Employee Update

Optical Interconnect: State-of-the-Art Technology Development by Stan Doran

Acceptance of the HILAM Assembly Machine at ATS. Pictured *(from left):* Stan Doran, Program Manager Raytheon E-Systems Falls Church; Ralph Schumacher, ATS; Anthony Wilson, 1st Lt. USAF, Phillips Labs *(customer)*; Peter Galea, ATS; Bryan Ruffner, Auric Corp.; Michele Hagen, Molex Corp.; Ron Groenenberg, ATS; and Dr. Dennis Krausman, Auric Corp.

Raytheon E-Systems Falls Church recently completed the final step in the development and sale of Optical Interconnect technology. This development, in concert with DARPA, Amoco, and numerous subcontractors, is unique to the optical industry. The Raytheon E-Systems' team developed a manufacturing process for mass producing submicron optoelectronic devices for use in the computer and communications industries. This device, called a HILAM (Hybrid Integrated Laser Absorption Modulator), generates the laser light beam and modulates it for transmission of data over fiberoptic cable. To demonstrate that this device functions in fulfillment of the DARPA contract, the Raytheon E-Systems team developed a transceiver (much like a modem connected to a home computer) which operates at 2.4 Gbps (gigabits per second). (To appreciate this data rate, a 3 GB computer hard drive (which is our standard unit) would be filled in 10 seconds.)

In order to picture the significance of this development feat, consider a mechanical machine picking up components (called dies) which are so tiny their details can only be seen through a microscope. The assembly machine finds a die, places it on a silicon substrate (called a submount), aligns the "feet" of the die through software for proper placement with one ten-millionth of a meter accuracy, and then individually solders the "feet" of the die to the submount with a computer controlled laser. Then, after placing, aligning, and soldering three of these dies (the laser, modulator, and back detector), the machine places and "glues" a fiberoptic cable "pigtail" to the unit for subsequent connection to a fiberoptic cable.

The development of this amazing technology started with the Amoco Technology Company in the early '90's. Dr. Dennis Krausman, formerly with Raytheon E-Systems Falls Church (Falls Church aided him in setting up his new company, called Auric, for the further development of this technology), accomplished the purchase of this technology. Following the purchase, Dr. James Murphy, Program Manager at the Electronic Technology Office of DARPA, initiated a contract with Falls Church based on the work of Amoco and his belief this technology could advance the state of the art in data transmission. The contract was placed through Phillips Laboratory at Kirtland Air Force Base in New Mexico. First Lieutenant Anthony Wilson is the Contracting Officer Representative (COR).

The team, which included the talents of Cray Research, Molex Fiber Optics, Inc., Northwestern University, Sun Microsystems, EG&G Optoelectronics, Automation Tooling Systems of Cambridge, Ontario (ATS, the machine manufacturer), as well as other subcontractors, developed the HILAM over a four-year period. This process included the design and development of the individual dies. This entailed critical laser development, specifications for the assembly machine, finding a company willing to build it, and design and development of the transceiver to demonstrate the HILAM's operation.

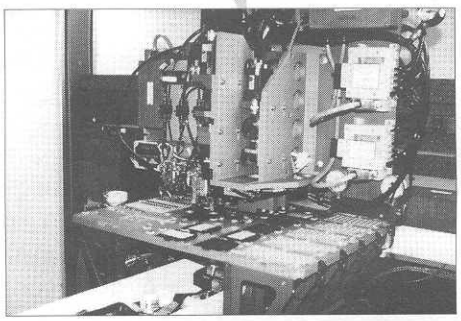
In 1996, it was evident that the commercial development of this technology was not in Falls Church's prime business area. Dr. Krausman, along with a chief consultant from Amoco, Dr. Tony Morretti (who had recently joined Molex), encouraged Molex to buy the technology and continue the development for its new fiber optic product lines. After completion of the sale in June 1997, the assets were transferred

Continued on page 2

OPTICAL INTERCONNECT
Continued from page 1

to Molex. Subsequently, Auric Corporation was established with Raytheon E-Systems assistance to further the technical development and interfaces with DARPA.

This DARPA contract, which resulted from the dedication of Dr. Jim Murphy to this endeavor, is complete. As promised, Raytheon E-Systems Falls Church delivered five 1.2-Gbps and five 2.4-Gbps transceivers and the HILAM assembly machine to the government. The successful design, development, and transfer of technology to industry are excellent examples of team spirit at Raytheon E-Systems Falls Church, as supported by the government, universities, and commercial companies. ❑

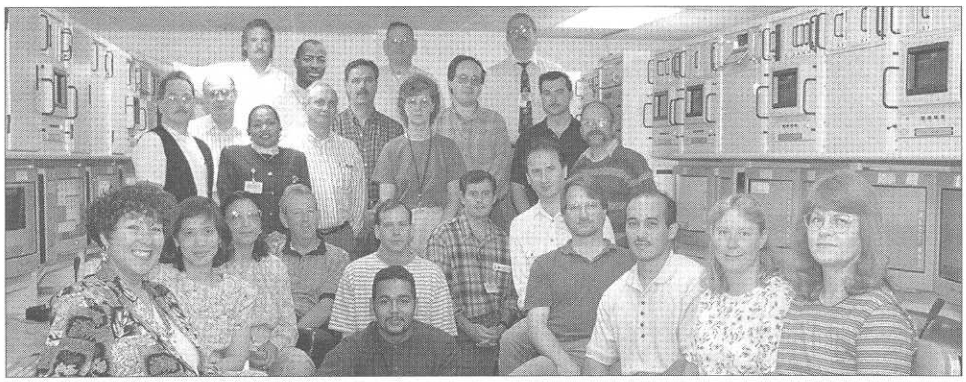


Internal picture of the HILAM Assembly Machine.

In Memory of
Murray G. Parker II

E-Systems extends condolences to the family of Murray G. Parker II who died on September 12. Murray was buried with full military honors in the Maryland Veterans Cemetery, Crownsville, Maryland, on September 17. Before becoming an employee at Falls Church in September 1981, he served in the United States Air Force Security Service and Electronic Security Command as an Arabic Linguist for 20 years. Murray worked as an Operations Analyst on several in-plant and field projects and as the Site Leader for T-ROFA (Temporary-Remote Operations Facility Airborne) and C-ROFA (Consolidated-Remote Operations Facility Airborne) sites at Ft. Meade, Maryland. Additionally, he served as Site Leader at Beale AFB, California. Murray is survived by his wife, Jane; two sons, Murray III and Kevin; two daughters, Suzanne and Leila; and three grandchildren.

Acceptance of the 5th DGIF-2 System



The OA/DGIF-2 Team. Pictured bottom row *(left to right):* Ellen Kaminsky, Vanny Tran, Mridul Batra, Rudy Duncan, Clay Hardin, Mike Logan, Tom Halligan, Don Wilber, Mike Flanagan, Mike Elkins, Bonny Osteguin, and Karen Via. Middle row *(left to right):* Flip McDaniel, Paul Marvel, Katherine Clinton, Rich Beckman, Jim Nesmith, Sue Bonner, Greg Karafa, Frank Tursic, and Rocky Lecorn. Top row *(left to right):* Joe Bickford, Jack Jenkins, Joe Fenrich, and Dieter Billick.

Reconnaissance Systems' Air Force project team enjoyed a major milestone this past August when the customer announced operational acceptance of the fifth DGIF-2 ground system at a fielded overseas location. This DGIF-2 system assumed operational responsibility from its predecessor, a system which was designed in the early nineties. The upgrade had to be done without impacting the ongoing mission, and the installation would take place in the same physical foot print as the existing equipment.

In an open message to the Pacific Wing Commander, the senior military Program Manager in charge stated, "The entire Raytheon E-Systems team worked extremely hard to get this system in without a single lost mission, a feat many doubted was possible given the arduous flight schedule and installation time line. As the Program Manager, I would like to personally thank the entire team. Please let Raytheon know this was the smoothest installation I have seen in my dozen years of managing projects." A glowing testimonial to a difficult job done well. ❑

Senior Year Maintenance Training Center Graduates

On June 20, 1997, the first combined Deployable Ground Intercept Facility- 2/Ground Control Processor-8 (DGIF-2/GCP-8) class graduated from the Senior Year Maintenance Training Center at Langley Air Force Base, Virginia. *Pictured front row, from left are:* SSgt Terry Mann, GCP-8 Instructor; SSgt J. Scott Cheseldine, US Army CECOM; SrA Burl Ross, 10th IS; A1C Joel Perlin, 10th IS. *Pictured back row, from left are:* TSgt Michael Berry, 10th IS; SSgt Chad Diamonte, 303rd IS; SrA Jeffrey Zima, 303rd IS; TSgt (Selectee) Todd Lewis, 303rd IS; A1C Wayland Alexander, 10th IS; Ben Hardin, Raytheon E-Systems, DGIF-2 Instructor; A1C Justin Shreve, 10th IS; and SSgt Hank Hatch, DGIF-2 Instructor. Not picture is Tom Barrett, Lockheed Martin 3D, GCP-8 Instructor. ❑

Yardage Gained at Touch Down for Health

From blood pressure to low fat cooking, all could be found at this year's *Touch Down for Health*, Falls Church's second annual health fair. Over 300 E-Teamers sprinted to the cafeteria between 11:00 a.m. and 1:30 p.m. to learn more about leading a healthy lifestyle from the 19 vendors on display.

Skin care.

Wellness exhibits focused on maintaining and/or improving health habits. From dietary information to vision testing, there was something for everyone. Arlington Hospital offered free body fat analyses, coronary risk profiles, and derma scans (a machine used to detect facial skin damage). Demonstrations on self-defense from the National Self-Defense Association and low fat cooking demonstrations (including samples) from Marriott Food Service showed E-Teamers two more ways to care for themselves. At this year's health fair 78 people had cholesterol checks. This almost doubled the number of people who received the test at last year's event.

Cholesterol screening.

Upon entering the health fair all E-Teamers were handed a football card. As they visited the variety of vendors displayed throughout the cafeteria, they gained yardage. Once scoring a touchdown (visiting four vendors), football cards were entered into a drawing for the grand prize of a weekend for two at the Fairview Marriott. The lucky winner of this weekend get-away was Carol Wade. The American Heart Association drew Anne Wood's name as the winner of its healthy recipe cookbook.

Touch Down for Health benefited an immense number of E-Teamers. "I found the health fair to be informative and very well organized," said ISG Network Administrator Brandon Pennix. Staffing Assistant Kirsten Moore commented, "The wide variety of activities and booths to choose from gave everyone a chance to participate in something they were interested in." After the fair, Health Center Coordinator Rosalie Georgeadis expressed thanks to all that took part in this year's activities, especially those who volunteered their time to help the event run smoothly: Sue Ander, Ti Godfrey, Dominique Huff, Tammie Knuth, Liz MacDonald, Shirley Matisans, Brenda Schomburg, Debbie Shows, and Lorraine Tain. "The success of any wellness program is based upon the participants," said Rosalie. "I believe Falls Church is a leader in wellness participation." ❑

Blood pressure check.

Upcoming Health Center Events

October 30
American Red Cross Blood Mobile
By Appointment Only

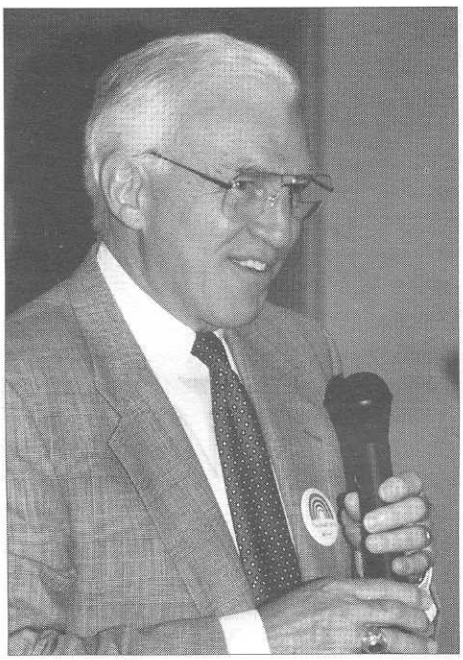
October 31
Innova Health Source Flu Clinic
By Appointment Only - Fee $8

October 31–November 14
Turkey Trot
Entry Fee: Canned Item for the Food Bank

Toastmasters Installs New Officers

Pictured are the recently installed Toastmasters officers *(from left)*: Sharlene Pemberton, Vice President, Public Relations; Allan Kaplan, Sergeant-at-Arms; Larry Tarr, President; and Shilpa Mehta, Vice President of Membership. (*Not pictured:* Rocco Tenaglia, Secretary/Treasurer and Joe Baran, Vice President, Education.) The Falls Church Toastmasters Club provides employees an excellent opportunity to develop communications skills. Whether you are an amateur speaker afraid of audiences or a seasoned-pro wanting to fine tune your skills, the Falls Church Toastmasters Club is the place for you. Every week, all members have an opportunity to develop and maintain their speaking skills. At meetings two short speeches are prepared followed by an evaluation and feedback session. The group meets every Thursday at 11:45 a.m. in the Shenandoah Room. Stop by any time to watch a meeting. For more information on the Toastmasters, contact Larry Tarr at extension 4937 or Sharlene Pemberton at extension 2331.

An End to a Great Campaign



Campaign Chairman John Gueterman gives an enthusiastic presentation at the United Way kickoff breakfast.

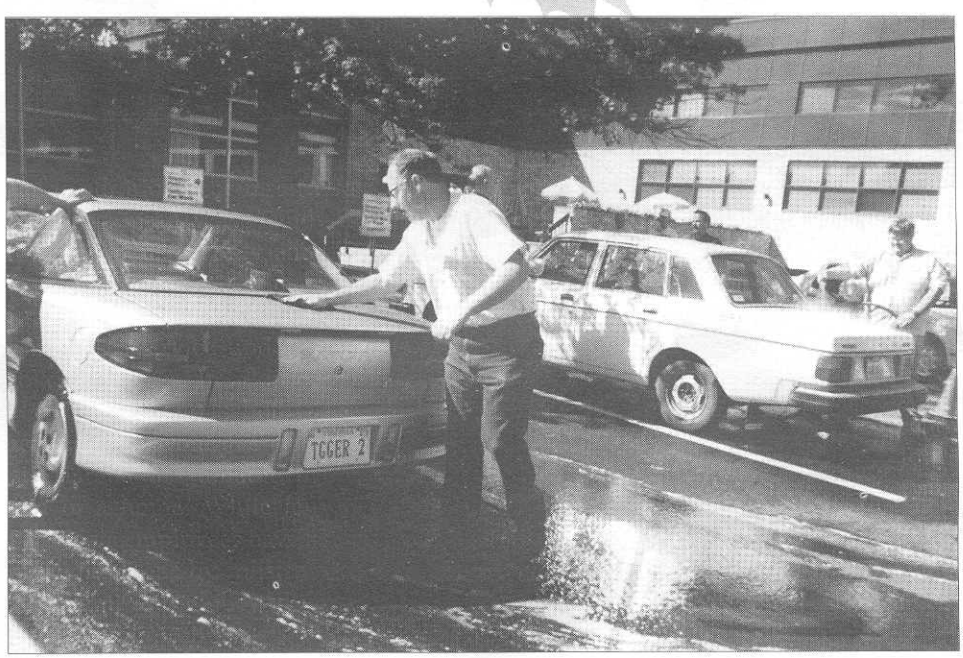
Volunteers learn more about the 1997 United Way Campaign at the kickoff breakfast held on September 25.

On October 10, E-Teamers concluded their 1997 United Way Campaign, during which over $93,000, was raised. This considerably exceeded our goal of $73,000. This year's theme, "Make a Start and Give from the Heart," really proved to be a motto all Falls Church employees lived by during the two-week drive. Falls Church facility donations went to benefit the National Capital Area United Way and its over 900 charitable organizations. The donations received from Greenville, Fredericksburg, and Pensacola were directed to benefit those in their immediate areas.

E-Teamers who contributed five percent or more in 1997 than they did in 1996 or contributed to the United Way for the first time, were eligible to participate in a United Way car wash. The first 25 people to "signup" watched as Falls Church executives wiped and waxed their white walls. John Carroll, Larry Cecchini, Bruce Dautrich, Tom Fioretti, Pat Flanagan, John Gueterman, Ed Kilborn, Len Lynch, Eduardo Melendez, Charlie Mellies, Dick Mosier, Mark Neuhausen, Bill Seward, Fred Wahl, and Bill Watson volunteered their time to help with this year's campaign car wash.

Everyone that participated in this year's campaign by either making a payroll deduction or a one time donation was given a ticket to be eligible for a drawing. Pete Van Winkle won the Grand Prize of a weekend stay at any Ritz Carlton Hotel. The First Prize winners, Linda Milton and Leslie Schratz, each won a free paid holiday. A gift certificate to the Kennedy Center in the amount of $100 was awarded to Marcus Artman. Janet Simpson can now bring a group of friends to lunch, as she won a $50 Sweet Water Tavern gift certificate. Honorable Mentions were awarded to Dan Nikolaus and Richard Hunter, each winning four free movie passes. Bill Moyer and Linda Green also won Honorable Mention Prizes for five free rentals each at any Blockbuster Video. For those who volunteered their time to collect donations from other E-Teamers, their names were placed in a hat and Karen McCain won a $100 gift certificate to Morton's Steak House.

"This year's campaign surpassed all of our expectations and hopes," said 1997 Campaign Chairman John Gueterman. "E-Teamers truly gave from the heart and their contributions will benefit one out of every three area residents. Thanks goes to everyone whose efforts and contributions made the 1997 United Way Campaign a true success." ❑



Larry Cecchini volunteers to help out with the United Way car wash. Pictured in background is John Carroll *(left)* and Bruce Dautrich.

Ethics Corner by Larry Buel

As many of you will remember, the mid-1980's presented many challenges for the aerospace and defense industries, not the least of which were the criminal convictions, civil penalties, and administrative remedies which grew out of the Operation "Ill Wind" investigation. The establishment of the Defense Industry Initiatives on Business Ethics and Conduct (or DII) was a coordinated effort on the part of the signatory companies to demonstrate to their U.S. Government customers that business transactions would be conducted with the highest integrity and be fully compliant with all applicable laws and regulations.

During the past ten years, the Raytheon Company's program evolved and matured into a comprehensive ethics program that facilitates senior management's efforts to design best business practices consistent with core business values; employee personal values; community expectations; federal, state, and local laws and regulations; and the requirements and expectations of customers. Our company's comprehensive ethics and compliance program is a recognized model in corporate America and is being studied carefully by many companies in the health care sector now under investigation and/or scrutiny by the U.S. Government.

The Departments of Health and Human Services (HHS) and Justice are aggressively investigating fraudulent practices in government health care programs. Referring to health care fraud as "the crime of the '90s," the Justice Department recently announced that the number of health care fraud cases investigated and prosecuted in recent years tripled, leading to the recovery of more than $274 million during 1995 and 1996. In a settlement agreement with the Justice Department earlier this year, a major clinical laboratory firm agreed to pay the federal government $325 million to settle allegations that it defrauded Medicare and Medicaid. In fact, it was the largest settlement under the qui tam provisions of the False Claims Act.

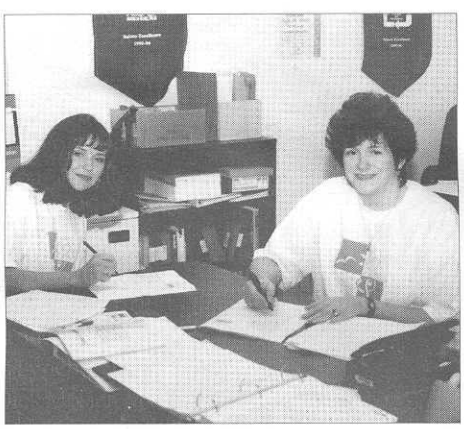
Although the health care sector has yet to establish a self-policing organization similar to the DII, individual health care providers (HMOs, university and college medical systems, family practice plans, etc.) established their own compliance programs modeled on the U.S. Sentencing Guidelines' 7-Step Compliance Program and the HHS "Model Compliance Plan." Not unlike many of their counterparts in the defense industry in the mid-1980s, health care firms are now working very hard to establish basic compliance programs that will make their billing practices and related internal control systems compliant with U.S. Government requirements.

Last month, the Association of American Medical Colleges requested that the Raytheon Company share with its membership lessons learned in the design, evolution, and maturation of a sophisticated ethics and compliance program. I was privileged to represent Mrs. Patricia J. Ellis, the Raytheon Company's Director of Ethics and Compliance, at this nationwide gathering of doctors, health care executives, and compliance officers.

During a 90-minute presentation, I summarized the nature of our company's comprehensive ethics, especially focusing on the relationship between the company's core business values, executive leadership, and the design of best business practices. The attendees at this symposium were particularly impressed with ethics and compliance training curriculum and the numbers of employees who participate annually in ethics training. Many of the participants indicated a desire to implement all or part of our company's comprehensive program as part of their efforts to demonstrate to the U.S. Government and their patients a commitment to compliance and integrity as a foundation for best business practice. We should be proud that our company's ethics program is viewed as a benchmark for other industries to study and emulate.

If you have questions or concerns that you would like to see addressed in this column, please contact me at extension 4465 or by electronic mail at **lbuel@fc.** ❑

Pensacola Volunteers for United Way Day of Caring



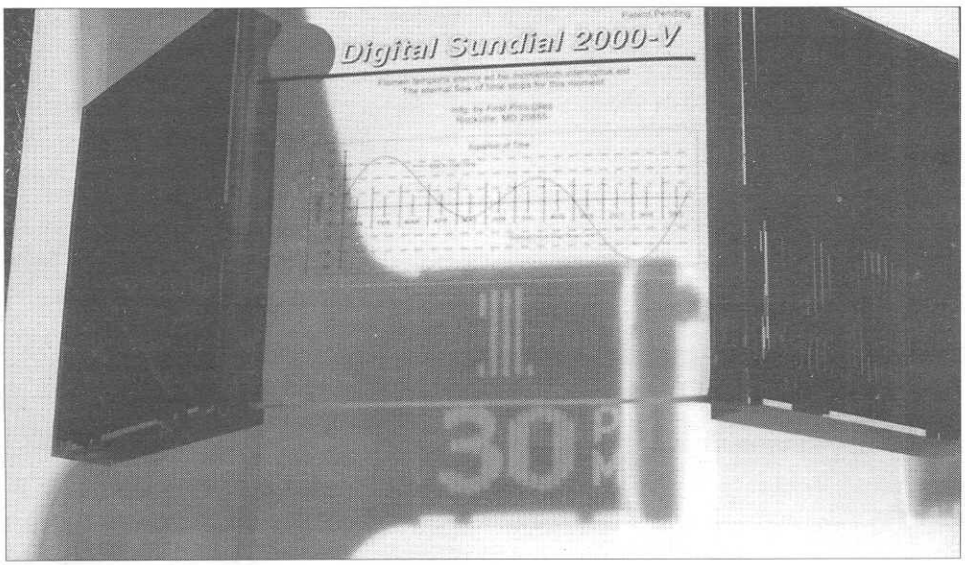
April Adams (left) and Sandy Gazdyszyn volunteer their time on the annual Day of Caring to assist the American Heart Association in preparing for its Walk for Heart.

Sandy Gazdyszyn and April Adams, co-chairpersons for the Falls Church Division, Pensacola Operation United Way Campaign, volunteered their time and services on the United Way's annual Day of Caring to assist the American Heart Association with its Walk for Heart. The Day of Caring is an excellent opportunity to visit with agencies in the local community and to kick off the annual United Way Campaign.

This year, April and Sandy were among 1,300 volunteers who made a difference at 28 United Way agencies and 17 local schools. Prior to working with the American Heart Association, April and Sandy assisted the USO and the Children's Services Center. In addition to being an avid supporter of the United Way, Sandy is active in Girl Scouts, Boy Scouts, and the local Parent-Teacher Organization.

The annual Day of Caring is one aspect of community service undertaken by Pensacola employees. In addition to donating food, toys, and school supplies, some employees volunteered their time to assist Habitat for Humanity in the construction of a home. While few in number, Pensacola employees have been Partners in Giving Hope by consistently donating their time and money to those in need in their communities. ❑

A Sundial You Can Set Your Watch By



The working Digital Sundial shows the time of 1:30 p.m.

Sundials date back to at least 500 BC, but there is always something new under the sun. Taking a twist on this ancient concept, Raytheon E-Systems Falls Church Senior Scientist Bob Kellogg has created the Digital Sundial.

In 1978 at the Naval Postgraduate School, Bob was inspired to design his digital sundial by watching shadows cross the esplanade while traveling to class. He saw the incoming sunlight hit slats of a wooden bench, creating striped shadows on the walkway. "I was fascinated by those shadows," said Bob. After a decade of thought, considerable mathematics, and "making more bad sundials than you could possibly imagine," he discovered a design that worked.

Bob received a patent for that design in January of this year. The gnomon (the shadow casting part of a sundial) is "made like a dagwood sandwich, placing layers of film between clear plastic blocks," said Bob. And then he added, "the hard part is aligning the parts within one-thousandth of an inch." Once Bob had the basic idea for creating the sundial, he proceeded to make improvements, allowing for the shadow numbers to appear and disappear rapidly, and increasing the overall timekeeping accuracy. Lots of math was also necessary to create the final product. "It is sort of like clay, and first, you get the right shape," said Bob. "You figure out the fundamental principles, and then you figure out how to make it work even better."

The final product is a sundial that uses two gnomons to cast the shadows of time every 10 minutes from 7:00 a.m. to 5:00 p.m., with the shadow numbers falling onto a two foot square screen. The digital silhouettes discretely change with the sun's angle. The appearance of the minute and hour numbers are carefully designed to match the motion of the sun across the sky. "It is all done with regularly spaced slits in the layers of film and the right number of layers, which in this case is three," explained Bob. These layers control the flow of sunlight through hundreds of small, carefully placed slits. Bob designed his own software program to produce these layer patterns in AutoCad file format so that they could be produced on film by commercial manufacturers.

Like most sundials, Bob's Digital Sundial tells Local Sun Time, so when the sundial reads 12:00 p.m., the sun is on the meridian and it is local noon. Adding a fixed correction for the sundial's longitude and following the solar correction printed on the face of the sundial gives time accurate enough "to set your watch by."

Bob has taken care that his Digital Sundial is designed to last for years, and now produces them in limited quantity. Bob quips, "The sundial even complies with Raytheon E-Systems' guide on *How To 2000* for accurate, trouble-free timekeeping into the 21st century." ❑

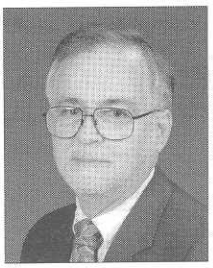
Clarification of Vacation and Sick Leave Usage as It Applies to a New Hire

A new hire joining the company in the months from January through October 31 in any year is given a prorated number of sick and vacation hours *(see schedule)*.

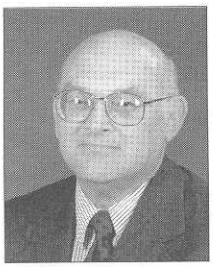
These hours are credited to the employee in the first paycheck and may be used immediately upon hire. However, if the new hire terminates before the completion of six months of employment, the vacation hours previously paid will be deducted from the final pay check. There will be no deduction for sick hours used.

Event Month	Regular Full Time	Regular Part Time
January	80	56
February	72	50
March	64	45
April	56	39
May	48	34
June	40	28
July	32	22
August	24	17
September	16	11
October	8	6
November	4 (sick leave only)	2 (sick leave only)
December	0	0

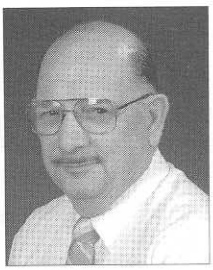
October 1997 Service Awards



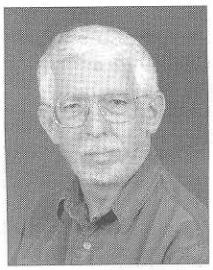
Marcus R. Artman
Forty Years



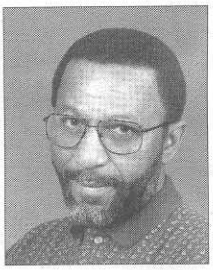
Carty S. Lawson
Forty Years



Elmer H. Marine
Forty Years



Philip L. Montaque
Forty Years



Arthur L. Stewart
Thirty Years

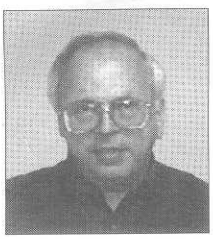
Twenty Years
Jay A. Boshart
Dorothy M. Brand
Daniel C. Davis
Roger C. Strauss

Fifteen Years
Thomas E. Barber
Robert R. Bunch
William S. Oakes
Steven R. Shaffer
Leonard G. Willard

Ten Years
Bernice L. Hall

Five Years
Warren A. Allmond
James W. Dulaney
Allan H. Kaplan
Paula A. Lindo
Randolph H. Pringle
Michael C. Reed
Dang N. Vo

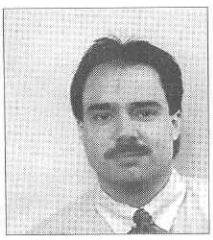
Retirees



Leonard Mechner
7 Years

James E. Krein
18 Years

Academic Applause



R. Douglas Smith
M.S., Engr. Mgmt.
Geo. Wash. Univ.

Movers and Shakers

Name	Promoted From	Promoted To
Mary R. Hogan	Admin. Clerk	Jr. Bus. Analyst
Peter H. Wald	Network Analyst	Sr. Network Analyst

Staffing Names in the News

New Hires

Welcome to all of the new hires who joined us since the last issue:

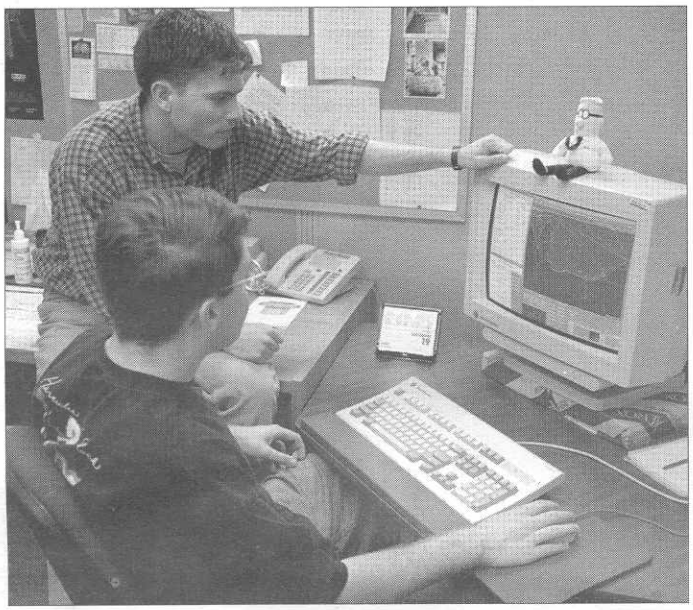
Name	Coming From	Title & Organization
John D. Anderson	Auburn University (employee)	Assoc. Electrical Engineer Technology Development
Mark A. Armstrong	JC Penney Life Insurance Co.	Sr. SW Engineer ISG - Garland
Jeffrey M. Beno	Institute for Advanced Technology	Assoc. Mechanical Engineer Air Force Systems
Michael A. Bohnet	Univ. of Washington	Research Physicist APTI
Joseph W. Brady	Integrated Design and Construction	Sr. Facilities Architect Special Programs
Gregory K. Burnette	STS/TECSEC, Inc.	Sr. SW Engineer Air Force Systems
H. Lawrence Clark	Naval Security Group	Operations Manager Systems Engineer
Seth R. Davis	MLA	Logistics Engineer Air Force Systems
Suheyla Ehlers	Apple Mountain	Assembler Trainee Manufacturing
Ray A. Gobble	FDC Technologies	SW Develop. Mgr. ISG
Richard K. Graham	Lockheed Martin	Engineering Specialist Special Programs
Steven A. King	TRW	Staff Engineer Business Development and Planning
Christopher Q. Le	Naval Air Systems	Asst. Program Manager Product Delivery
John T. Litchfield II	Marriott	Business Analyst Program Support
Peter J. Lohr	MSD, Inc.	Sr. Mechanical Engineer APTI
Nina L. Lynch	Naval Air Station	Data Entry Operator Air Force Systems
Kevin J. McCarthy	Laborer	Maint. Mechanic APTI
James F. McElroy	US Air Force	Sr. Test Engineer Special Programs
Mamie T. Mullins	7-11 Stores	Assembler Trainee Manufacturing
Cyrus J. Munshi	Lockheed Martin	Data Base Analyst Information Systems
Andrea M. Noel	CIA	Data Entry Operator Special Programs
Brandon J. Pennix	PC Help Services	Network Analyst Information Systems
Daniel W. Sharp	Mitre Corp.	Prin. SW Engineer Air Force Systems
Sharee A. Short	Talent House School	Assembly Trainee Manufacturing
Bill L. Stephens	St. Peter Hospital	Sr. Systems Programmer Information Systems
Lien Tran	AT&T	SW QA Engineer ISG
Theresa T. Tsang	Wang Gov't Services, Inc.	SW Engineer Digital Multimedia Systems
Steven R. Vincent	US Navy	Engineering Technician Technology Development
Leslie A. Willoughby	Digicon Corp.	Configuration Manager ISG

Rehires

Welcome back to the following rehires:

Name	Prior Service
Sharon D. Gosselin	5/87 - 10/95
Gary L. Kelley	1/86 - 5/91
Patrick M. Korenkiewicz	11/88 - 8/96
Ron K. Thomas	2/79 - 12/82 and 5/83 - 8/95

Preparing for the Future at Falls Church



Kevin Chapman *(left)* and Chris Mailey working on the mine warfare simulation.

In one year, Chris Mailey will go off to Duke University, University of Virginia, or Virginia Tech a step ahead of others in his class. The reason—he spent one semester of his high school senior year involved in the Mentorship Program. Chris is the first Thomas Jefferson student Falls Church has hosted in the program. His experiences here not only will prepare him for college courses, but also increase his job candidacy after school. Chris credits his Falls Church experiences with opening his eyes to the job opportunities and the excitement of the computer engineering field.

Ten to 15 hours every week, Chris leaves school to work with his mentor Kevin Chapman on Falls Church's RSAT Project. "I am doing a mine warfare simulation," said Chris. Part of his role on the project is to provide kinematic data about certain aircrafts and ships. In the process of receiving his security clearance, Chris will be among only a handful of people under the age of 18 who have a clearance. At the conclusion of the Mentorship Program, Chris will have put in a total of 180 hours for the semester. This work accounts for two semester courses.

"It has been great working here, and I have had a lot of fun," said Chris. "I don't just sit in front of a computer and write code all day. I also become involved in the design and development of product." Recently, Chris and Kevin mapped out Chris' goals through the first of the year. Primarily, Chris is involved in the display of the RSAT project, is aiding in changing the architecture of the project, and is testing the project's design. "It is more beneficial for Chris to be involved at all stages of the process," said Kevin. "He is developing the tool kit to go into any environment and learn quickly."

Thomas Jefferson seniors can easily become involved in the Mentorship Program. After students apply to a tech lab—some of which are computer systems, video technology, chemistry, biology, and CAD—they review the companies wanting to participate in the program. Once the students choose their top three companies, interviews are conducted. After offers are extended, students are placed for either a semester or a full year. While involved in the Mentorship Program, students are also required to be enrolled in five courses per semester.

The biggest benefit to Chris is hopefully, "giving him some sort of basis where the concepts he has learned can be applied," said Kevin. "Maybe we can help Chris learn how to learn." Over 50 percent of the 400 students in each graduating class at Thomas Jefferson go to the University of Virginia or Virginia Tech for engineering. Additionally, 100 of the 400 become involved in the Mentorship Program. "I decided to become a part of the Mentorship Program for the on-hands experience," said Chris.

Chris explained, "The experience of working here has put me a step up from everyone else, because I have already had job experience." He also credits Falls Church with sharpening his skills. "I guess the most interesting thing is I have learned how a company really works." ❑

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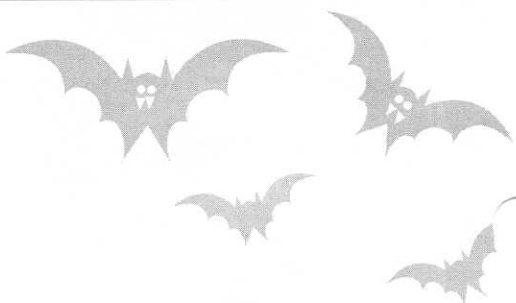

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