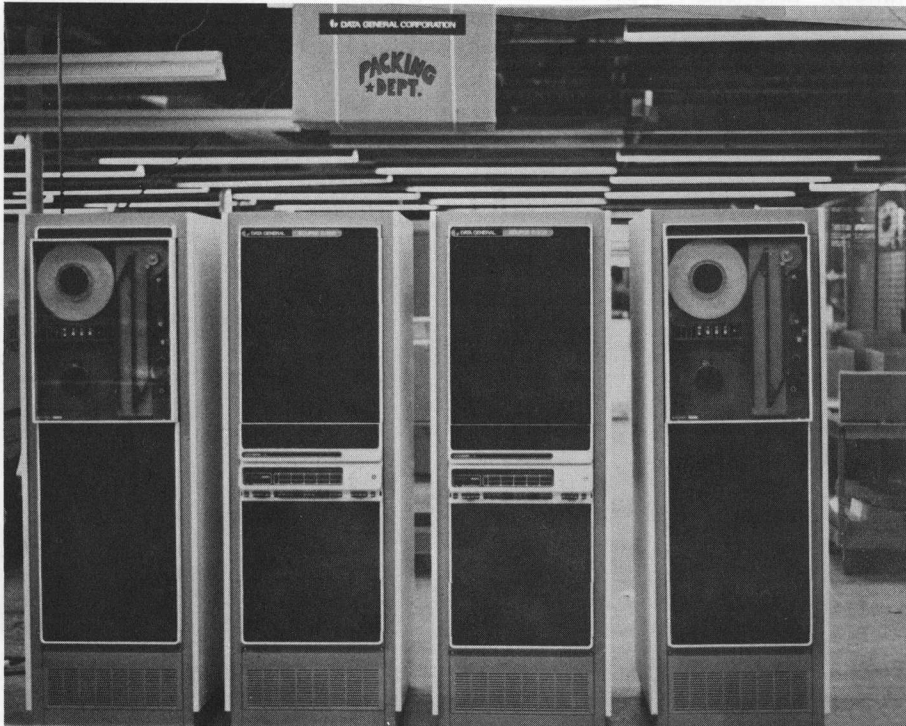


# INTERFACE

Vol. 1 No. 9 - August 26, 1975



## FIRST C/300s DELIVERED!!!!

The first ECLIPSE™ C/300 computers to be shipped by Data General arrived in packaging at Southboro on Friday afternoon, August 1. That night, they were on the road to North Wilkesboro, North Carolina and delivery to Loew's Companies, a major distributor/retailer of building materials with 130 stores in 15 southeastern states.

The C/300, introduced this past spring and already accounting for several million dollars in orders, is Data General's first commercial data processing system. Built around the ECLIPSE computer line, it makes use of two major developments from Data General engineers and programmers — a central processor designed specifically for commercial operations, and INFOS™, a sophisticated data base-oriented file management software package.

The first shipment had been announced (April INTERFACE) for "mid-summer", a goal fully achieved with the August 1 departure from Southboro. Appreciation for this achievement was voiced to those within the sound of the public address system at Southboro by Norm Ross, manager of shop operations. The appreciation continues to echo throughout the company to all Data General employees.

## Field Service Engineer's Territory Has No Bounds

Few field service people have the experience or experiences of Gerd Orgeldinger. Gerd has been a worldwide troubleshooter for Data General for the past four years and enjoys keeping customers happy.

Though mainly serving New England customers out of the Waltham, Massachusetts office, Gerd has logged thousands of miles on special assignment to the United Kingdom, Sweden, France and Iran. These worldwide trips have provided amusing moments as well as technical challenges.

In Iran, where Gerd was on hand last March to install three systems, he marveled at the sight of a truckload of Iranians arriving at a government building to carry the double-size computer cabinets up two flights.

Even more amazing was that the year old building had only "borrowed" electricity for lighting from a nearby building. "I told them no power and I was going home," said Gerd. "They had electricity for the computers the next day."

While in Iran, Gerd also trained distributors and observed that our computers were crated well for

shipping. They must have been to perform flawlessly after sitting in the open in a shipyard for several weeks.

### Feedback

Gerd takes note of more than the good things on his trips. He wouldn't be doing his job, if he didn't. He seeks to discover what causes problems and reports back to the responsible departments. His feedback can range from complaints about production to suggestions on shipping and recommendations on documentation.

When detailed to Sweden last fall to personally install a disc unit after two had previously failed, Gerd found the installation instructions incomplete and components loose from shipping. He informed the appropriate departments so that changes could be made.

"When you go to a good customer and something doesn't work because a mistake has been made, it's very bad," says Gerd.

Continued on  
Page 3

### Package Design

## Tape Tray Costs Less But Offers Much More

Data General customers are receiving their computer program tapes in a new package these days. The eye-catching, versatile tape tray is the creation of packaging engineer Morris Freed who worked with graphic arts, field engineering and programming people to successfully produce a better product at lower cost.

A modified package was first sought in an attempt to add corporate identity to the former plastic tray which did not carry the Data General name. Investigation soon revealed potential financial savings and other benefits through a more drastic redesign including a change from an injected molded polystyrene tray to a paperboard tray. Before going into actual use in June, the need for a change became critical as suppliers of the oil-based plastic tray could no longer meet Data General's demand for them.

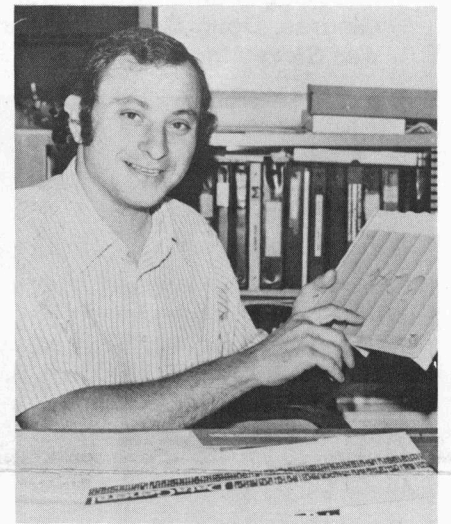
Between the time the new package was thought of and one was needed, many advantages had been worked into the design:

- The change from polystyrene to paperboard saves 70 percent in material costs and utilizes a replenishable resource.
- The knocked down boxes occupy only 20 percent of the space needed to store the old trays.
- Loading the boxes for customers takes less time.
- The boxes stack and can be marked easily by the user.

### Savings

Based on a conservative estimate, direct annual savings of \$28,000 are predicted with the use of the new paperboard computer tape tray. The initial expense for the change was only \$300.

The change from a molded product to a smooth edge paperboard box allowed the box size to be reduced to approximate standard 8½ by 11 inch printed matter which is often included when shipping program tapes. Less extra packaging material will be needed to fill the "holes" when all the old trays are purged from the system and shipping boxes are re-sized.



Packaging Engineer Morris Freed explains the shortcomings of the former computer tape tray.

### Identity

Artist George Ward of advertising provided the black on white cover design and white on black inside color scheme that established the Data General identity with the customer.

To help maintain this identity, the entire package was copyrighted through the efforts of the company's legal department.

### User

The Data General customer is the real winner with this packaging change. Computer program tape trays have been a cumbersome item. For those who store program tapes, the old trays could only be laid flat and stacking, at best, was tricky. Labeling required tapes or stickers to be affixed to the polystyrene. Now a user can lay the paperboard boxes flat or stand them on edge and easily mark the tray in specially provided spaces.

For those who adapt the trays in order to hang them near terminals, the new tray can easily be taped to a flat surface by simply cutting off the top cover.

### Production

With the sudden scarcity of polystyrene trays, the expected 12 week cycle for supplying the new computer program tape trays for actual use was cut successfully to six weeks. The availability of the resource and the efforts of the supplier, Champion Packagers of



**Not just another pretty package! This computer program tape tray combines its good looks with a low cost, versatile easy to use paperboard.**

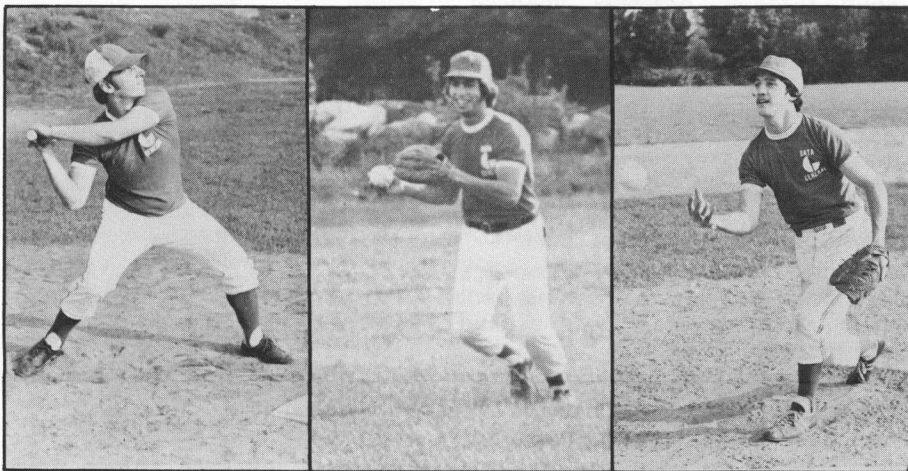
Indirect savings can be measured in many different ways. A standard size skid carried boxes containing less than 700 of the "old" trays. The same skid now holds 5000 knocked down trays. This allows for more trays on hand and less chance of delay due to unavailability.

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## DG's Southboro Sluggers

Data General's entry in the Southboro Slo Pitch Softball League had a fair season in the record books but an outstanding season as far as team spirit and individual enthusiasm were concerned. (left to right, front row) Team members are Steve Rowe, Wally Raymond, Coach Tony LeConti, Dick Leavitt and Jim Compton. (Second Row) Bob Levinson, Henry Ainsworth, Charlie Peterson and Bob Funk. (Back Row) Mike Parrish, Jim Cross, Dick Gingras, Doug Cole and Lynn Story. (Not present for the photo was Steve Manry).



At Bat —  
Charlie Peterson

A Good Catch —  
Bob Levinson

On the Mound —  
Mike Parrish

## People Make Sales

When a competitor's computers are on order as part of a million dollar system, even a superior Data General C/300 needs a sharp sales engineer to make that competitor step aside when the next sales situation arises.

At Santa Ana, California, Data General's Jim Samuelson did not accept the obvious advantage of the competition at face value and move on to an "easier" prospect. Instead, "I used the only selling approach I know," said Jim. "I proved to the customer that the C/300 could best meet his requirements."

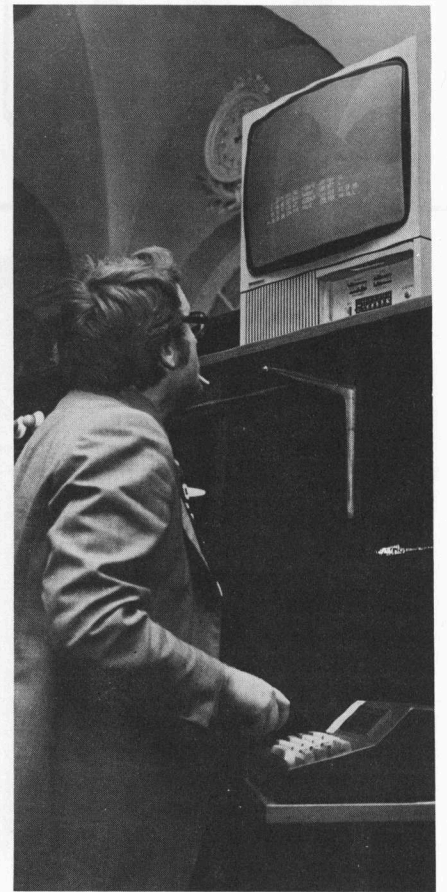


Jim Samuelson

Jim sold an ECLIPSE C/300 system for processing classified advertising billing at the SANTA ANA REGISTER, one of the nation's largest billers of classified space. He sold the system's capabilities to win the sale over a firm that was installing four of a competitor's computers as part of a computerized typeset system.

Western district sales manager Chuck Presto explains: "Jim won the order despite the fact that Mergenthaler (the typeset equipment supplier) already had an order for more than a million dollars with the paper, and offered a lower total price for the data processing system.

The Santa Ana sale might have been an easy one to pass by, but Jim was convinced of the C/300 features and confident in his ability to sell it.



**Scandinavian business people are more aware than ever of the value of minicomputers, particularly Data General's NOVA 2/10. Twin NOVAs plus 25 terminals provide the Stockholm Stock Exchange with a new, quiet and efficient way of trading the exchange's 140 securities. Bids and sales are calculated by the NOVA and displayed on monitors while brokers enter their bids on the keyboard. Prior to the system installation, transactions were manually recorded and the bidding process was a noisy, hand waving affair as bids were called out and posted on a blackboard.**

## Security Aims For Zero Loss

"So what if something is stolen, insurance will pay for it."

"Why do we need a new badge system? They don't trust us, I guess."

"Why waste money on all those guards? They must cost more than we could possibly lose."

Bob Gilbert, Data General's manager of safety and security, believes observations such as these could result only from an incomplete understanding of the role security plays in industry today.

"An effective industrial security program prevents all losses, not just thefts," explains Bob. "Losses result if anything of value is stolen, damaged, destroyed or accidentally discarded. Included is premature or authorized disclosure of information to people without a 'need to know.'"

Bob believes security programs more than justify their cost when they concentrate on loss prevention. For example, a security officer can be responsible for preventing a serious fire by spotting a smoldering waste basket or hot soldering iron tip during an off-hours check of a manufacturing area. His follow-up report would serve to notify supervisors in that area of the hazards so that procedures could be implemented to prevent recurrence.

A security officer's job is to detect and report and, in some instances, to help reduce or eliminate a problem. Guards have been trained in safety procedures including use of fire extinguishers and some, on their own initiative, will be undergoing first aid training as well.

### Theft

While involving much more than theft prevention, security does zero in on the intentional taking of property. Property is widely defined, ranging from parts and supplies to finished products and from slightly sensitive to highly proprietary documents. Though property

losses may be recoverable, information such as new product developments, marketing strategies and financial plans can be of unestimable value to others depending on the use made of them.

Theft most often involves two elements — desire and opportunity. "We seek to eliminate opportunities for theft," explains Bob, "through implementation of reasonable procedures and controls such as the recently strengthened access control system and the monitoring of material and property movement.

"It was necessary to move from a basic badging system to a more complex procedure of photo identification badges with access codes because of the increased number of employees and work areas within the company. As we grow," continued Bob, "it becomes more and more difficult to know where each person works. As Data General expands into new markets, our

access program has the flexibility to adapt to various security requirements."

### Cooperation

Even with this system, security must look to employees to make access control effective. If employees wear their badges at all times, it's easy to spot someone who does not belong in an area. "If employees adhere to these procedures," states Bob, "unauthorized access should not occur."

How the individual can make the difference is illustrated in the example of a visit by a salesperson from another company. If the sales representative is allowed to 'show himself out' without escort and employees are not wearing badges, the salesman could walk freely about the plant. If employees don't enforce the escort rule in a restricted area, this visitor could be given free roam of Data General.

How critical can this be? The visitor may work for a company which competes at times with Data General.

### Effect

Who is being protected by security?

"The company," says Bob, "and we employees are the company. As business develops, opportunities increase. If losses develop, it comes right off the top of profits and we must wait longer for new equipment or additional employees."

The effect of a serious loss is also felt by the customer who expects delivery according to a pre-determined schedule. This loss can extend into future business opportunities.

As in any industry, losses could be a problem at Data General due to the actions of a very few and the laxness of a larger number of employees. A better understanding of security may help all Data General employees live a little easier with the restrictions placed on us.

## SECURITY What Employees Can Do

- cooperate with security officers.
- wear badges.
- challenge anyone without a badge.
- question visitors in your area who are not accompanied by a Data General employee.
- observe restricted area rules.
- put equipment and papers out of sight.
- keep important documents locked up.
- mark equipment and documents with your name or department name where appropriate.
- obtain property passes when moving material in or out of a building.

# Diskette Subsystem In Production

A new diskette subsystem designed for low cost data storage is in production in the peripheral manufacturing area of Building 4 at Southboro.

Announced in June, the system features data storage on a diskette — a flexible recording media about the size of a 45 rpm record. The "record" is capable of holding more data than most minicomputer memories while being less expensive than disc storage devices.

As with most Data General products, the diskette subsystem is made up primarily of components manufactured by Data General employees. This includes printed circuit boards, power supplies, controllers, adapters, sheet metal and software. The drive units and diskettes are purchased from an outside vendor.

## Pre-Production

The diskette subsystem, like all new products, was in development long before its announcement. Design engineering was charged with developing a system for inexpensive program or data storage.

Software specialists provided support for the diskette as an input/output device under RDOS (Real time Disc

Operating System) with file handling that is fully compatible with large moving head discs.

In between design and manufacturing came manufacturing engineering. It's at this stage in the life of any new product that material needs are determined, documentation produced and extensive systems tests carried out. In the case of the diskette subsystem, 10 units were produced for internal use.

## Marketing

According to Data General's marketing people, the subsystem is ideal for the growing number of small computer systems requiring convenient cataloging and filing of data. It can be used at terminals of large computer systems where the remote location needs extra storage for local data processing. The diskette is also suitable for software utility purposes.

For those who like statistics, the diskette is available in 315K byte (single drive) or 630 K byte (dual drive) configurations and includes a controller for up to four drives with add-on configurations allowing a maximum capacity of 1.26 megabytes. A single drive system costs about \$2900 with a dual drive version about \$1,000 more.

## Field Service Continued From Page 1

### Changing Emphasis

Unlike the popularized Maytag repairman, Gerd does not dream of the day he has nothing to do. He observes a switch from repair to installation. The initial product is constantly improving and "as systems get bigger," he relates, "our people are doing more installations."

Gerd's four years of experience, however, still keep him more in the problem solving game than the installing business which is handled by newer people. And problem solving is far more involved these days. Improvements in manufacturing have been paralleled and exceeded by advancements in technology. The difference between working on the original NOVAs and the ECLIPSE is "like day and night," according to Gerd who has much praise for on the job training.

Gerd has attended only a few formal classes since completing his training at Control Data Institute. "I've learned a lot more here (working at Data General) than sitting in school," says Gerd. "I learned by visiting the production line. And, when I began at Data General more than four years ago, most of the field service training was informal with one guy passing the information on to another."

That informal training and today's more formal programs have apparently been good with Gerd's talents called upon often. He tells the story of 50 computers having arrived in England and ready for installation: "Stan Booth called at 4 o'clock one day and asked if I'd go to England for a couple of weeks. I said get me some money and a plane ticket. I called my wife at 4:30 and told her to pack my suitcase and I was on the plane at 8:30. I came home six weeks later."

### Interest

Gerd had an interest in electronics as a young boy in Luxembourg and developed that interest in the U.S. Army. Coming to the United States at the age of 21, he was drafted into the army almost immediately. Rather than complain, he took advantage and became deeply involved in electronics as part of the signal corps in Vietnam.

From the service, it was right into school and a year later it was out of school on a Friday and on the job at Data General on Monday. For his first three years, Gerd worked at the field service depot in Westboro. Last year he put his obvious human relations skills to work as he moved into the field working directly with the customer.

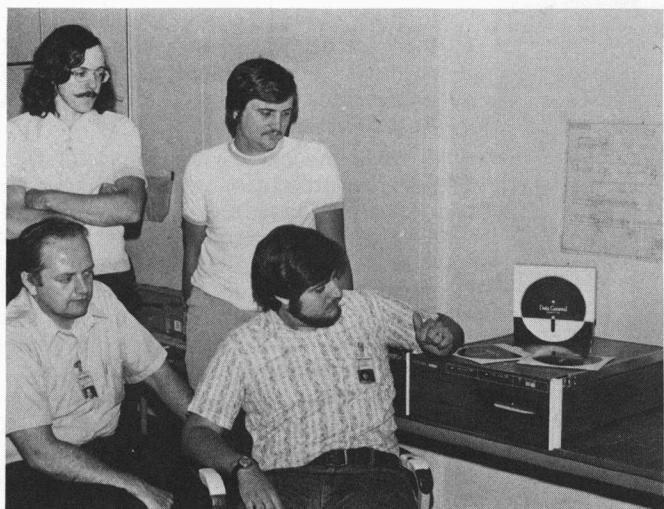
### Enjoyable

Sometimes all the technical expertise is unneeded, even in the job of a computer field service person. "The other day in Worcester I answered a call," relates Gerd. "The man explained 'every morning, I turn it on, the lights go on. This morning they don't go on.' I walked around the back of the computer, picked the plug up off the floor and he almost had a heart attack."

A university type person in the Boston area probably doesn't tell one of the stories Gerd finds quite amusing. This person called to complain that his Data General computer wouldn't work. "He couldn't do anything with the switches," explains Gerd. "When I arrived, I turned the main switch from 'lock' to 'on' and they worked just fine."

Gerd believes that the field service engineer is part of the total team charged with serving the customer. He isn't just happy with solving the hardware problems. He wants to make sure they don't happen again. And obviously, he'll go anywhere to solve a problem.

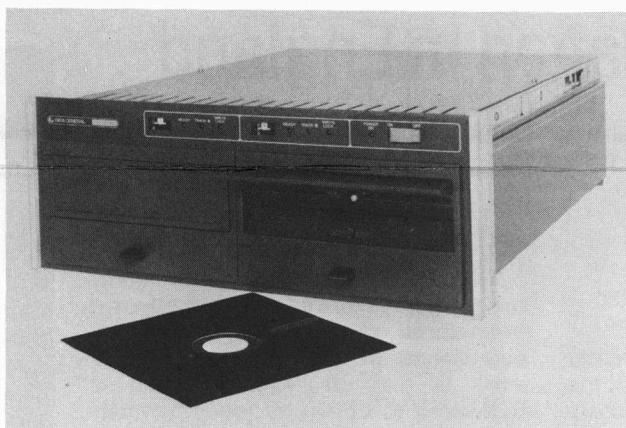
After four years, he speaks easily about his job when he states: "I like it. I get mad once in a while, but things get straightened out."



**Designers** — Among the design people for the new Data General diskette subsystem were seated (left to right) Jim Lucas, Dave Blondin, and standing Steve Cairns and Ray Roy. On vacation when the picture was taken was Dan Lupa.



**The pre-production stage of diskette subsystem production takes place in manufacturing engineering. Working on the system is technician Dilvo Di Placido. Looking on are (standing) Jim Richey, manufacturing engineering supervisor, and mechanical engineer Wilfred Widgren. (Engineer Warren Breslin was not available).**



**Making way for the diskette subsystem, (front to back) Karen Bomba, Cass Zelny and Fred Oak of peripherals manufacturing in Building 4 work on the final 75 IPS mag tape units produced in Southboro. Production of the mag tape units has moved to the Westbrook, Maine plant.**

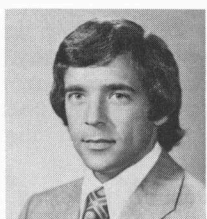


**In Production** — Ron Bourque (left), an original worker on the 75 IPS mag tape units, is now first in producing the new diskette subsystem. Ron and George Poudrier are shown assembling the first power supplies to reach production late last month.

## Dist. Mgr. and SE Named In Canada

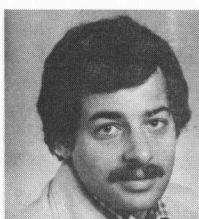
Ron Caudle has joined Data General in Canada as western district manager. Since early 1974, Ron has been a sales engineer in Data General's Portland, Oregon, USA office. The Western district includes sales offices in Vancouver, Calgary and Edmonton.

In the Ottawa/Hull area, Al Sinyor is a new sales engineer for Data



**Ron Caudle**

General. He comes to the company from Bell Canada where he was a computer systems specialist in minicomputers. He graduated from McGill University in Montreal in 1971.



**Al Sinyor**

Both Ron and Al report to Martin Oakes, national sales manager.

## C/300 Ordered In Germany

European Marketing Manager Dick Farwell reports the first sale of a C/300 by a European subsidiary. Juergen Fromberg, regional sales manager from Frankfurt, takes credit for selling the system to a leading manufacturer of wheel balancing machines.

# School Bells Ring For Computers

When school administrators first talked computers five to ten years ago, people wanted to know how they were going to be used. Surely, there couldn't be enough "data processing" to keep one of those "things" busy and to justify the high cost.

Today, computers have taken their place in the classroom along side textbooks, typewriters and teachers. In some cases, administrative work is performed, but in most instances they've become an educational tool, an aid to learning. Those "things" are now part of life for school kids.

The high cost? Well that's changed too, thanks to the minicomputer. Here our Data General story begins.

## Practical Project

At Foxboro, Massachusetts High School, computer education means practical applications for business education students. An office simulation class this year developed an inventory system for the school's supplies. Utilizing the NOVA 1220 installed two years ago, the class categorizes all items, keeps track of their use, and is now projecting future needs based on historical data in the computer memory.

The prime use of the computer at Foxboro, however, is in the area of mathematics where close to 100 youngsters regularly access the computer from five teletypewriter terminals.

Instructor Laurie MacDonald points out that top students have been challenged at all grade levels and have accomplished well in both programming and using the computer.

Tom Armstrong, mathematics department head and a prime mover behind the computer purchase, points to the accomplishments of the previously low achievers as well. "They have been fascinated by the machines," relates Tom, who still has graduates coming back to work on programs.

## Full Scope

North Attleboro, Massachusetts high school students are making use of their NOVA 840 system in all areas of school activity. Approximately 70 students are enrolled in BASIC and Fortran computer science classes. Another 20 to 25 business students are learning data processing concepts. Countless others use the computer for assistance in biology, social studies, and economics. Programs in these areas are available through Data General while others are developed by both students and staff.

Rod Cavedon, North Attleboro's computer science instructor, has generated programs to be used by

shop students in determining lengths and distances. Additional programs have been worked up to correspond to a textbook in use by an advanced math class. BASIC and Fortran courses in both day and evening sessions will be supplemented next fall by advanced independent study classes.

North Attleboro has also made use of the NOVA 840 for administrative work. Using a card reader, attendance reports and state records are provided without tremendous clerical support or time on the part of teachers.

When the local municipal electric department switched from a timeshare system to its own computer, the high school computer was used to transfer data files from tape to disc.

What's ahead? Rod looks for in-service programs to aid the non-initiated teacher who would like to have the computer as a teaching assistant. Approval has been received for a communications link to the junior high school. This coming year, report cards will be processed on the system.

## Assabet

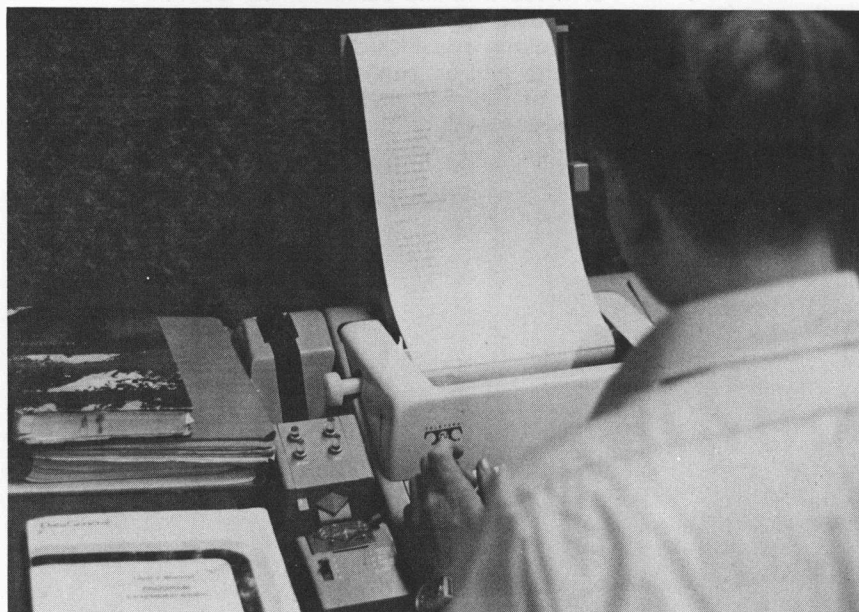
While computers are thought of as a mid-twentieth century development, the principles go back to primitive man's problem solving efforts. Even today, it is helpful for students to reduce the computer to simple terms.

Some inventive student vocals at Assabet Valley Regional Vocational High School in Marlboro, Massachusetts, were ignited with the installation of an 840 system. To help simplify the elements of a computer, the students decided to build their own system out of cardboard, paper, buttons and anything else available.

Each box they built represented an element of the system — a central processor, magnetic tape drive, input/output units and mass storage devices. This simplified approach to computer concepts was very helpful not only to the student designers but to their student peers. Curiosity over the cardboard computer spread rapidly, encompassing even the computer science instructors at Assabet Valley.

Soon the cardboard computer was perched on a table in front of the data processing classroom and was used to simulate information flow through a system. The imaginative idea of a cardboard computer has proven to be both a stimulus to student involvement and learning in the data processing classroom.

Computers, once a controversial item around school committee tables and on town meeting floors, have arrived. They're doing a job in the classroom by motivating youngsters and preparing them for the computer world they'll soon be entering.



Notebook, textbook, and computer manual....They all go together these days as a glance over the shoulder of this Foxboro High School student illustrates.

## NOVA Education In England

NOVA computers are becoming part of the international education scene as reports from Cambridgeshire and Manchester in the United Kingdom document.

### Learning Processes Of Retarded Probed

Research teams at the Hester Adrian Research Center at the University of Manchester, England are utilizing a NOVA 1220 to provide teachers of mentally handicapped children with information that will enable them to more fully develop their pupils' abilities.

Installed in a mobile van, the NOVA visits schools for the handicapped. A TV-like screen displays pictures and symbols while a lever and hatch, similar to a gumball machine, distributes rewards for correct recognition.

Researchers are seeking to chart learning processes based on behavioral characteristics. Already established in earlier phases of the work is that an "excited" child is motivated to obtain as many rewards as possible despite the chance of undesirable consequences while the "inhibited" child will pass the opportunity of reward rather than "risk" failure.

The apparatus is connected on-line to the 16K Nova 1220 which is equipped with a high speed paper tape reader for reading programs, and a high speed punch which records the results of the experiments as they occur.



Vice President Herb Richman "models" new Data General sales uniform at recent meeting of DG's Million Dollar Club. Herb ranks as both a top salesman and DG's first salesman.



Rod Cavedon, North Attleboro High School computer instructor, discusses programming with two students working at a CRT tube, part of the NOVA 840 system.

### County Wide Network In Cambridgeshire

The first stage in a comprehensive plan to provide computing facilities to all schools and colleges in Cambridgeshire was initiated April 22 with the official opening of the computer center at Peterborough Technical College.

Peterborough is one of three Cambridgeshire colleges which will form the nucleus of an educational network. It is hoped that about 20 schools will have access to the NOVA using dial-up lines.

The 32K NOVA 2/10, which was delivered last December, is already in use in college courses ranging from engineering to business. Two local schools have access through their own printer terminals.

The NOVA installation includes a paper tape reader, card reader, console typewriter and dual disc drives.

### Tray

Continued From Page 1

Chicopee, Mass., were cited by Morris. When the trays are eventually discarded by customers, they will be recyclable.

### Designer

Morris Freed joined Data General nearly a year ago and has become totally involved in the movement of material, be it in a final package to the customer or a tote tray from one building to another.

Morris came to DG from L. J. Gonzer Associates, where he was a consultant to Polaroid Corp. He holds a degree in package engineering from Michigan State University and is certified as a Professional by the Society of Packaging and Handling Engineers. He is president of that society's Boston chapter which claims membership from all of New England.

# INTERFACE

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