

Station News

Georgia Tech Engineering Experiment Station

Volume 15 Number 1

July-August 1984

Field Offices Open August 1

Three of EES's four new regional offices will open August 1. The additions are in Brunswick, Columbus and Madison. Another office will open in Dublin as soon as a field office director can be hired. With this expansion, EDL's Industrial Extension Division (IED) will cover the entire state from 12 locations, enabling it to concentrate its economic development efforts in Georgia more efficiently.

These additions have brought some organizational shifts. Sherman Dudley, the director of the Douglas office, also has assumed responsibility as the associate division chief of IED. John Mills, who has worked in the Douglas office since August 1983, is now the director of the Columbus office. John was graduated from Georgia Tech in industrial engineering, and has an MBA from Armstrong State College.

George Rivers and Ned Ellington are new employees. Rivers, who heads the Brunswick office, is an electrical engineering graduate of Tech. He has been living in Brunswick for the past five years, working most recently for Brunswick Pulp and Paper. Ellington directs the Madison Office. Also a Tech graduate with a degree in in-



EES's new field office directors were on campus July 16-20 for orientation and training. Relaxing in front of the O'Keefe Building are (L-R) George Rivers (Brunswick), John Mills (Columbus), Rich Combes (IED chief), and Ned Ellington (Madison).

dustrial and systems engineering, he has an MBA from Georgia State.

IED is a vital resource for developing the state's existing businesses and industries, and has been particularly helpful to small and medium-sized firms which lack technical staff or resources. The Division increases productivity by bringing emerging and "off-the-shelf" technologies to Georgia's industries. Most assistance projects are short in duration and normally involve aid in manufacturing processes, facility planning, materials handling, methods improvement, and cost control.

Recognizing IED's valuable contributions to Georgia's industrial growth, the legislature recently appropriated funding for this expansion. The new offices, each staffed with an engineer and a secretary, join the ongoing field offices in Albany, Augusta, Carrollton, Douglas, Gainesville, Macon, Rome and Savannah.

Anne DeCurtis

Rename Station News and Win a Prize!

In keeping with EES's new name and new image as it becomes the Georgia Tech Research Institute on October 1, *Station News* also will undergo a transformation. To help us find out how the publication can be made more interesting and useful to you, we ask you to complete and return the enclosed questionnaire survey.

We also need a new name, as *Station News* no longer will be appropriate. So we are inviting all EES employees to participate in a contest to find the best name for our new periodical. The prize will be \$100! If we receive more than one entry with the winning name, the prize will go to the entry received first.

You may submit more than one entry. Please include your name, title, EES unit and address, and telephone number. Send entries to: *Station News*, RCO, 202 Savant. Deadline is August 15.

Judges will be Don Grace, Howard Dean, Neil Hilsen, Ray Moore, and Martha Ann Stegar.

New Field Office Addresses

- Brunswick:** George Rivers
502 Gloucester Street
Zell Building, Office #5
Brunswick, GA 31520
- Columbus:** John J. Mills
3617 Hilton Avenue
Suite 223
Columbus, GA 31904
- Madison:** Ned Ellington
235 South Main Street
Madison, GA 30650

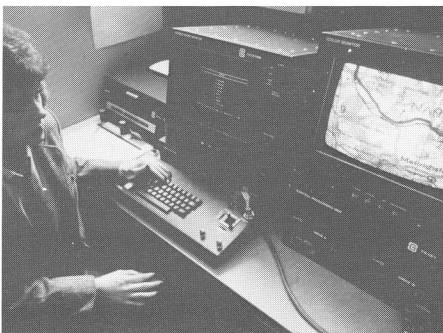
ECSL Succeeds with New "Bottom-up" Evolutionary Software Development

Back in 1980, when the Apple II was the undisputed king of personal computers, the U.S. Army Forces Command (FORSCOM), headquartered at Fort McPherson, Georgia, acquired 33 of them with a view to developing grassroots computer capabilities in the field. Eager to apply the "office of the future" concept to managing battlefield intelligence, they began working on an internal FORSCOM project which subsequently became an Army-wide Quick Reaction Capability program called MICROFIX, but the necessary software was not being developed as quickly as desired.

In late 1981, FORSCOM asked Georgia Tech, specifically the Command and Control Division (CCD) of the Electronics and Computer Systems Lab (ECSL), to take a crack at designing the software and upgrading the computer hardware for the program. They have come up with a fieldable system in record time, using a unique "use, learn, develop" approach which involves constant user/developer interaction.

Unlike the traditional top-down development method requiring years of feasibility studies, MICROFIX began with purchasing off-the-shelf hardware and training end-users in programming languages. "We first developed the software in an infant form," said Tech Project Director Ed Shanahan. "The next step was to obtain feedback from intelligence analysts from operational units in the field who used the system. Then we rewrote the software to meet their expressed needs. This cycle will be repeated until a mature capability is established."

MICROFIX will be used as a stand-alone, desk-top microcomputer system by tactical analysts and supervisors at all echelons to speed intelligence processing. The system is completely menu driven and can be operated by personnel with minimal training. Intelligence data that would have taken hours, days or weeks to assemble and analyze in the past are instantly displayed in video and hard-copy textual and graphics forms. They also can be stored, manipulated and retrieved in seconds.



Lisa Shockey of ECSL puts the MICROFIX Army intelligence software through its paces.

The central processing unit is an Apple II+ microcomputer that has been significantly enhanced to meet the complex needs of battlefield analysis. It and the 10 peripheral subsystems have been modified and engineered by Systematics General Corporation to meet TEMPEST security standards.

Georgia Tech software includes the following programs:

- Information Retrieval System (IRS)—enters, sorts and maintains data in the database and generates battlefield reports, such as spot reports, order of battle, and type of equipment/attrition reports.
- Graphical Intelligence Analysis System (GIAS)—allows the operator to spatially display order-of-battle and spot reports, see the direction in which a unit is moving, roam across and zoom in and out on video disk based maps, input sketches, and declutter the screen as required.
- Collection Planning Aid (CPA)—allows generation and maintenance of the collection plan and formats tasking requests.
- Topographical Library (TOPO)—a library package to assist in locating the appropriate topographical document.

The complex GIAS program was written in Pascal MT+, an effective compiler. The other programs were written in dBase II, a widely used database management language.

Other software includes diagnostics and word processing.

Worldwide fielding of MICROFIX System One began in early December 1983 and is continuing at a rapid pace, with EES project staff members participating on the Army New Equipment Training Teams. Locations so far include West Germany, South Korea,

Hawaii, and several Army posts in the continental U.S.

This major project has involved most of the personnel of ECSL's Command and Control Division. Contributors in addition to Ed Shanahan are Roger Anderson, Ben Atha, Larry Becker, Marianne Carlson, Chris Champness, Randy Coleburn, Jim Coleman, Norm Ellingson, David Gable, Janet Leininger, Mark McGahee, Kirk Pennywitt, Charles Pinson, Judy Post, Jim Rhodes, Lisa Shockey, Stewart Stanbro, and Billy Wise. Mike Rowan and John Peck of the Electromagnetics Lab provided support on topographical matters.

EES SUPERLATIVES

Steenblik Lands in Good Company

The *Atlanta Business Chronicle*, in its June 4 issue, named Richard Steenblik of the Technology Applications Lab one of Atlanta's "Six Most Exciting Entrepreneurs." Others chosen for this distinction were Ted Turner, chairman, Turner Broadcasting System, Inc.; A. L. Williams, Jr., chairman, A. L. Williams Corp.; Virgil Williams, partner, The Williams Group; Steve Nygren, co-owner, The Peasant Group; Robert H. Ranson, president, Chalk Board, Inc. The honor links one of EES's best-known inventors with some rather high-powered company. Congratulations!

EES Praised for EW Contributions

EES's contributions to electronic warfare research were praised in an editorial in the April issue of the *Electronic Warfare Digest*. Some choice quotes: "The laboratories of Georgia Tech are providing the Department of Defense in general and the EW community in particular with a valuable academic dimension somewhat lacking today in the defense community. It is a dimension of in-depth research and development divorced from the profit motive goal of lucrative production contracts....Georgia Tech may not have made the 'top ten' in this year's rankings in collegiate sports; however, when it comes to ranking universities for their contributions in research benefiting national defense, we consider Georgia Tech 'Number 1.'"

Software Training Center Starts

EES's new Software Training Facility opened for business July 2 and already is offering a full schedule of courses. Training is conducted on 14 IBM Personal Computers, with three more on the way. Courses being offered in July and August include DOS, advanced DOS, dBase II, 8088 Assembler, and UCSD Pascal. Several word processing packages will be added soon.

The training center, located in a suite at 325 Hinman Building, is a unit of EES's MiniComputer Service Facility (MCSF). Dr. Jay Gowens heads the operation, assisted by Lindsay Morris and Jeanne Hall. Other personnel will be involved as teachers on a course-by-course basis.

The new facility was established under the leadership of Associate Vice President for Research Albert Sheppard and EES Senior Staff Member Fred Dyer. Although operated by EES, the center is partially funded by the Vice President's office and will provide training services to support all research at Georgia Tech.

"IBM furnished the computers to Jack Spurlock and me on loan in recognition of our training efforts both on and off campus," Dr. Sheppard said.

"The response to our new training activity has been great," Dr. Gowens said. "Most of our July and August classes are filled, although we are willing to schedule additional sessions to accommodate demand."

Upcoming classes, beginning the latter half of August, include the following:

Aug. 20-24. **dBase II.** 9 a.m.-12 noon.

Aug. 27-29. **UCSD Pascal.** 9 a.m.-4:30 p.m.

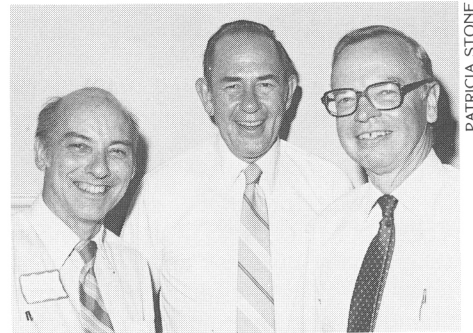
Sept. 6. **Volkswriter Deluxe.** 9 a.m.-12 noon.

Sept. 10-12. **8088 Assembler.** 9 a.m.-4:30 p.m.

Sept. 13. **DOS.** 9 a.m.-12 noon.

Sept. 17-18. **dBase II.** 9 a.m.-4:30 p.m.

Training schedules will be announced each month in *Station News* and on the ALL-IN-1 computer network. For further information, contact the training center at ext. 6206.



PATRICIA STONE

At the Retirement Reception June 21, EES Director Don Grace says good-bye to EMSL's John Brown (left) and EES Associate Director Rudy Yobs (right).

Let's Celebrate!

Reserve Friday, September 28, on your calendars! On that day EES will have a big double celebration: the Golden Anniversary of our founding in 1934 and our metamorphosis into the Georgia Tech Research Institute!

Specific events will be announced later, but we're hoping to have most of the former Station directors still living present to help us celebrate as we look back with pride on our past and forward with anticipation to an illustrious future. See you there!

Professional Activities

ECONOMIC DEVELOPMENT LAB

Ed Bethea of the Technology Utilization and Commercialization Center will participate in the workshop, "Innovation: From Invention to Enterprise," in Knoxville, TN, on August 17-18.

Bill Ewing and **William Spain** were coauthors of the cover article, "Getting to the Very Fiber of Industrial Asbestos Removal," for the June issue of *Occupational Health & Safety Magazine*. On July 2, Spain was featured in a 15-minute interview program regarding asbestos on WGST radio. He received an Outstanding Service Award from the Atlanta Public School System in June for his contributions as a member of their Safety Advisory Council.

EDL's Business Development Division organized the conference of the Eastern Region of the National Association of Management and Technical Assistance Centers, which was held in Atlanta July 18-20. The conference, presented under a grant from the Economic Development Administration, addressed such important issues as the nation's productivity infrastructure and technology transfer.

SYSTEMS ENGINEERING LAB

As project director for the multimillion-dollar EW Techniques Analysis Program, **Lloyd Lilly** hosted the Sixth Annual Electronic Warfare Program Review on June 5-7. More than 85 personnel from various Department of Defense agencies heard presentations by representatives of the EES Electronics Laboratories.

TECHNOLOGY APPLICATIONS LAB

The Governor's Office of Energy Resources has notified **Tom McGowan** that his homebuilder's energy efficient construction project has been selected as one of Georgia's entries in the U.S. Department of Energy's National Awards Program for Energy Innovation.

The Solid Fuels Extension Service held a regional conference on "Wood and Coal for Industry's Energy Needs" in Atlanta July 25.

Carol Aton presented "Training: A Key to Successful Technology Transfer" at the VII International Conference of Women Engineers and Scientists, held in Washington, D.C., June 17-24.

Larry Banta presented a paper on "Optimization of Photovoltaic Arrays" at the American Solar Energy Society's annual conference in Anaheim, CA, on June 9.

At the Summer Meeting of the American Society of Agricultural Engineers, held June 25-27 in Knoxville, TN, **John Adams**, **Wayne Daley**, **Chuck Ross**, and **Ralph Lamade** presented papers. Lamade also was the featured speaker at the Annual Meeting of the Connecticut Poultry Association in Colchester on June 7; his topic was "2001...A Poultry Odyssey."

George Cokkinides presented a paper entitled "Investigation of Utility Interface Problems of Photovoltaic Systems—Experimental and Simulation Studies" at the IEEE Photovoltaics Specialists' Conference in Kissimmee, FL, on June 20.

Eddie Valentine presented a paper, "Assessment of Water Recycle and Reuse Potential in the Pulp and Paper Industry," at the American Water Works Association Annual Conference on June 11 in Dallas, TX.

Name Change Update

What's in a name? Well, quite a bit when a new one is given to an established organization like EES!

Over the past few months, the Office of the Director (OOD) and Research Communications (RCO) have undertaken many business and public relations activities to effectuate the name change to the Georgia Tech Research Institute (GTRI).

As required by the Georgia legislature, the Board of Regents and Secretary of State have been notified that October 1, 1984, is the official date on which EES will become GTRI.

Sponsors and other key constituents of the Station also are being notified through distribution of 8,000 formal announcement cards and publication "hangers" which explain the name change. These "hangers" are being attached to all bound reports sent to sponsors and project managers by OCA's Research Services Department in the Printing & Photographic Center.

Internal audiences are being alerted as well through articles in campus newspapers, memos, and an announcement which will be inserted in all GIT paychecks in August.

Guidelines for implementing the name change have been widely distributed to all Station employees.



Do you know who these people are? Hint: This picture was taken in 1954, when one EES director was leaving to join American Viscose Corp. and a new director was replacing him.

Answer: (L-R) Dr. W. T. Ziegler, chairman of EES Director Search Committee; Mary Elaine Shaw, secretary to old and new directors; Dr. Herschel H. Cudd, departing director; Dr. Paul Calaway, incoming director and former director of the School of Chemistry; Cherry L. Emerson, Georgia Tech vice president; Elaine Shaw is the only one still at Tech; she is now secretary to the vice president for academic affairs.

Posters and signs soon will be posted throughout appropriate buildings. And special media events are being planned for the fall.

OOD and RCO are working with a graphics design firm to develop a new logo for GTRI that will be used on stationery, envelopes, business cards, mailing labels, in audio-visual presentations, and on many other printed items. These new materials are scheduled for an October 1984 debut.

We'd like to remind all staff that copies of the name change hangers, announcement cards, and guidelines are available through your ad-

ministrative network coordinator.

Personnel are urged to follow the official guidelines whenever possible. Questions not answered in the guidelines can be addressed to Jackie Erney, RCO (ext. 3444).

EES Reps Elected

Neal Alexander (RAIL), Lee Edwards (SEL), and Dave Plummer (SEL) are newly elected representatives on the Georgia Tech Executive Board, while David Clifton (EDL) was elected to the Academic Services Committee. Carolyn Mahaffey (ECSL) heads the Georgia Tech Women's Forum for the coming year, and Jeanne Balsam (ECSL) is the treasurer.

Strictly Personal

ECONOMIC DEVELOPMENT LAB

Rachel McCain has been promoted to program coordinator to coordinate the Environmental Health & Safety Division's Continuing Education courses.

Willie Coleman was married to Frank Duncan on June 17.

Ellen and John Warden became the parents of a boy, Tyler, in June.

ELECTRONICS & COMPUTER SYSTEMS LAB

Nadine Johnson is the new secretary to the ECSL Director, replacing Ginny Gross, who resigned. She also has succeeded Ginny as associate editor of *Station News*.

OFFICE OF THE DIRECTOR

Welcome to Celeste Cone, the new administrative secretary/receptionist in the Hinman lobby.

RESEARCH COMMUNICATIONS

Henry McDonald has joined RCO as a research associate II.

SYSTEMS & TECHNIQUES LAB

STL said good-bye to Gerald Ramsey on June 30.

Rex Brice was married on June 30 to the former Robin Graham.

SYSTEMS ENGINEERING LAB

Welcome to new employees Michael Lottridge, research engineer I; Blanton Radford, technical assistant; Gregory Cook, graduate research assistant; Michael Breon, co-op.

Scott Coleman, Louis Richardson, and Jane Batson have resigned.

Congratulations to Dan Howard and Guy Primiano, who earned their MSEE degrees in June.

TECHNOLOGY APPLICATIONS LAB

Welcome to Nancy Davis, research associate I.

Barbara and Lamar Griffin have a new daughter, Erin Marie, born June 28.

Station News

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