amdahl

December 1987

Update

Season's Greetings

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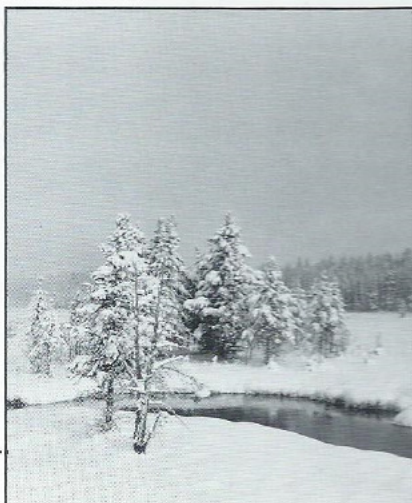
For Employees and Families of Amdahl Corporation

Contents

On The Cover

The season's first snowfall transforms Yellowstone National Park into a veritable Winter Wonderland (*photo by Pat Cashmore*).

Season's Greetings
from
Jack Lewis
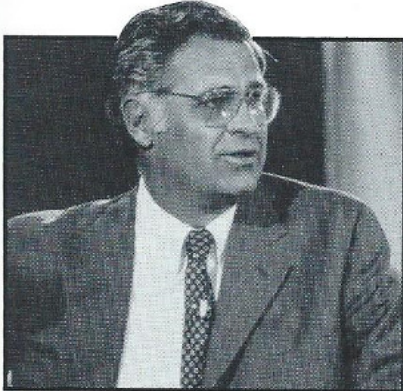
Jack Lewis, Chief Executive Officer and Chairman of the Board

As 1987 draws to a close, it is appropriate to reflect on the year, a year that has been very successful for the company. We have introduced a number of excellent products; maintained high levels of customer satisfaction; continued our success with the Quality Improvement Process; and cultivated an employee population that generously reaches out to the community.

By any measure, our most significant achievement has been the superb financial growth the company has experienced. With the announcement of our third quarter's earnings, the company's yearly revenue exceeded one billion dollars for the first time in Amdahl's history. A milestone like this takes years to achieve, but a number of successes in 1987 helped us reach this financial summit.

Early in the year, we announced the 5890-190 uniprocessor, which greatly expands the performance range of the 5890 family. We also announced the 5890-400E three-way processor, and four enhanced processors known as "E" models.

During this summer, we announced UTS/580* Release 1.2, an upgraded version of the UNIX† operating system for large-scale processors. We also introduced the 5890-180E, a new entry-level model in the company's powerful 5890 processor family. To improve the performance of our storage subsystems, we introduced the High Speed Channel Feature and larger cache memory sizes.

Last fall, the 4725, a new generation of communications processors, that gives users up to 80% more throughput than previous models, was introduced, and major improvements in our large-scale vector processors were announced as well.

The success of our products has been reflected in customer response to Amdahl. Recent customer satisfaction surveys have shown that we are at our highest level in more than seven years. Our customers consistently rate us No. 1 in products and services. In one 1987 survey, we ranked first in five of eight categories, and placed second in the other three.

A major reason for this success has been the widespread implementation of the Quality Improvement Process: To date, we have trained employees both in the United States and in Ireland.

Canada, the Pacific Basin, and the remainder of Europe are beginning to get their programs off the ground.

An especially gratifying byproduct of the company's success is the generosity it has generated among our employees. The results of the recent Santa Clara County United Way Campaign are a case in point. The total employee contribution of $406,399 was more than a 30% increase over last year's total of $310,992. The company goal was a 15% increase. This year, 63% of our employees contributed, up 7% from last year's 56% participation.

The achievement of these many milestones this year is the result of the hard work and dedication of Amdahl employees throughout the world. It is also a result of the confidence of our customers and the excellent reputation Amdahl enjoys in the industry.

I, along with Joe Zemke, Gene White, and the other members of the Board of Directors, thank all of you for your efforts and support during 1987.

We wish everyone a safe and joyous holiday season. □

* UTS is a registered trademark of Amdahl Corporation.
† UNIX is a registered trademark of AT&T.

Amdahl Engineers
Shoot Bugs, Dead

(l. to r.): Gavin Bowlby, Tibor Polgar, and Dave Bogdanoff, Diagnostics Development's senior ''sharpshooters,'' confer on the best way to exterminate bugs in Amdahl's processor products.

From medicine's laser surgery to a meteorologist's radar-assisted weather forecast, technological ''weaponry'' is an important part of our lives. But what kind of ''weapons'' does a computer manufacturer use to remove bugs from its machinery? Instead of lasers, Amdahl's Diagnostics Development group employs 8E7, DIRT (Data Integrity Random Test), and Alpha, Amdahl's three primary system-level diagnostic tests for the 5890 and other products.

Amdahl's SLTs (System-Level Tests) span ten years, three generations of products, and the teamwork of dozens of people. They are used to test machines on the engineering floor, before final Manufacturing checkout, and at customer sites. They have searched out and eliminated defects in all of Amdahl's computers. But what exactly are these wonder tests, and how have they contributed to the overall excellence of our products?

The system-level tests ensure that we implement the IBM architecture that is a crucial part of our plug-compatible machines. They also verify Amdahl's internal architecture. All three SLTs, 8E7, DIRT, and Alpha, are actually very large, complex operating systems. Each SLT in itself tests about 70% of the total machine. Together, they randomly test for everything that could possibly go wrong in our machines. "We want to develop full coverage for all new models and systems," says Tom Kenville of Diagnostics Development. "Because we use operating system-type tests, we can immediately integrate any bugs that we find into the tests. This gives us better coverage, because we're always testing for repeated incidents of that bug." Better coverage, in fact, has been an ongoing goal since the early days of testing Amdahl machines.

Look back to 1977. Amdahl had launched its line of 470 computers, and the product was selling well. But Engineering was having some problems with the machine's instruction execution: the instructions were being executed so fast, they sometimes "collided" with one another. And this particular problem was difficult to pinpoint in test runs. Diagnostics Development decided that random testing of the machine was the only way to solve the problem. Working closely with Customer Services, they modified a public-domain diagnostic, and Amdahl's 4E7 SLT was born. This diagnostic tool would pave the way for more sophisticated tests: DIRT (designed in 1981 by Dave Bogdanoff); 8E7 (1982, team leader Gavin Bowlby); and Alpha (1982, team leader Tibor Polgar). These diagnostics satisfied our need to test the storage paths and data integrity of the 470 and the 580.

While 4E7 successfully kept track of instruction problems on the 470, it was unable to fully test the 580 design. The 580's complexity introduced four significant areas needing coverage: I/O testing (input/output, the channeling of data between the machine and externally attached devices), data integrity, the ALTA architecture, and the new IBM XA architecture.

As the 580 product development proceeded in the early 1980s, the I/O testing and storage integrity problems became paramount. Enter DIRT, the first new SLT. DIRT randomly tested the 580's storage design. It also provided significant coverage for the I/O area of the machine's design.

While DIRT was under development, Diagnostics undertook the second major SLT effort—creating 8E7, which validates the design of the ALTA architecture (the basis of Amdahl's multiple domain feature, or MDF).

With I/O, data integrity, and ALTA well in hand, Diagnostics turned its attention to the newly-announced XA architecture. The XA architecture was complicated. It included additional addressing and control features needed by the evolving MVS and VM operating systems (that customers run on Amdahl CPUs). A diagnostic was needed that could mimic the characteristics of MVS/VM—thus Alpha, a multiprocessor multi-tasking operating system test, was born.

Recently, a fourth SLT has been added to Diagnostic's arsenal. It's called HOT (Heavy-Duty Input/-Output Test), and like DIRT it detects I/O bugs. But HOT is different from the others. With its more user-friendly interface, it is the first SLT designed primarily for use by field engineers.

All of these tests have proven invaluable to Engineering in the development of Amdahl's processor products. Together, they have found hardware design flaws in the machines' instruction, storage, and channel units, and firmware flaws in the machines' macrocode and microcode. What's more, they've found virtually all these bugs in-house, before they got to

All of these tests have proven invaluable to Engineering in the development of Amdahl's processor products.

customers. The few that did sneak by were easily detected by Amdahl's field engineers, who also run the SLTs on machines in the field.

With Amdahl's next generation of products, Diagnostics is looking to apply the SLTs earlier in the development process, and to use them in conjunction with other tools to expand their coverage. You can be sure of this: if any bugs exist in Amdahl's future products, the group's sophisticated "weapons" will shoot the bugs, dead. □

Bruce Sedlacek

Amdahl's Musical Dynamo

"I like being creative," says Bruce Sedlacek, technical illustrator in Amdahl's Technical Publications Services department. And Bruce gets plenty of opportunities to be so. A former professional cook, Bruce spends his days at Amdahl drawing technical diagrams for an assortment of manuals, and— after work—provides graphic arts services to various community groups.

But Bruce's most significant extracurricular activity is his work as the bass guitarist for Robyn Danger, a heavy metal rock band that gives performances every two weeks at such hot night spots as The Stone (San Francisco), Cabaret (San Jose), and Gazarri's and Troubador (Los Angeles). Bruce's biggest musical successes to date have been opening shows for the popular heavy metal bands Dökken, Keel, and Lita Ford.

Bruce's musical talents are prodigious. He not only is an accomplished instrumentalist, but a singer, writer, arranger, and producer, who has demonstrated these abilities on two recordings: *Rebels of the Night*, on the South Bay label; and *Scream Your Lungs Out*, on Danger Records (his band's label). Other rock artists acknowledge the magic of Robyn Danger's music: drummer Leonard Haze and guitarist Jimmy Lyons will be recording on the band's next album, scheduled for release in early 1988, and guitarist Ronnie Montrose will be doing the final production.

How does Bruce, who is pursuing a degree in management at a local college, have the time and energy for his diverse interests? It's all in the attitude. "I have

Photos by Rick Roach
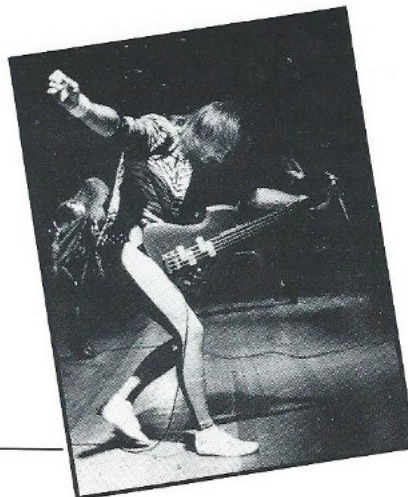
always liked to challenge myself," he says, "and to test my limitations."

Bruce has demonstrated this spirit for as long as he can remember. He taught himself to play guitar when he was in junior high school, though cello lessons in the second grade had been his only prior musical experience. After hearing Ronnie Montrose perform in 1973 at Winterland in San Francisco, Bruce was hooked. Two years later, he started his own band, primarily performing the music of Jimi Hendrix. Next, he joined another group that played a sophisticated brand of popular music. And for the past three years, Bruce has been involved with Robyn Danger, a pursuit that takes up most of his spare time.

The band rehearses fifteen hours per week, does their own booking, and performs every two weeks. Besides appearances at major clubs, they also perform for non-profit organizations. Last October, the band played a benefit concert in Sacramento during Red Ribbon Week, part of an anti-drug campaign, before an audience of 500 high school students. "If I can help kids steer away from drugs, that will be enough satisfaction for me," says Bruce.

What's in store for this multi-talented musician, graphic artist, cook, budding manager, and entrepreneur? "I am always setting goals," says Bruce. "Musically, I want to go on major tours, record on a major label, and get more involved in producing. As for Amdahl, I want to keep developing my graphic arts skills and continue giving my all to the job." □

Job Fairs Help
Amdahl Recruit
The Best And The Brightest

(l. to r.): At a recent job fair, Marion Montgomery, Staffing manager, Linda Doolin, and Diane Roberts put potential job candidates at ease while outlining Amdahl's current openings and corporate values.

Good employees are one of the most valuable assets a company has. To ensure that our most valued assets are carefully selected, Amdahl employs a variety of strategies: The Employment organization recruits internally, via the Internal Placement Assistance Program and employee referral campaigns, while Amdahl managers conduct interviews on college campuses nationwide. And the "You Can't Do That" recruitment advertising campaign, plus articles about Amdahl in commercial and trade publications, have attracted thousands of applicants from around the world.

But job fairs are unique. They generate a huge volume of applicants within a relatively short period of time, and help firms maintain a high degree of visibility within the industry.

Amdahl's increased exposure has brought an unusually large number of potential hires to the Amdahl booth at recent job fairs. Recruiters might talk to 2,000 eager applicants and bring 1,200 resumes back to Amdahl. With this high volume, Staffing has learned to be efficient in the job-fair interview process. "We really have to zero in on a person's background, ask pertinent questions, and launch that person into the next stages of the hiring process," says Marion Montgomery, Staffing manager. "We have to be ready to discuss our openings, our corporate values, and the candidates' career goals. We always give people the attention they deserve, and try to make them feel positive about themselves, even if we don't have an opening that's right for them."

Adds Gary Albright, staff Industrial Relations specialist, "Having line managers actively involved allows us to better describe specific positions to potential employees. Both applicants and managers comment about the favorable impact we make as a team."

Along with local shows, Staffing recruiters have attended job fairs in Dallas, Phoenix, Chicago, and Washington, D.C. "We recruit very specialized people," says Marion, "so we utilize a broad geographic market to locate qualified applicants for all the positions we have to fill." This is a substantial number— Amdahl peaked at over 450 openings earlier in the year, and averages 300 at any given time.

Preparing for and conducting job fairs requires thorough planning, commitment, and followup on the part of the Staffing organization and the participating line managers. But the hard work is well worth the effort. "When we finally identify the elusive candidate that we've been searching for," says Marion, "or when a manager is so elated he or she interviews a potential employee on the spot, there's nothing like it."

And for the applicants who are hired, there's nothing quite like launching, or continuing, a career at a place like Amdahl. □

Miracle on Wall Street—

It began with an urgent plea from a customer, and ended with a winning install.

On Monday, October 19, 1987, something rather unusual occurred on Wall Street. The Dow Jones Industrial Average decided to take a vacation, and momentarily dropped out of sight. But after a weeklong roller coaster ride, the stock market stabilized. And Amdahl, by providing around the clock coverage to key Wall Street accounts and performing a "miracle" install, did its part to help the market resume equilibrium.

ADP (Automatic Data Processing), one of Amdahl's New York customers, provides data processing services and technical support for some of Wall Street's biggest brokers. ADP directly processes many of the sales transactions on the stock exchange floor. Their Brokerage Services division records stock transactions, posts them to the correct accounts, and ensures that broker's commissions are fully credited. But on that Monday, ADP faced a dilemma. With volume on the New York Stock Exchange topping 600 million shares, the company's computers soon ran out of capacity. While they always planned for fluctuations in the market, these vacillations were out of the ordinary.

It's 11:00 p.m., Tuesday night. Sal Gerardo, Amdahl's New York district manager, is awakened by a desperate phone call from Tony Butcheri, vice president at ADP. "We need a computer, and we need it now," Tony said frantically. "Is there something you can do?" Without questioning him further, Sal told Tony that he'd do what he could and call him first thing in the morning.

As soon as the Amdahl office opened on Wednesday, Sal assembled everyone who would be involved, from vice president David Wright to field engineers. In view of the stock market situation, the Amdahl employees decided that a 5890 en route from Ireland to Hartford, Connecticut, should be rerouted to ADP in Manhattan. The 5890 had the capacity that ADP needed for its huge data processing operations. And the machine's small size and weight guaranteed that it could be installed in ADP's computer room without disrupting any of their intensified activities. A call was placed to the Boston airport, where the 5890 was going through customs. Customs officials assured Amdahl that they would hurry the machine through.

That took care of the machine. Now an install team had to be assembled.

The New York field engineers were already scheduled for an install that weekend, at Chemical Bank in Jericho, Long Island. It was important that this install proceed as planned, without any inconvenience to the customer. So Tony Scotman, district manager and acting field manager for the area, asked Amdahl's New Jersey office for help. They immediately agreed to perform the Chemical Bank install. This left the New York team, who were already familiar with ADP's layout, free to perform the emergency install.

By now it is Thursday, and the pressure is mounting. The stock market is continuing its crazy fluctuations, the 5890 is on its way to New York from Boston, and the install team is assembled and ready to go. They had already inspected ADP's computer room for the necessary environmentals, and determined how to position the machine without disrupting ADP's frantic operations. All the tools and cables needed to perform the install were unpacked and waiting. And waiting.

On Friday morning, the wait was over. The 5890 arrived at ADP's data center at 42 Broadway, and the install began. Racing the clock and the seesawing Dow Jones, the seasoned install team had the machine powered on by Friday night, and was able to run system assessment tests by Saturday. On Sunday, ADP brought in their software experts. And on Monday morning, the machine was up and running long before the stock market opened. The "miracle" install was a success.

Since the install, the stock market has wavered. But not ADP's 5890. It has performed "without one hiccup," according to Tony Scotman. Amdahl's performance, too, was without flaw. "We pulled off what people thought was impossible. ADP is extremely impressed," Tony summarizes.

ADP Install Team

Paul Barone
Bill Booker
Ken Brent
Toney Burnham
Des Dawson, AE
Anthony DeSiena, RSE
Gordon Henwood, RSE
Ron Hiscock
Steve Lane
Carmen Lombardi
John Murphy
John Rockwell
Ron Roed, MSM
Mike Scotti
Ray Smith

Tech Teaser's

A Crowd Pleaser

A lucky techy and friend will soon enjoy a fine repast at their favorite restaurant, courtesy of the *Update*. Our Tech Teaser contest was a definite success, enticing entries from Canada to the Pac Basin. While most of the entries were serious, a few took a bit of poetic license with the definitions. Sum Hagerman (Cincinnati) described "bubble board" as "board bubble—a cone of silence for a meeting of the board of directors." And Sunnyvale's Duane Schwartzwald defined "slave station" as none other than "my desk!"

The contest did produce one serious thing—a winner. Congratulations to Dan Greiner of Rosemont, Illinois! Dan's name was chosen randomly from the correct entries. Here are his prizewinning answers:

1) dilch cigallo. Logical child: an IMS program segment.

2) tewyrq. Qwerty: a keyboard commonly used in the USA, so named for the position of the respective keys.

3) portabsot. Bootstrap: the program used to initialize a computer, normally after power-on (as in pull yourself up by your bootstraps).

4) hwele bhutm. Thumb wheel: a switch or control operated by rolling the thumb over a wheel.

5) radob beblbu. Bubble board: a printed circuit board containing conductive bubble switches, often made of coated mylar. Bubble boards are commonly used where inexpensive, reliable switches are needed (calculators, keyboards, 580 maintenance panels, etc.).

6) tweehntos. Whetstone: a measure of computer work, typically used to calculate the relative speed of floating-point processors.

7) nttuk ite. Tie trunk: a group of communication lines bundled together (either logically or physically) to form a common trunk (line).

8) tinosat vasel. Slave station: a processor, data entry station, or other piece of equipment tied to, and controlled by, a master station.

Yves-Noel Derenne

Named Personnel Director, Europe

After an intensive search for the right person, Amdahl has selected Yves-Noel Derenne as the new director of Personnel for Europe. Yves-Noel brings, among other things, a French perspective to the European management team.
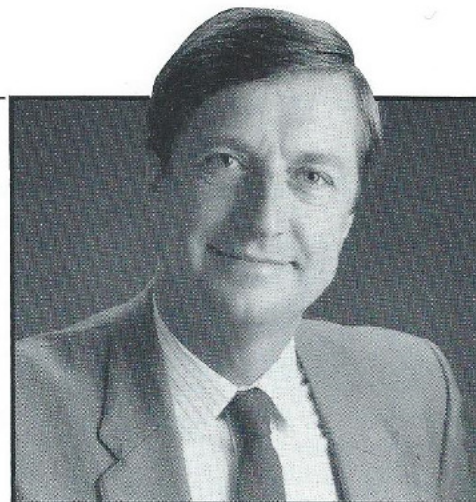
According to Peter Williams, general manager, European Operations, "Yves-Noel's recruitment is part of a long-term strategy to bring a greater degree of international experience to our European management process."

Yves-Noel's background is impressive. Prior to joining Amdahl, Yves-Noel, who holds degrees in sociology and law, worked in progressively more responsible Human Resources capacities at Dow Chemical and at Ford France. At Dow, he also served as the director of new business integration.

Says Tony Pozos, senior vice-president of Industrial Relations and Corporate Services, "Yves-Noel's addition is an important step in strengthening human resource management in a way that is appropriate to the multinational breadth of our company."

Yves-Noel will also be responsible for facilities. His major challenges will be supporting the development of the European business entities and ensuring that Amdahl maintains an atmosphere that is consistent with our corporate values and culture.

"I'm happy to be part of Amdahl," says Yves-Noel. "I like the people I've met, and the way the corporation is willing to develop itself in a highly technical field. It is nice to be part of an organization whose future is so bright."

Teamwalk

Leads Straight to Plaque

The Great Lakes Region sales/support office in Southfield, Michigan, has just been redecorated—with a plaque commemorating the group's sixth-place finish in the Detroit area's March of Dimes teamwalk (April 1987). The Southfield employees raised a total of $7,391, an amount that earned them a top-ten finish in a field of 534 teams.

Tony DeMory, regional vice-president, and Marc Papineau, district manager, both received individual awards for contributing over $1,000 (only twenty-six of the event's participants did so). Ernie Riddle, senior software support engineer, received individual recognition for contributing over $500. "We have a great bunch of caring people here in the Detroit office," says organizer Tom Barnett. "I had no doubt that we would reach our goal of a top-ten finish."

Photo courtesy of Great Lakes Region

(l. to r.): Dawn Collins, Sarah Ragazzo, poster child Mickey Shadd, Tom Barnett, and Katrina Beneker are all smiles after learning of the Southfield office's sixth-place finish in the March of Dimes Teamwalk event.
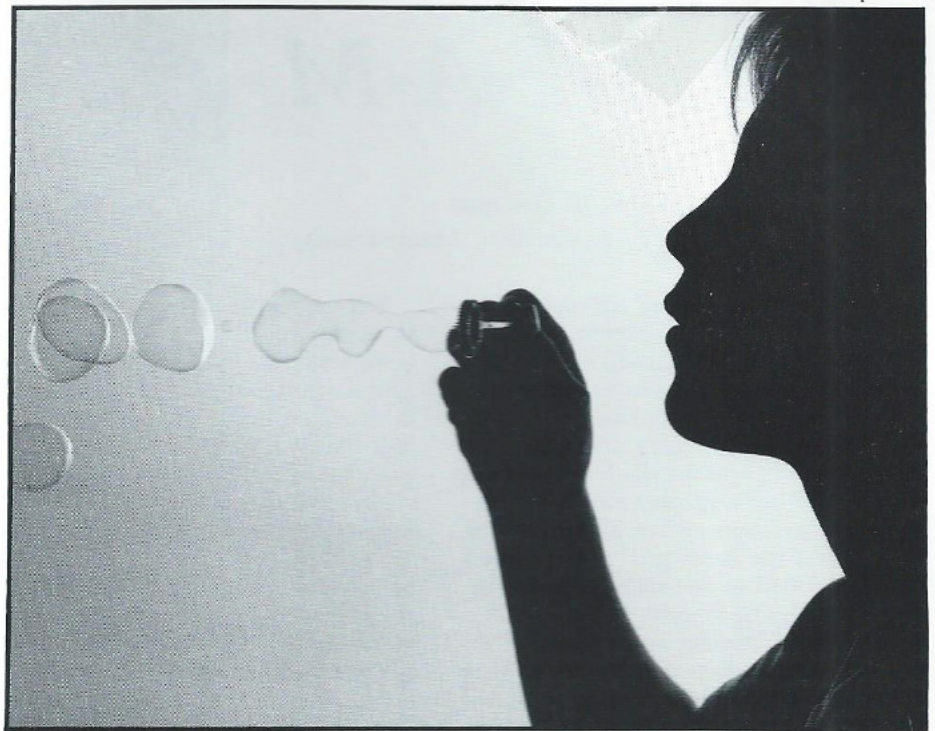
Update Photography Contest

As announced in the last issue, it's time for the second Annual *Update* Photography Contest. Put on your thinking caps and start developing those winning photographic ideas.

Last year's contest drew more than 150 submissions from around the world. Entries ranged from idyllic country scenes to brilliant fireworks. They also included lunar-like landscapes and a karate exhibition.

For the next contest, let your imagination roam. Suggested subjects are scenic shots, sports/ action photos, adult portraits, and children. A panel of experts will again select twelve winning photos for publication in the *Update*. Please remember, though, that if you take work-related photos, avoid proprietary materials or shots taken in technologically sensitive areas. Feel free to call Employee Communications (x6965, x7074) or your Employee Relations representative if you have questions.

Three top prizes will be awarded, as follows: First-Place Winner—a Yashica A-230 AF camera with a 35-70mm zoom lens; Second-Place Winner—a Tokina 35-135mm zoom lens; Third-Place Winner—a khaki Nikon shooting jacket and ten rolls of Fujichrome 100 ASA slide film (135-36). *Note: If desired, you may substitute a prize of comparable worth.*

Boy Blowing Bubbles, Photo by Robert Stegmann, first-place prize winner of the 1986 Update Photography Contest

Photo Guidelines

1. Color and black and white prints, 5" x 7" or 8" x 10" are eligible.
2. Prints must be mounted on an 8" x 10" or 11" x 14" piece of white matte board, available at any camera or art supply store.
3. All entries must be accompanied by a signed release form (below).
4. Slides and other transparencies are not eligible.
5. All entrants must be Amdahl employees.
6. Entrants must make original negatives or transparencies available upon request.
7. The contest deadline is 5 p.m., February 26. Mail your photos to: *Update*, m/s 300, Bldg. 3, (x6965); or bring them in person to Room 888, Bldg. 3.

MAIL TO: *Update*, M/S 300, BLDG. 3, OR DROP OFF AT RM. 888, BLDG. 3.

Name _____ Employee Number _____

Photographer's Work Location _____ Mailbox I.D.: (if you have one) _____

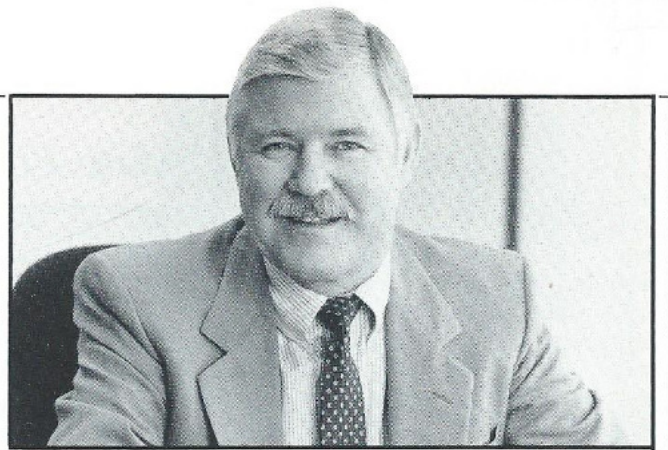Work Phone _____ Home Phone _____ Mailstop No. _____

Brief Description of Photo _____

_____

Remember, this release form must accompany each entry and gives Amdahl the right to reproduce winning photographs for company use. Amdahl cannot guarantee the condition of returned submissions.

Employee Signature

We've Got A
T-E-A-M

By Bill Flanagan
Vice-president, Manufacturing

One of the most significant results of Amdahl's Quality Improvement Process has been a change in people's attitudes towards teamwork. The company is seeing a greater emphasis on cooperation—we're all striving to meet the same goal. I have been gratified to see many fine examples of teamwork between Manufacturing and Processor Products, between Manufacturing and Customer Services, and within the Manufacturing organization itself.

Last summer, for example, Processor Products was working on a new machine level for the 5890 and needed additional system test engineers in the Bringup area. Although Manufacturing was busy with its own work, three engineers from the System Level Test department in Plant 3 (Building M-4) were sent to Processor Products to provide additional help.

The teamwork between Manufacturing and Processor Products is also manifested in the organizations' collaboration on designs that will be more manufacturable and that will help meet the company's cost objectives.

Manufacturing is experiencing renewed teamwork with Customer Services as well. An example of this occurred not long ago. For years, Plant 1 (Building 5) has been building our system cables. To ensure that the installation process goes smoothly, a Manufacturing engineer regularly visits customer sites. After a recent visit, the engineer reported that it was taking hours for the field engineers to lay the cables because they first had to unpack and resort them. The Manufacturing engineer came up with a solution: packing the cables in the order in which they will be used. Now, when the field engineer installs cables at a new site, the one needed first is on the top; the one needed second, next, and so on. As a result of this solution, the amount of time for cable installations at customer sites has been reduced by two-thirds.

Within the Manufacturing organization itself there has been more teamwork than ever. This year we made a special effort to have everybody within Manufacturing reach out to their customers and ask, "Am I giving you what you need? Am I meeting your requirements?" As a result, we're seeing more openness and understanding of each other's processes, needs, and problems.

Although we have come very far in establishing teamwork throughout the corporation, we have just scratched the surface. There's a lot more to do. We need to continue to help people understand that we're all striving towards the same goals, that we're all part of the same team. The rest is easy. When people see that teamwork really works, it becomes contagious. After all, who's going to knock success? □

How You Can Contribute To The Amdahl Team

The strength of a team depends on the strength of its individual members. Following are some tips to help you refine your own performance and to increase your effectiveness as a member of the Amdahl team.

• Don't keep doing something simply because that's the way you've always done it. Be willing to wipe the slate clean and to look at your work process with a new pair of eyes.

• Be willing to absorb information from other people that might help you perform your job more effectively.

• Don't point fingers. Don't be quite so willing to say, "If only they would do something different, I could. . . ." Ask yourself, "What can I do to make my organization run smoother?" Get away from finger-pointing and get to problem-solving.

• Be honest. Don't be afraid to admit that you have a problem. But after you admit it, be sure to correct the problem. If you don't know how, find somebody who can help you.

• Be supportive. Always be alert for opportunities to help other members of your team and other organizations within Amdahl. Conversely, always acknowledge the help that others are offering you, our business, or our customers.