunderstood. "It's fundamental that if you want to have a good company and a good place to work, you have to have that type of thing. That's the tactic we use.

"It's no different than the Japanese, where the president goes to work on the production line every week for an hour which is just another way of keeping him exposed to other persons in the company. This is not unique. It's fundamentally American."

According to Treybig, Tandem management determined in a five-year business plan launched in 1980 that the company's greatest challenge was not based on a need for growth but one of correctly managing growth.

"In a high growth company you must depend on everyone understanding where you're going," declares Treybig. "You must have people who self-manage. There's a different role for management which emphasizes more direction and more creativity. High growth is attention to conflict, ideas, and contribution."

If last year is any indication of Treybig's attention to managing growth, Tandem grew by thirty-five percent, increased its cash flow from $25 million to $95 million, lowered its inventories and developed several new products.

"We did lots of things last year that aren't very visible in laying a foundation to resume high growth and better overall balanced performance," adds Treybig. "For example, we've moved board test time from thirty minutes to half a minute, plus we invested two and one-half times more in development in the last two years than in our whole history."

Another invisible strength Tandem possesses is in manufacturing, insists Treybig. "You never read about that, but Tandem is studied by many universities as one of the most progressive manufacturing companies in the country."

But the star billing at Tandem goes to the company's expandable/modular online transaction processing computer systems—the NonStop System I and II, and the new NonStop TXP. Each system employs a characteristic known as "fault tolerant architecture."

Fault tolerant architecture avails itself when a system's processor or other component fails. The operating system automatically shifts the workload to other resources and allows the application to continue uninterrupted during a system failure, which is critical to users of online transaction processing.

The beneficiaries of these systems, to name just two, are the banking and airline industries; each requires a very large number of simultaneous applications such as operating automated tellers or booking reservations.

Yet the NonStop Systems' response time capabilities and cost effectiveness, which Treybig defines as Tandem's true marketing thrusts, have taken a back seat to the industry's buzz-word definition of Tandem's market — namely "fault tolerance."

"Well, we don't ever use that as a market, never have believed that it's a market and in fact have never even presented it as a market," asserts Treybig. "When you're talking about the new Federal Express network and Bank of America's home banking which are on Tandem systems, you're talking about a very large number of applications. That's the market."

Treybig is not about to dismiss the importance of the fault tolerant feature. However, there is a clear distinction between a product function and a market in his view. "We understand online commercial data processing networks," emphasizes Treybig. "We know more about that than anybody."

We just happen to know how to make these systems so that they respond quickly, don't cost much per transaction and don't fail."

Although Treybig does not include Tandem in the "fault tolerant computer market," there are several companies who consider themselves active players and competitors. Synapse Computer Corporation, Parallel Computer Systems, Sequoia Systems, Inc. and Dosc, Inc. all claim to be challengers of Tandem's virtual stranglehold on the transaction processing market.

But Treybig denies that these companies are in Tandem's market. "There is still no other company that has an architecture like ours," he claims. "All the start-ups have either built architectures that are shared memory or redundant, both of which have been here forever. No other company allows both modular size and nonstop without redundancy, which is the foundation of our success."

It is Treybig's contention that there is confusion in distinguishing Tandem from others claiming to have nonstop capabilities. He claims that these start-ups which use microprocessor-based processors are workstation as opposed to mainframe manufacturers.

"A workstation, a PC, and a terminal are all the same thing," says Treybig. "There are a good deal of these companies that say they're competing with us although we never do.

"I'm not saying anything negative about what they're doing; but you're just not going to run a whole retail banking system with a Synapse."

The future of online transaction processing is a very healthy one in Treybig's view.

"There's a very powerful force creating a huge transition from 'batch' to online," he says. "It's a very high-growth area limited only by the ability of companies to provide products that switch from the classical batch mainframe to the online."

The limitation Treybig refers to is IBM's hesitancy to fully move into the online market. "If IBM introduced our system tomorrow, they would sell $14.3 billion in three months."

That staggering figure is consistent with Tandem's decision to introduce its top-of-the-line NonStop TXP System last October. Not only does the TXP provide users with two to three times the performance of the NonStop II system and reduce transaction costs by up to 50 percent, but it adds another powerful tool to Tandem's arsenal.

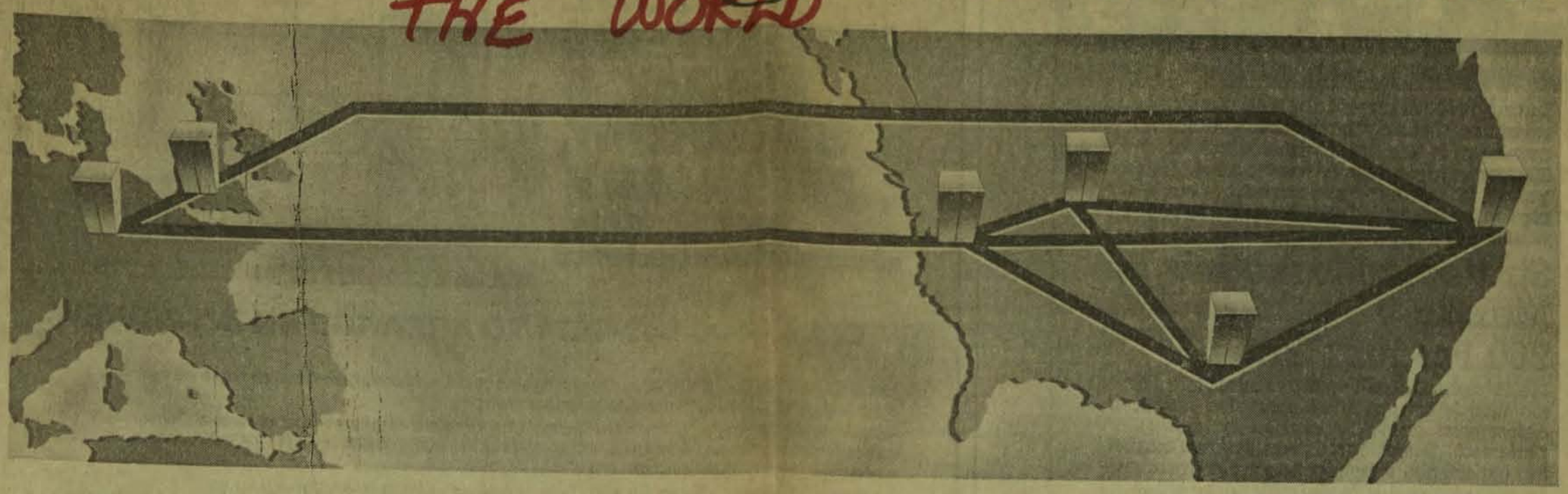
In spite of "misleading labels" attached to Tandem's management, market and competition, Treybig feels his company's future is extremely positive.

"I don't think there's any question we're going to hit $1 billion," he crows. "Once you believe that, it doesn't matter if it's this year or that year.

"If I were going to retire when we got to $1 billion, I guess it might matter what year, but I'm not going to retire at $1 billion."

TANDEM CHANGES FACE OF THE WORLD

MIS Challenges at Tandem.



Advanced Technology, Tools, and Leadership.

Tandem Computers of Cupertino stands out as one of the most significant successes in recent computer history. After all, we pioneered fault-tolerant processing, thus setting a new standard in the data processing industry for transaction processing, reliability and data integrity.

The result is that on-line transaction processing—such as that used by bank ATMs—is a reality and is becoming a significant factor in commercial data processing. And the flexibility of Tandem systems allows users to implement on-line processing easily and quickly, with the ability to grow into a large computer network of up to 255 systems.

Networks That Provide True DDP.

While most Distributed Data Processing (DDP) systems really only allow for remote input and retrieval, Tandem's distributed relational data bases allow access for input, retrieval, *or* update throughout the network without regard to where the data bases are located. Our network can span a building, a city, or continent with apparent transparency to the user.

Data integrity is insured by a Tandem's NonStop* and TXP* systems, which include a unique feature called Transaction Monitoring Facility (TMF). TMF provides transaction concurrency, backout, and—of course—Tandem's fault tolerance to guard against catastrophic failure.

The Tools You Need.

You would expect a company with such advanced products to offer the same in its internal MIS environment. Tandem does. We've made a significant investment in our corporate network, consisting of 170 systems, using 750 processors, and spanning North America, Europe and the Pacific Basin. All employees are linked via electronic mail and all MIS technical staff have their own terminals.

All internal systems—Manufacturing, Engineering, Finance, Human Resources, Field Service, Marketing—are developed and run using Tandem's remarkable NonStop and TXP systems. Application development goes quicker because of the productivity tools designed into Tandem software products.

All documentation is on-line. And, because our systems are fault-tolerant, your work will never disappear—unlike some other shops.

Take the Challenge.

When you work in an environment as advanced as ours, with people as talented as we have, you're challenged to do your very best. If you're ready to meet that challenge, then apply now for one of these excellent career opportunities in the most exciting MIS environment around—Tandem.

Accounting & Revenue Management Systems

Programmer/Analysts

You will design general accounting systems and implement applications such as accounts payable and general ledger, as well as work with on-line applications and data bases. Requires strong programming skills (COBOL) and some understanding of accounting principles.

Project Leaders/Senior Application Analysts

Opportunities exist for people with project management experience and a background designing and implementing on-line applications and data bases in these areas:

- **Marketing Support Systems**
  Order entry, invoicing, commissions accounting, and reporting of goods shipped and revenues accrued.
- **Invoicing & Accounts Receivable**
  International and intra-company invoicing, accounts receivable, and collections.

Project Leader, Senior Programmer/Analyst—Cost Accounting

You will design and implement cost accounting systems. Requires strong project management skills, plus experience with all phases of applications development and the design of on-line applications and data bases.

Manufacturing Information Systems

Positions for senior manufacturing applications professionals involve analysis, design, development, maintenance, and knowledge of distributed data base concepts and COBOL. Looking for creativity, dedication, strong communication skills, and desire to blaze trails.

- **Inventory Control**
  Project leadership for inventory transaction, cycle count, bulk location, physical inventory, interplant transfer software.
- **Purchasing**
  Assist in development of a state-of-the-art distributed purchasing/receiving system.
- **MRP**
  Assist in the development of a distributed master scheduling/MRP system.
- **Product Structure**
  Project leadership for development/maintenance of BOM/Item master, application access control and distributed data delivery software.

Manufacturing Technology

Programmer/Analysts

Positions are available at various levels, developing application systems to support factory automation. Experience is required in defining requirements and designing, developing and implementing major on-line software systems.

Application Support Analyst

Responsible for planning and coordinating support and documentation activities for the development and release of manufacturing technology systems. Duties will include specification writing, user documentation development, software testing, user training and installation support. Programming/analysis experience is preferred. Written and verbal communication skills are essential.

Personnel Services

Applications Analyst

You will be responsible for the design and development of business application software systems, under supervision of a Senior Applications Analyst/Programmer. Duties will include user interface, spec writing, program design, coding, testing, installing, documenting and maintenance. Requires 1-3 years' programming experience, a working knowledge of COBOL, and good communication skills. BSCS preferred.

Information Services

Corporate Data Base Business Analyst

In this senior position, you'll research and define corporate solutions to internal information needs, from major policy to detailed data element definitions. You should have a proven track record as project leader in design, development and implementation of major business systems. Requires 5+ years of significant MIS experience.

Corporate Data Base Programmer/Analyst

You will develop tools to manipulate the Corporate Data Dictionary, write and implement conversion and migration software, establish techniques to distribute data base changes worldwide and develop data base administration utilities. Requires 3+ years' experience in applied programming combined with proven technical expertise, and the ability to produce results on multiple projects concurrently.

Network/Operations

Application Support Analyst/Programmer

You will investigate, analyze and resolve application-related questions and problems which may require the implementation of new or enhanced software. You will also aid users in analyzing and defining business requirements and will design, develop and implement computerized tools to meet user requirements. Requires 2-5 years' experience in application support or programming/analysis. BSCS or related degree a plus.

Microwave Hardware Support

You will plan, install and support satellite earth stations, and point-to-point microwave, and digital and analog systems. Requires 5+ years experience, FCC radiotelephone license, and 30% travel.

Sr. Network Analyst

You will be involved in planning and monitoring the continued growth of Tandem's multinational computer network. Requires experience in international data communications; Tandem experience a plus.

Engineering Applications

Programmer Analyst

Duties will entail designing, implementing and supporting an on-line data base system for the development and documentation processes for Tandem products. You will use COBOL, Tandem's relational data base, and other related systems.

Systems Support Analyst

You will plan and execute support and service activities for the installation, modification and diagnosis of computer hardware and associated peripheral equipment, as well as computer systems programs, support software and operations. You will also provide technical expertise for the resolution of problems. Responsible for providing service in order to meet user needs and provide technical advice to both management and user groups on all aspects of customer service support. Requires 3-5 years' experience in systems analysis and a thorough knowledge of related applications.

Customer Engineering Information Systems

Programmer/Analysts

As a member of our field service team, you'll share in the concept, design and success of our unique software systems for spares, forecasting, planning, tracking, contract management and service accounting and equipment configuration. Requires 5 years' minimum application programming experience, a thorough knowledge of COBOL, and at least a 4-year degree. Experience with on-line applications for at least one of the systems mentioned above would be a definite asset.

Software Librarian

You will catalogue department publications from documentation and programming staffs, organize and track master copies, keep a history file, and set up and coordinate procedures with Development and Applications Support Groups to standardize and control release of new applications and documents. Prefer college degree, along with proven organization skills and familiarity with CRT equipment and automated systems. Experience using Tandem products a plus.

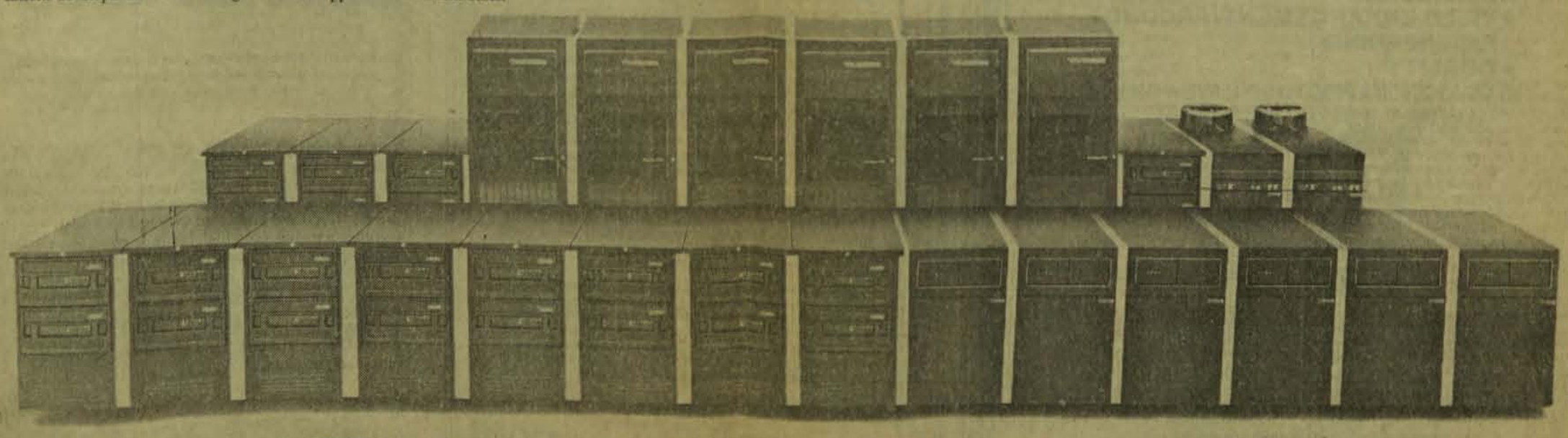
Do It Today.

If Tandem sounds like the place for you, then call Dana Cannon at (408) 725-6487, or send your résumé to her at Tandem Computers Inc., Dept. 1/10, 19333 Vallco Parkway, Cupertino, CA 95014. Our MIS representatives will be at WESTECH to discuss these exciting opportunities. We are an equal opportunity employer.

Principals only, please.

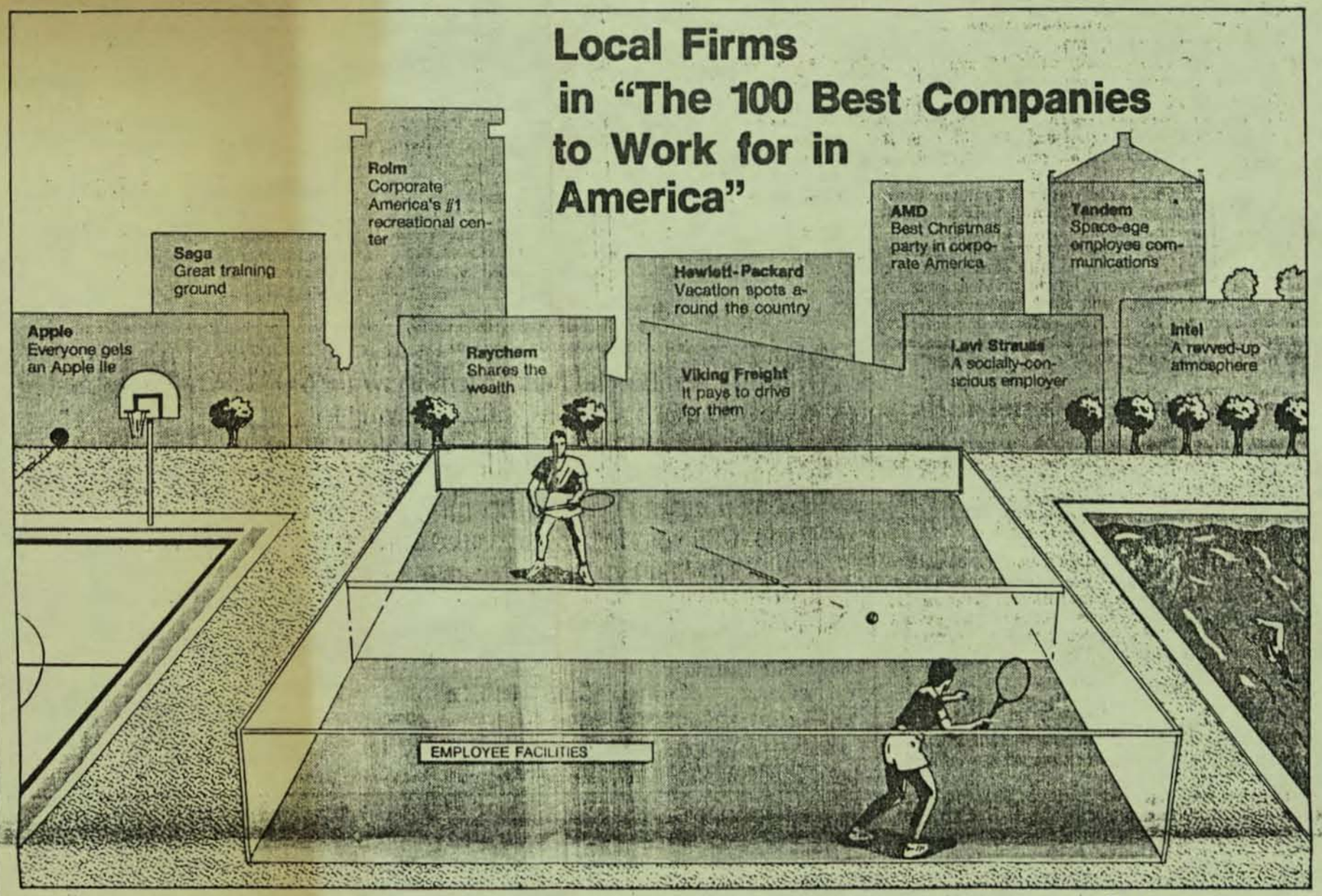
Westech '84

TANDEM



Makers of TXP,* the most powerful on-line computer in business today.

*Trademark of Tandem Computers Inc.



Steve Lyons — Mercury News

10 Bay Area firms among 'best' employers

By Dedra Hauser
Business Writer

Rolm Corp. is singled out for its athletic facilities and its beautiful headquarters.

Apple Computer Inc., Hewlett-Packard Co. and Tandem Computers Inc. are listed as companies that give the best parties.

And H-P is ranked among the top ten corporate employers overall in a new book, "The 100 Best Companies to Work for in America." Ten Bay Area companies are included in this survey of the best places to work, seven of them high-tech companies based in Silicon Valley.

The ten companies are: Apple of Cupertino; Advanced Micro Devices Inc. (AMD) of Sunnyvale, which was a runner-up for the top ten nationwide; H-P of Palo Alto; Intel Corp. of Santa Clara; Levi Strauss & Co. of San Francisco; Raychem Corp. of Menlo Park; Rolm Corp. of Santa Clara; Saga Corp. of Menlo Park; Tandem of Cupertino and Viking Freight System Inc. of Santa Clara.

This makes the Bay Area home to more top-notch employers per square foot than anyplace else in the country, says Milton Moskowitz, a Mill Valley-based newspaper columnist and one of three co-authors of the book. "This area is really overrepresented in the book."

The high percentage of local companies could be influenced by the fact that all three authors live in the Bay Area. But co-author Robert Levering says it's because the area is a "center of experimentation in progressive employee relations."

The method of choosing the top 100 companies was less than scientific, Moskowitz admits. The authors visited 140 companies around the country culled from a list of about 350 employers they identified through research. "It was a difficult balancing act," he says.

Moskowitz regrets a few of the choices, including one Silicon Valley company that he didn't want to identify.

The real test of an employer is when it hits hard times, he says.

He would also have liked to include more small companies. One small local company he was impressed with is ESL Inc. of Sunnyvale, a subsidiary of TRW Inc. of Cleveland, Ohio. "In general we think small companies are a lot more salubrious," he says.

The authors tried to consider each employer from the perspective of everyone who worked at the company, not just the managers, Moskowitz says. National Semiconductor Corp. of Santa Clara was considered and then rejected as one of the 100 companies because of the way it treats hourly workers, hesays. "It seemed like a sweatshop down on the factory floor," he says.

Tim Thorenstein, corporate director of employee

Continued on Page 3D

Book surveys the top 100 companies for employees

Continued from Page 1D

enhancement at National, says this perspective is inaccurately based on an outdated image of the company. For example, employee turnover at National has been reduced to one-third the level it was in past boom periods, he says. "I'm willing to match the company's quality of work life against any company in the valley," he says.

A number of the companies cited in the book wouldn't be a good place to work for everyone, Moskowitz says. For example, the book's description of Intel characterizes the employees as a "masochistic bunch," who work in a "tough demanding environment." It notes that people yell at each other a lot. "I wouldn't personally want to work there, but I can understand why people like it," Moskowitz says.

Although the book identifies distinct corporate personalities distinguishing the Silicon Valley companies, they also have a great deal in common, Moskowitz says. "Companies in the valley are much more informal in their procedures. They have less of an uptight atmosphere, for example, than the Boston area high-tech companies."

A company like Digital Equipment Corp. (DEC) of Maynard, Mass., (included in the book) has a reputation as a great place to work, Moskowitz says. "But you somehow don't have the same easygoing feeling there as when you walk into H-P. It's a less fun kind of place."

In keeping with this, three of the six companies cited for having the best parties are in Silicon Valley. The book's list of the top ten companies for ambiance includes AMD, Apple and H-P.

Some of the other top ten rankings earned by local companies include: AMD for job security, Apple for benefits, and H-P for pay and job security. Surprisingly, none of the local companies is included among the companies offering the best chances for climbing the corporate ladder.

Although the book's descriptions are almost entirely positive, it lists one negative for each company. For example, it says women may be "handicapped" at H-P.

An H-P spokeswoman responded by saying that claim is unsubstantiated. She cited statistics showing the company's progress in promoting women. For example, the percentage of women in management increased to 24 percent in the first quarter of 1984 from 18.6 percent in 1979.

Some of the negatives cited are more fanciful. For Rolm, the negative is the following: "How do you look in a bathing suit?"

> "Companies in the valley are much more informal in their procedures. They have less of an uptight atmosphere, for example, than the Boston-area high-tech companies."
>
> — *Milton Moskowitz, one of the authors of The 100 Best Companies to Work for in America*

The top 100

The 100 best employers, from "The 100 Best Companies to Work for in America," in alphabetical order:

Advanced Micro Devices, Analog Devices, Anheuser-Busch, Apple Computer, Armstrong World Industries, Atlantic Richfield.

Baxter Travenol, Bell Laboratories, Borg-Warner, Leo Burnett.

Celestial Seasonings, Citicorp, Control Data, Trammell Crow, CRS/Sirrine, Cummins Engine.

Dana, Dayton Hudson, Deere, Delta Air Lines, Digital Equipment, Walt Disney Productions, Donnelly Mirrors, Doyle Dane Bernbach, Du Pont.

Eastman Kodak, A.G. Edwards, Electro Scientific, Erie Insurance, Exxon, H.B. Fuller.

General Electric, General Mills, Goldman Sachs, Gore.

Hallmark Cards, H.J. Heinz, Hewitt Associates, Hewlett-Packard, Hospital Corporation of America.

Inland Steel, Intel, IBM, Johnson & Johnson, Johnson Wax.

Knight-Ridder, Kollmorgen, Levi Strauss, Liebert, Linnton Plywood, Los Angeles Dodgers, Lowe's.

Marion Labs, Mary Kay Cosmetics, Maytag, McCormick, Merck, Merle Norman Cosmetics, Herman Miller, 3M, Moog, J.P. Morgan, Nissan, Nordstrom, Northwestern Mutual Life, Nucor.

Odetics, Olga, J.C. Penney, People Express, Philip Morris, Physio-Control, Pitney Bowes, Polaroid, Preston Trucking, Procter & Gamble, Publix.

Quad/Graphics, Rainier National Bank, Ralston Purina, Random House, Raychem, Reader's Digest, ROLM, Ryder.

Saga, Security Pacific Bank, Shell Oil, Southern California Edison, Springs, Tandem Computer, Tandy, Tektronix, Tenneco, Time Inc.

Viking Freight System, Wal-Mart Stores, Westin Hotels, Weyerhaeuser, Worthington Industries.