

Plant Process Patented

Who Said All We Know About Is Computers?

Data General is receiving a growing number of U. S. government patents for its achievements in computer technology. But this month, Patent number 3,973,987 was issued for a water recycle treatment system - a non-computer accomplishment that helps us build computers.

While patents are sought for all sorts of legal reasons, this one for the recycling system at Building 5 serves to recognize the company's leadership position in creating conditions that make it possible for the business to grow. It is this self-contained, zero-discharge recycling system that made it possible to establish printed circuit board operations without environmentally harmful effluent, without long and potentially delaying cycles of government review and without taxing the municipal water supply.

The recycling system concerns itself with the metal plating portion of printed circuit board production which utilizes a number of potentially polluting acids. Traditionally, such operations rely on diluting acid baths and rinse waters until they can be safely discharged into waterways according to government standards. The Data General system successfully eliminates discharge through recycling more than 90 percent of the water to productive use. The only by-products are a bit of steam and some sludge which is trucked to an approved landfill area.

Dave Hewitt, printed circuit board materials manager, and Tom Dando, former PCB manager, were issued the patent which was assigned to Data General. At the time the plant

opened, the two engineers noted:

"Our background is electroplating. When the requirement to design a self-contained metal plating plant came up, we had open minds about how the problem should be solved. If our field was pollution control, we might have had some trouble. We might have taken all the facts presented us at face value. Most of the information we received indicated that a system like this could not be built. Our lack of bias meant we had no commitments toward a particular way to solve the problem."

The uniqueness of Data General's system begins as it separates the plating and rinse tank discharge and processes each type differently. Most systems drain the two together, dilute them to meet standards, discharge them, and replenish the system from municipal water supplies.

With the Data General way, water from the rinse processes runs through a series of holding tanks where metal particles settle to the bottom and are drained off. The water is then further treated by filtration carbon adsorption and ultraviolet light, then pumped back into the rinse tanks for reuse.

Solutions from the plating tanks, which contain the acids and higher concentrations of metals, are sent to a settling tank where the solid waste is drained and then to an evaporator where the water in the solution is boiled off. The remaining solids are the sludge that is carried away.

This is a major project, recognized for its uniqueness by a patent. But, it is innovation at every level of operation that distinguishes Data General from other companies.



CONGRATULATIONS-The careers of Test Engineer Mahesh Reshamwala and Supervisor Bob Young have many similarities. Most notably - they joined Data General on the same day in April 1970 and both were promoted to their new responsibilities in Southboro Shop Operations this month.

Experience Earns Advancement For Three In Shop Ops

Three employees, each with more than five years experience at Data General, have been promoted to new responsibilities within Southboro Shop Operations.

Jim O'Leary is supervisor in the wave solder and touch-up area. "I've learned a lot about the product flow from working in many different areas," said Jim. "It helps here can have on another operation."

Jim comes to his new position from two years as a night shift in machine repair, tool design and as an engineering aide.

Mahesh Reshamwala has garnered most of his experience on the test side of Shop Operations. He recently moved to his new post as manufacturing test engineer from lead technician in option testing.

"I'm now helping to support the option area, sort of as a liaison between design engineering and the manufacturing floor," said

Employee Stock Purchase Employees Benefit From Company Growth

Who says its hard to save money these days? Last month 908 Data General employees saved over \$116,000! They purchased 11,270 shares of company stock with a current market value of approximately \$569,000 for just \$453,000.

The stock was purchased for \$40.25 according to the provisions of the Data General Employee Stock Purchase Plan. That was 85 percent of its average market price on February 2, about 20 percent less than the market value in early August.

The purchase under the plan involved 25 percent of the eligible

In more than six years at Data General, Mahesh has been assigned to final assembly, memory test, CPU test and power supply assembly. He also has served as an engineering aide for new products. He received a BS degree in telecommunications in his native India. He is presently working towards an MSEE at Lowell University.

Bob Young also has a technician's background with six years of experience in assembly, wave solder, peripheral assembly and test, memory test and CPU test. Bob becomes supervisor of option test after being a group leader in the test area for the past year.

"I've learned quite a bit since I've been here, especially on the testing side," said Bob. "I feel I can use this knowledge for the betterment of the whole area."

Bob has bettered himself with technical and business courses outside of working hours under the company's educational reimbursement program.

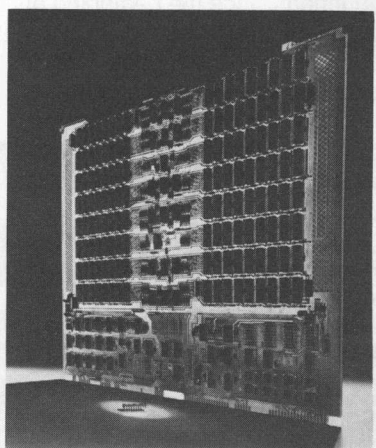
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STOCK

NOVA Line Expands Up

The NOVA 3/D, announced this month, provides another first for Data General and an upward extension of the NOVA 3 family.

NOVA 3/D marks the first time a major minicomputer manufacturer has put 32,768 words of semiconductor memory on a single printed circuit board. The 32K module uses a conventional two-layer printed circuit board organized around 4K Random Access Memory (RAM) chips designed and manufactured at Sunnyvale. The 32K module provides manufacturing advantages to Data General and ease of maintenance for customers.

At the top of the NOVA 3 line, the 3/D will be used by systems builders and end users in operations that require medium to large system support in commercial, timesharing, computation and process control applications. It features a memory mapping and protection unit (MPPU), runs under RDOS, and has a dual operations capability.



Data General is the first major minicomputer manufacturer to put 32,768 words of semiconductor memory on a single printed circuit board.

DASHER™ Made By Data General

Data General broadened its line of in-house manufactured and assembled peripheral devices with the announcement this month of the DASHER™ family of terminal

printers.

The DASHER line includes the first 60 character-per-second terminal printer manufactured by a minicomputer company. The full line includes 30cps and 60cps units in keyboard or receive only versions. Keyboard models can be used off-line as typewriters.

Peripheral products now represent more than 50 percent of the content of Data General systems. The company makes its own magnetic tape drives, certain disc drives, paper tape readers and CRT display terminals.





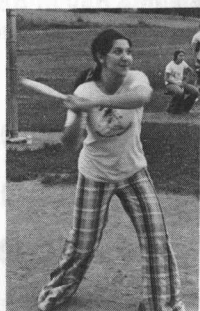
Training at Westbrook - Technicians recruited from the campuses of northern New England's technical colleges continued their education in June with two weeks of classes at Data General-Westbrook.

Instructor Marty Pellegrino of the Southboro Training Center guided approximately 30 employees through the program. (at right) Jack Kidder (left) and Jim Welch get the hands-on "lab" time that's part of the two week course.

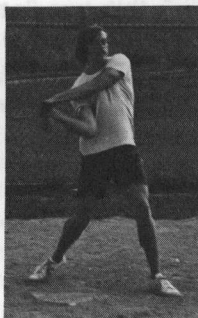
Sobo Accounting Tips The Scales 21-3

On a warm summer evening, Southboro accounting challenged corporate accounting to a softball game. The encounter was set for the Neary School field in Southboro. And, it wasn't long before Southboro left corporate in the dust. The final score 21-3.

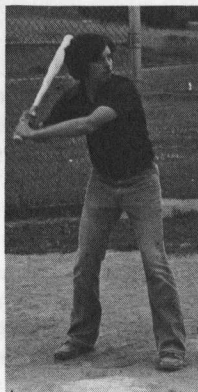
As you can see, participants were as determined to hit the ball as they are to balance the books.



Janice Elloian



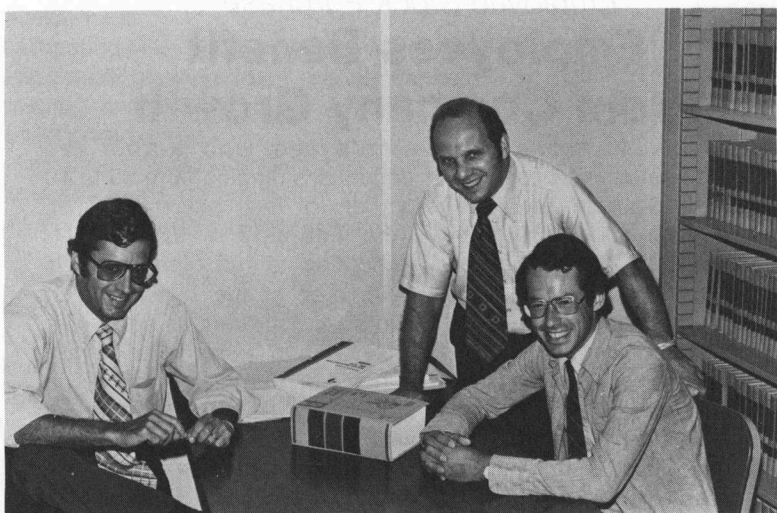
Chuck Leveille



Dick Jaillet



The New Look-Enlargement and renovation of Southboro Building 5 cafeteria was completed early this month. In addition to the added space and brighter surroundings, "The Butcher Block," a hot meal line is in operation each noontime.



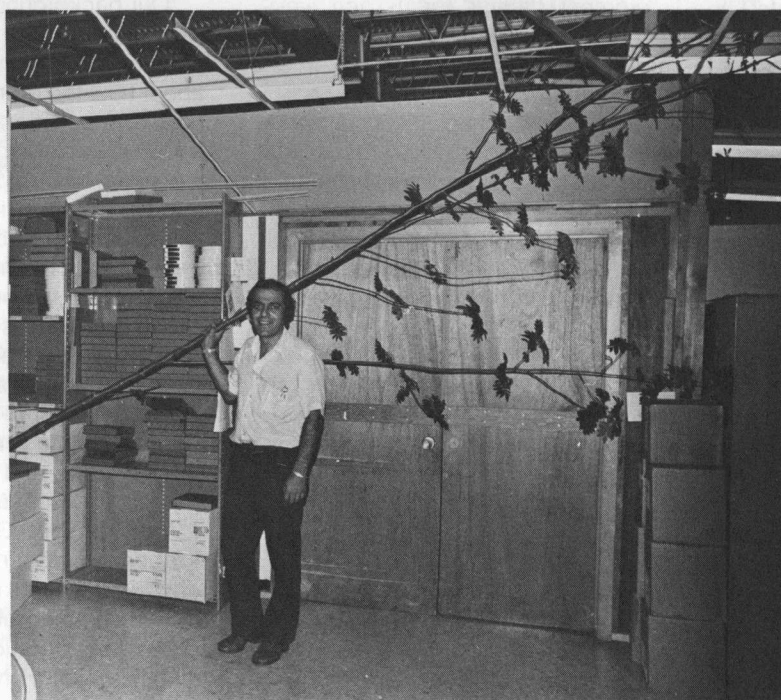
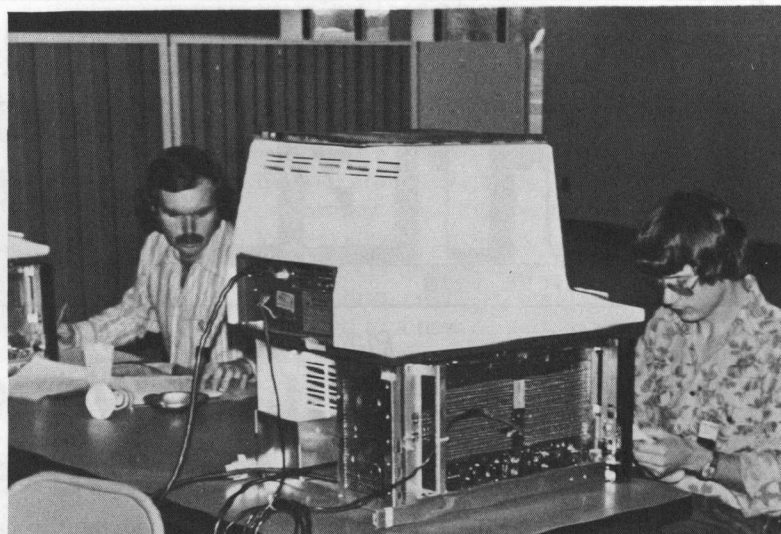
NEW EUROPEAN ATTORNEY Hugo Wittop Koning (right) familiarizes himself with Data General operations at Southboro before settling at the Paris office this fall. His counselors are (left) John Ganick, staff counsel, and Jake Frank, corporate counsel at Southboro. Hugo brings private, governmental and computer industry legal counsel experience to his new position.

STOCK

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complete the full year of employment that makes them eligible. The 908 was close to 350 more employees than last year. Seventy-five "first-time" participants have joined the plan for the new period beginning August 2. They will join other employees in purchasing stock at \$41.50 -- 85% of the average market price on August 2 or 85 percent of its average market price on January 31, 1977, whichever is lesser.

The plan is very flexible for the employee. Deductions may be increased or decreased once in a payment period. Withdrawal from the plan may be made any time prior to the last business day of



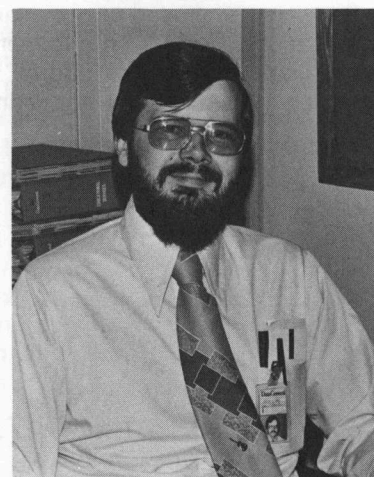
A TREE GROWS IN BROOKLYN . . . and at DG Southboro! When Mike Puopolo of software manufacturing received this 24-foot ash tree as a new home gift, the question he was asked most was "How are you going to get it home?" But, the best story is that his co-workers got it into the building and behind his desk by 7:30 a.m. in time to surprise him!

each payment period. Data General will refund the entire balance accumulated from payroll deductions since the beginning of the period.

Of course, with any stock purchase, there is no certainty as to future performance of the individual stock or the stock market. The value can increase or decrease.

The pride of ownership comes when the stock certificates are received. At the end of each period, certificates are hand-carried to supervisors for distribution to employees. Both supervisors receiving the certificates and employees to whom they're distributed acknowledge receipt by signing and returning a "receipt of stock" notice form to the Treasurer's office. Personnel in the field, Westbrook, Portsmouth and Sunnyside receive their certificates by certified mail unless there is someone visiting at Southboro who can hand-carry them to their destination.

The Employee Stock Purchase Plan was adopted by the Board of Directors on November 10, 1970, and approved by stockholders on January 12, 1971. The Plan is intended as an incentive and to encourage stock ownership by all eligible employees so they may share in the financial growth of the company.



MEETING THE CHALLENGE. Bill Grove was among the first six people who helped establish Data General's field service depot at Southboro in 1973. Bill likes firsts. He's accepted the position of depot manager for the new European field engineering support center at Frankfurt, Germany. He moves from depot supervisor at Framingham to join Larry Elias, who traveled across the Atlantic to become European engineering support center manager. What's first on his list of "things to do?" In between familiarizing himself with his new surroundings, Bill will be attending a three-week "speed" course to learn German!

A 15-Mile Bike Ride Is His Eye Opener

We all have morning rituals that help us get up and going like drinking a cup of coffee, sipping a glass of juice or reading the morning paper. For Dick Sonderegger of Southboro engineering it's a 7 to 15 mile bike ride from Hopkinton to Data General. Dick, who has been biking to work since October 1972, is so accustomed to the routine he doesn't really wake up until after the first five miles!

Dick became seriously interested in bicycling five years ago with the purchase of his first ten-speeder. This interest was heightened when he was faced with buying a second car. Instead, he bought a better bike and made that his primary means of transportation. When a resident of Marlboro, he learned a variety of routes along back roads that gave him anywhere from a 7 to 15 mile workout. In fact, he discovered that it took one minute less to travel by bike than by car from his Marlboro home. Now living in Hopkinton, Dick's shortest route is 6½ miles and he's working on blazing longer ones.

The only things that stop Dick from commuting by bike are snow or ice covered roads and below zero temperatures. According to Dick, in the winter it's important not to get over-heated, so he adds only a turtleneck sweater, downy vest, and long pants to his regular attire. In summer, he recommends bikers wear 100 percent wool shirts for absorbing perspiration and protecting against chill.

Dick is a firm believer in wearing a helmet while biking regardless of how slowly he's traveling. It only took one hard fall while peddling 25 m.p.h. to be convinced.

Dick's ride to work is nothing compared to his recreational rides. Once a year he joins a group of biking enthusiasts for a

100-mile/eight-hour jaunt around New England. His longest ride in one day was 120 miles from Lincoln, Mass. around Mt. Wachusetts and back. During the summer of '74 he biked across Wisconsin from LaCrosse to Kenosha -- 300 miles in six days! In 1975 his travels took him 3,000 bike miles all toll. Dick averages 18 - 20 m.p.h. on the straight-away and 30 to 35 m.p.h. down hill.

There are health benefits. "I'm not in any sort of olympic shape," said Dick, "but during the first year I lost five pounds and four inches off my waist without dieting. I feel physically fit. It's a neat feeling."

And there are economic benefits. Dick's transportation expenses are low. Once a year he takes the bike apart and gives it a thorough cleaning, invests 50c in oil and approximately \$30 in new tires. His 10-speed, 21 pound Cinelli, which he found in a "hole-in-the-wall" bike shop in Worcester, Mass., is his fourth and best bike. "When a bike is well-made, it doesn't wear out easily," said Dick, "and you instantly feel the difference when you're riding a better bike."

Dick's considering getting involved in road racing and currently is entering time trials. He joined a northeast bike club this summer to keep up-to-date on local activities and competitive meets.

"I've always been interested in racing," said Dick. "I gave up fast cars for fast bikes! Over the years I've also participated in skiing and sailing competitions."

It's hard for Dick to pinpoint why he's so interested in biking except to say "I ride because I really, really like it. And you know, it's nice to really like doing something."

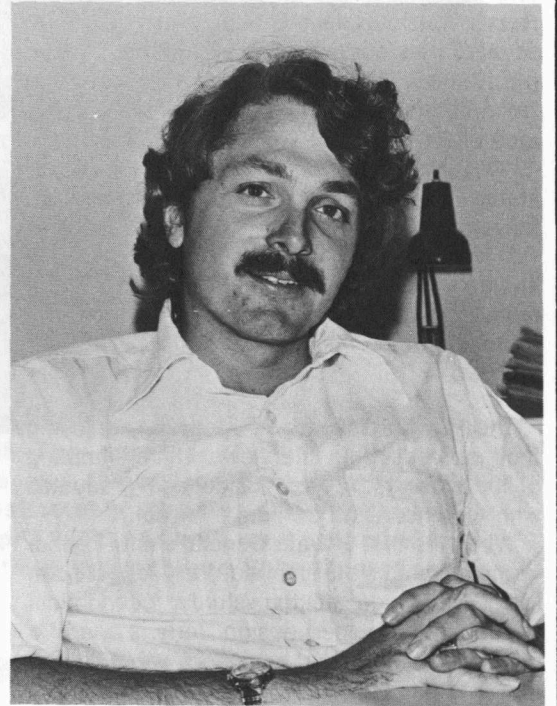


It's a familiar sight to see Dick Sonderegger peddling his bicycle through the parking lots at Data General outfitted in specially made riding shorts, shirt, shoes, helmet and gloves.

PROFILE

RON GRUNER 22,000 NOVAs Later

(This is the first in a monthly series. Profile is intended to better acquaint employees with Data General through close-up looks at people who have grown with the company and others who have more recently brought their expertise to our operations.)



When Ron Gruner came to Data General, 40 people had just shipped about 40 NOVA computers. As a junior engineer, Ron was hopeful that he could contribute to the shipment of hundreds more. Today, as director of large systems development, he finds it easier to envision future achievements than he did seven years ago.

"Back when I started in '69," says Ron, "people were talking about Data General having sales of \$20 million in the not too distant future. At that time, at least to me, that looked like an infinite number. It was hard to conceive. But, when people talk a billion dollar company now, that, for me is much more real than \$20 million in 1969."

Ron, who at 21 years of age came east from Oklahoma expecting to find a massive complex, remembers walking through a muddy parking lot and up wooden stairs to what's now Building 1. It's the physical changes since then which he finds most dramatic.

"The character really hasn't changed," says Ron. "The company still puts a good deal of emphasis on individual responsibility. I don't think we have a strong bureaucracy encumbering our contributors."

The unchanging character extends beyond the engineering environment in which Ron has worked as part of the SUPERNOVA, NOVA 1200, and ECLIPSE design teams. Ron also sees a management stability setting us apart from young companies, many of which have not survived.

"We've grown from zero to well over \$100 million in revenues without infinite political struggles and without a large turnover of cor-

porate management. We've done it extraordinarily smoothly," reflects Ron. "When you sit inside here, you see all the problems. It looks like things are going terribly. But when you try to step back and look at things in perspective, particularly relative to how many other companies have done the job, I think we've done a good job."

Being able to see things in a broader perspective is of growing importance in all areas of the company. "It's important," states Ron, "to design products nowadays not only to answer what the hardware can do and what its limits are, but what the limits of the organization are. This is particularly true as we develop large systems which require resources from all over the company."

Ron also takes a broad view of things when relaxing. He's into soaring and has enjoyed the skyview from sail planes from New England to the Rocky Mountains.

Reg. Sales Managers Pick Best of Q3

The outstanding U. S. sales engineers for the third quarter, as chosen by their regional managers, have one thing in common - high dollar volume.

Russ Cramer led New England in both bookings and new accounts.

In the Midatlantic region, Ray Tellalian demonstrated versatility as he closed sales on systems for uses in educational, scientific and business environments.

Bob Nikora is guaranteeing continued membership in the Million Dollar Club with his performance in the Midwest region.

In the Southwest, Mike Baukol won the nomination of Manager Bill Adams.

Greensboro's Bob Taylor completed his first full quarter as a DG sales engineer by closing a major new account.

In the Northwest, Tom Stuteville closed three major new accounts in the Seattle Area.

And, in federal marketing, Manager Stan Joseph cited Bob Woodward for "account penetration and control" as well as a "tenacity for closing business."



Keep 'em Healthy - Dot Loker joined Data General - Westbrook this summer as industrial nurse. Dot's goal is to maintain the excellent safety record already established at the Maine plant.

DG Computers Are Olympic Standouts

If there were gold medals for computing world records, Data General would have been in contention at the games of the 21st Olympiad in Montreal last month.

Showing almost as much improvement in speed and preci-

sion as the athletes, computer technology provided the fastest and most precise timing and reporting of events ever.

At the Olympic Pool, a special interface constructed on a NOVA 1200 flashed winning times directly from the pool to the scoreboard. Input to the computers came from some of the most sophisticated electronic timing equipment ever seen at the Olympics.

From the Velodrome, where cyclists competed, results were flashed within seconds as computers preprogrammed with participants' names allowed operators to post results on the scoreboard almost as soon as the event was over.

Published monthly for Data General employees worldwide.

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College "Recruits" Handle Variety of First Assignments

In growing for the future, Data General is putting together a blend of talented people - seasoned professionals, people at mid-career seeking new opportunities and recent college graduates. This year's "class" of college "recruits" is represented in just about every area of the company.

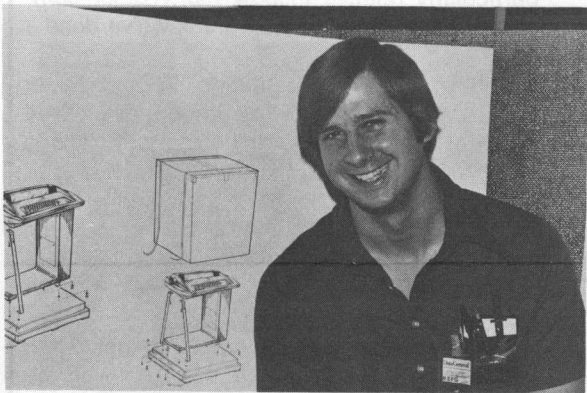
"Our recent grads are among the best," states Charley Polachi, college relations coordinator for Data General.

"They were selected from more than 1,000 students interviewed at nearly 40 colleges and many who submitted their applications directly to Southboro."

The new employees are apparently enjoying their jobs based on interviews with a sampling of the close to 100 recent college graduates who've joined Data General this year.

When the first of Data General's new Dasher terminal printers are shipped, Jerry Jagers can look with pride at the sturdy, economical packaging he helped design. Jerry is one of a relatively new breed of engineers with a degree in packaging. He came to Southboro from Michigan State at the end of the winter term in March.

Jerry likes central Massachusetts: "The farmlands, open space and houses not close together are quite a change from suburban Detroit."



Jerry Jagers designed a new product package.

"I like the atmosphere," says programmer Roger Tobin. "Any closer to Boston and I'd have a difficult time functioning."

Roger came east from the Rocky Mountains with a degree in computer science from the University of Colorado at Boulder.

Mike Ziegler was familiar with NOVA's at MIT where he completed his BSEE degree requirements this past spring. Now he's getting into ECLIPSE as a design engineer in large systems development.

Attracting Mike to Data General was its size - "small and growing fast;" its atmosphere - "casual;" and its opportunity - "challenges in design engineering."

Those are likely the same reasons other engineers came on board this year from MIT, RPI, WPI, Stanford, Northwestern and Princeton.

Ken Osowski, fresh from Columbia where he received a master's degree in computer science, didn't travel quite as far to reach Southboro as some college grads do. But, the Westfield, Massachusetts resident has been on the move ever since.

Ken spent just two months in his first Data General position, coordinator in guest marketing, where he helped set up a new customer center. On August 1, he joined systems engineering at Southboro.

"I wanted to get more into the technical areas," said Ken, "and everyone helped me fit in where I wanted to be."

Ken has his eye on a sales career but feels free enough to consider many different avenues.



Ken Osowski "wanted to get into the technical areas" and did!

Jim Hayes is out of Colby College and into sales at Data General. As a sales administrator, he's learning the computer business.

A Westboro resident, Jim wasn't really sure what he wanted to do and decided to look into a "hometown" company. With a business degree, he admits that "before I came here, I knew nothing about computers. But, in checking contracts, prices and order changes, you get an overall view of the company. You even learn to be technical from talking to people."

Karen Bastek and Yvonne Pacini interviewed with Data General at the University of Lowell. Today, they are learning their way around manufacturing at Southboro as supervisors-in-training.

In just a few weeks, Karen has had supervisory experience in the wave solder area and is now getting into production techniques with an



Karen Bastek and Yvonne Pacini enjoy first line supervision.

assignment in manufacturing engineering. Pretty good for an accounting major who decided she didn't want to get into the numbers full time.

Yvonne, who majored in industrial management, worked summers at slower paced companies. Of Data General, she says: "It's very busy and I like the atmosphere. Since things are always expanding, there's a lot of opportunity"

Yvonne so far has worked in production control and 15-inch printed circuit board assembly. She enjoys first-line supervision.

Jordan Young is getting paid to work at his hobby. As a systems engineer at Southboro, the Dartmouth Political Science grad is pursuing an interest which developed on a timesharing terminal in high school, was nurtured as a member of a computer club in Princeton, N. J. and was expanded outside of class at Dartmouth.

"I wanted something more than just programming," says Jordan. "Here I'm getting involved in developing programs for problem solving within Data General and in pre-sales support."

Jordan's not sure of what the future holds. But, his fluency in Portuguese and Spanish

could lead to an international assignment. Right now, he likes the city life style in Cambridge - about 30 minutes away from work.

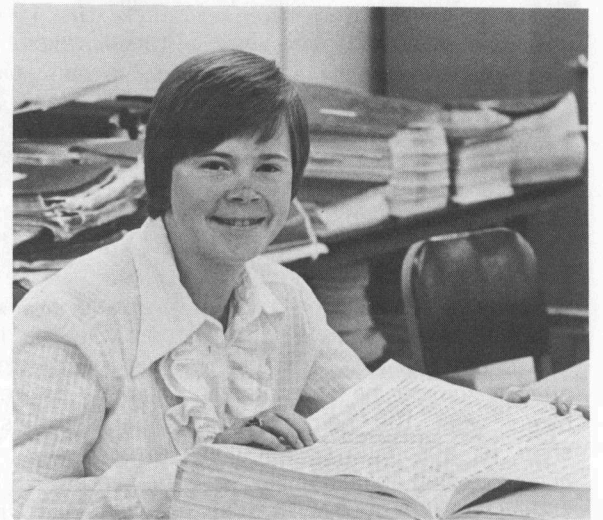
Many of the recent college graduates at Data General are in the money end of the business.

After just three months, Mike Gregory is the longest service employee in his area. Mike, who picked Data General because he liked the plant accounting concept, was the first person assigned to a new accounting office set up to handle the finances in shop operations.

While waiting for the new office to open, the University of Massachusetts MBA grad worked many a late day as an easterner on pacific time. It was necessary as he handled accounting for Sunnyvale, California operations.

Dorothy Bellows, who has been concerned with inventory and general finances of the company's Hong Kong subsidiary, likes the management side of accounting. "Everything in school is from the viewpoint of the public accounting firm," she states. "But, I like the attitude of industrial firms better and there's a lot of opportunity, especially here."

A lifelong resident of Concord, Massachusetts, Dorothy received her master's degree in accounting this year from the University of Massachusetts at Amherst.



Accountant Dorothy Bellows likes "the attitude of industrial firms."

Mark Blundell worked for a commercial bank as a foreign exchange and eurodollar dealer before receiving his master's degree in international affairs from Tufts University's Fletcher School of Law and Diplomacy this spring.

"Compared to commercial banking, there's a 'boomtown' atmosphere at Data General," says Mark.

Mark works as a senior financial analyst in the company's treasury department with responsibilities that include foreign exchange, international investments, pricing and taxes.

Dave Young, an operations analyst for field engineering, is presently learning his end of the business on assignment in the company's credit department. Beginning next month, he'll get into the area of forecasting activity for the division.

Dave has an MBA from Boston University and sees his work at Data General as "completely enlightening and refreshing" compared to his most recent employment - five years in the U. S. Army following a West Point Education.

Karen Chiacu is learning Data General's material movement system from receiving through stock. To best prepare her as an inventory planner, Karen is spending time as a troubleshooter in receiving and will soon move over to inspection.

"I didn't realize that I was going to be so busy so fast," said Karen, who comes to Data General from Boston College where she received a business degree in operations management.

While the fact that they're recent college grads distinguishes them from other Data General employees, it's the quick involvement in the real world through all areas of the company that seems to make these "recruits" a part of the company within a very short time.