

STATION NEWS

ENGINEERING EXPERIMENT STATION • GEORGIA TECH



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JANUARY, 1979

JIM KNIGHT WINS ABOU

1978 ABOU AWARD Citation

This year's ABOU recipient has a truly magnificent record of suffering — one which made him a hands-down winner of EES' "Anguished Arab." His trials and tribulations have been likened unto the Cherokees' Trail of Tears — which, in our winner's case, went not from Georgia to Oklahoma, but from Fulton to Cobb County.

In fact, his suffering has quite a history to it. His troubles began at a relatively early age when he was forced to go to the "Nawth" to complete his education (chemistry not having been discovered in the South at that early time).

He then came to Georgia Tech to teach, an assignment which, no doubt, created a false sense of security and tranquility. This vanished as soon as he joined EES and was exposed to the cold cruel world of proposals, contracts, reports, deadlines and overruns. True suffering was yet to come for our honoree, and it began in earnest when he decided it would be in the good of mankind if he were to apply his hard-won scientific expertise to the problems of "waste utilization."

Embarking on this labor of love was no picnic, he found. First he had to enter the jungles of Area II where one must go to do such work at EES. There he was confronted with that most fiendish of inventors — that of the genus *Mackus Bowenus*. Our Abou winner had not fully recovered from this shock when a truck load of DeKalb County garbage was deposited on his doorstep with the expectation that it could be converted — through the alchemy of pyrolysis — into the coin of the realm.

Said truck was followed by others in turn bearing, among other things, macadamia nut shells, eucalyptus chips and cotton gin waste. When he had disposed of the e goodies, with the help (?) of



Jim Knight and ABOU

various mad engineers and a platoon leader on leave from the Israeli army, he found yet another challenge awaited! A licensee had been found for the product of the fiendish inventor (identified in scientific circles as being of the genus *Techus Airicus*), and it was our winner's lot to wheedle, threaten, cajole and otherwise massage this licensee into research contracts to provide some bread for himself and his cohorts in Area II. All of this was deeply depressing; in fact, it gave him the blues — Blue I, Blue II, Blue III and Blue IV.

Through all of these trials our winner waited patiently, confident that someday, in the great EES scheme of things, he would be rewarded. And sure enough he was: he got to move the whole cotton-pickin operation to Cobb County! To Jim Knight goes the 1979 Abou Award.

Services

The Reports & Procedures Dept. has hired **Tammy Sheffield** to work in the Reports Section as a technical typist.

Organizational Changes in the Applied Sciences Laboratory

Gordon Harrison recently announced some organizational rearrangements being implemented in ASL in support of the desire to effectively and efficiently utilize resources in the pursuit of new programs and growth opportunities.

The energy activities and associated personnel of the Energy and Environmental Analysis Division will be united with the activities and personnel of the Solar Energy and Materials Technology Division to form a new Division entitled, for now, the *Energy and Chemical Systems Division* (ECS). EEAD and SEMTD are thus being eliminated as identified operating entities.

The leadership of this newly formed and combined Division are: **Dr. Jack Spurlock**, Acting Chief, N. **Poulos**, Associate Chief.

The Division initially will be housed in the Hinman Research Building. Personnel now located in the Baker Building who will become part of this new Division will be relocated in Hinman as soon as possible. This new Division will be responsible for all of the programs formerly housed in the Solar Energy and Materials Technology Division and the energy based programs formerly in EEAD. The program development activities of these two previous divisions will be pooled, and new opportunities in energy research and technology, chemical systems and material technology will be pursued.

The Molecular Sciences and Chemical Kinetics Group previously in EEAD will become part of the Solid State Sciences Division under the administrative responsibility of **Walter Cox**.

Jim Donovan Retires



Jim Donovan

James A. Donovan, head of the EES Publications and Information Office, is retiring from Georgia Tech as of January 31. He first joined EES in 1967 as a research scientist in Ross Hammond's Industrial Development Division, then left to go into business in 1969.

It was Jim Donovan who was asked three years later to return to EES and set up the P&I Office — to take charge of the varied functions of public relations and publications production emerging from communications needs of an expanding Experiment Station. Since then, EES has enjoyed an ever increasing amount of publicity, media interest and public recognition — and the Station has grown threefold.

Since 1972, he has served as editor of the internal *Station News* and the external *EES Report* newsletter — has produced numerous news releases, brochures, press kits, viewgraphs, slide shows, charts, the Station Register and annual reports. Jim has organized EES Christmas parties and receptions, handled personnel recruitment advertising and arranged for displays such as the one recently installed at the solar site. Not always well understood and often taken for granted, the jobs initiated and completed by Jim Donovan in the areas of public information and publications as well as internal communications about EES personnel and happenings have been professional.

Donovan, a Dartmouth College graduate, was brought up on the north shore of Chicago and has not worn his accomplishments on his sleeve. President of his college fraternity, he went on to other positions of leadership in publishing, writing and military life. He has taught commercial art and was president and publisher of the 100-year-old *Armed Forces Journal* in past years. Retirement from Georgia Tech will provide more time — for his military writing and

especially greater involvement with the Washington-based Center for Defense Information to which he is advisor. Hopefully, he may even rejuvenate his outstanding talent in cartooning.

A retired Marine Corps colonel, Donovan spent 23 years on active duty serving as a combat infantry officer, tactics instructor and general staff planner. In World War II he was with the 2nd Marine Division at Guadalcanal, Tarawa, Saipan and Tinian and earned the Silver Star and Bronze Star medals. During 1975 and 1976, Jim provided Candidate Carter and his staff with many papers on national defense matters.

Author of the books, *A History of the United States Marine Corps* (1967) and *Militarism, U.S.A.* (1970), Donovan has a recently completed book, *Arms, Power, Peace*, with his New York literary agent Scott Meredith. Productivity is important to him, and in December an extensive article on "U.S. Battle Tanks" appeared in the *Atlanta Journal/Constitution*. Nine years ago he was co-author of an *Atlantic Monthly* article with Gen. David M. Shoup, USMC Ret., which helped destroy the myth that criticizing national military policy was unpatriotic. In between, Donovan's experiences with real world problems and his determination to keep up with what is currently going on in many life arenas have been part of what he has brought to EES.

People who know Jim are aware of his unshakeable moral convictions, of his scintillating but unpublishable Scottish war ballads sung in Hinman during good times, of his trouble-shooting which either hits the mark or brings a realistic acceptance, "C'est la guerre!" ("Such is war!"). They know that his family is an integral part of his responsibilities and priorities. Friends are cognizant of his being a gentleman but not being a bore...and of his witty, good humor.

Beginning February 1, Jim Donovan will be missed as an editor, writer, manager, events organizer, graphics artist...and person...at Georgia Tech — especially by those who appreciate creativity and sensitivity, by those who have profited by his skills, by those who know about his genuine interest in people, and, most of all, by those who understand what it takes to do a non-engineering job for and in a technologically-oriented community.

Friends and co-workers wish him further success and continued zest. So long, Jim. Enjoy!!

—Sharon Sebaly



Eight Georgia Cities Named Sites for Energy Conservation Seminars

Beginning in December, a team of engineers from EES will be visiting eight Georgia cities in order to conduct seminars on energy conservation for home builders.

Cities being visited are: Atlanta, December 19 and 20, January 10; Augusta, January 9; Calhoun, December 14; Carrollton, December 12; Columbus, January 30; Macon, January 17; St. Marys-Kingsland area, January 31; and Savannah, January 16.

Funded through the Georgia Office of Energy Resources in cooperation with the Home Builders Association of Georgia, the seminars are being conducted by EES in order to educate home builders on constructing and marketing energy conserving homes.

According to **Tom McGowan**, of TDL, project director, the seminar programs will be a practical guide to new construction methods and their economic benefits. Topics to be discussed include new energy saving devices, new construction techniques, effective sales and marketing strategies, the effect of energy costs on the home buyer, and the effects of the new State Energy Code for Buildings.

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CHRISTMAS PARTY, 1978



TDL

Tom McGowan of the Energy and Engineering Division presented last winter's results of the operation of a commercial grower's passive solar greenhouse in Tenn. to the Georgia Solar Energy Association.

Ed Bethea went to a meeting of the National League of Cities in St. Louis, Mo., as a representative of the Office of Minority Business Enterprise's Technology Commercialization Centers.

Ed also hosted a meeting of the Georgia Technology Utilization and Commercialization Center's advisory council at Colony Square on Nov. 17.

Dave Clifton, Hardy Taylor and **Ron Lumpkin** attended a Dun and Bradstreet seminar on financial analysis here in Atlanta the last week of November.

Most of **Dan O'Neil's** Chemical and Material Science Division staff have completed the move to the Cobb County Facility. They can now be reached at 428-9053.

About 50 representatives from the poultry industry and the poultry discipline at several universities attended a conference on the Catching, Loading and Hauling of Poultry put together by **Bob Cassanova** and his personnel in the Engineering Systems Research Group.

A meeting of the national and state Productivity Centers was held at TDL on Nov. 28 and 29. Approximately 25 people, including representatives from the Office of Management and Budget, Civil Service and the General Accounting Office, showed up for the two-day program planning session.

The Energy Systems Research Group headed by **Rich Combes** has been upgraded to the Energy Systems Research Branch. Rich and his branch have been cited for their growth and their development of a strong technical base.

The Industrial Extension Division held the third annual seminar for TDL secretaries in Dec. to up-date TDL support staff on procedures as well as to give Area Office secretarial staff the opportunity to meet their contemporaries in Atlanta.

Personnel Changes:

Anita Eubanks is moving up to Senior Secretary due to a transfer to Tech's Office of Planning. Anita's last day with TDL is December 15.

Joanne Bocek is the new secretary for Bob Cassanova's group. Joanne transferred to TDL from RAIL. **Ginny Gross**, Bob's previous secretary, left TDL to go into retail fashion.

Debbie Morris began work November 15 for **Dave Wade** in the Community Energy Systems Group. Debbie was with the Sherwin-Williams Paint Company before joining TDL.

Robin Farrow is a new Assistant Research Engineer with the Industrial Energy Extension Service headed by **Bill Studstill**.

RAIL

All of **Jerry Eaves'** people are now settled in at Cobb County. If you are looking for any of them, they are in Buildings 4 and 5 resting from their move to the northern reaches of civilized life.

New employee in RTA is **Deborah Weaver**, who has started work for **Jim Echard**.

Sheila McKenzie is on a maternity leave of absence. She was taken out to lunch by fellow employees the Friday before Thanksgiving, then gave birth to a boy, Adam, the following Monday! All are doing well (this includes fellow employees).

Harold Bassett headed up the MTL Division (Moving to Lockheed) which took up residence at the Cobb County Research Facility in November. The MTL (ESM) Division includes the Simulation Branch, the EM Surveillance Branch, and the Computer Applications Branch.

TDA has added several new faces: **Bob Goodman IV**, **Toni Crowder** (transferring from Aerospace) and **Elizabeth Cohen**. **Don Lewinski** is now in the Modeling & Analysis Branch; **Griff Jay** is now in the CSD Division. Perhaps the newest face in TDA is **Bill O'Dowd's** new son, born November 21st.

November was a busy month packed with conferences for TDA personnel. **John Scoville** attended

the GOMAC Conference, and Mike Tuley with **Steve Zehner** attended a Radar Technology short course given by the Boston IEEE AES Society. **Anny Clayton** presented a paper on "The Implementation of High Speed Data Sets with Microprogrammable Processors" at the MICRO-11 Conference. **Steve Cole** spoke on "Floating Point Support for Small Systems" at the DECUS Conference.

At the IEE International Conference on Antennas and Propagation held in London, **Margaret Horst** presented a paper entitled "Radar Sea Clutter Model" co-authored by **Fred Dyer** and **Mike Tuley**. Fred Dyer presented a paper on "Radio-Wave Propagation Measurements over Sea Water" co-authored by Mike Tuley, Steve Zehner and **Clark Butterworth**.

Pat Ryan taught a session on Microcomputer Applications at Robins AFB in the Introduction to Microprocessors course sponsored by the G. T. Continuing Education Department and coordinated by Al Sheppard.

Security and Access to Cobb County Facility

There have been a number of problems relating to the use of the gates at the Cobb County facility and it has become necessary to establish a new policy. Starting Monday, November 20, 1978, the south (rear) gate at GTRF/CC will be locked at all times.

All personnel, visitors, and vendors will use the main entrance which will be opened at 6:30 A.M. and locked at 8:00 P.M. during the regular work week. Even this entrance will be locked at all times on Saturday, Sunday and holidays. After hours persons may use the phone at the gate to gain admittance after properly identifying themselves. Signs will be placed at the south gate, on Georgia 3 and Richardson Road, directing visitors to the main entrance of the facility.

International Programs Office

William R. Calvert has joined the IPO staff as a research engineer to work primarily on the pump projects. He received both his B.S. in civil engineering and M.S. in industrial management from Georgia Tech. His prior work experience includes nine years with Goodyear International Corp., the last six as Area Sales Manager for the Caribbean.

Installation of AID manually operated water pumps in the Dominican Republic will begin in December, with **Andrew Karp** of IPO monitoring the work. **Dr. T. Fisher Craft** of ASL also will be on site to conduct bacteriological and chemical analysis of the water in the wells.

Kermit Moh was in Indonesia in December to supervise local manufacture of the AID pumps for that project.

Phil Potts and **Bill Calvert** were in Benin and Togo for three weeks in December to install U.S.-manufactured Moyno pumps, since there is no local pump manufacturing capability in these West African countries.

In January, **Phil Potts** and **Andy Karp** will go to Bolivia to investigate the feasibility of local manufacture of the AID pumps. Potts will then go to Pakistan to perform a similar investigation.

AID approval is expected soon on a \$350,000 joint proposal by IPO and the National Water Well Association to conduct rural water sanitation programs in developing countries.

ETL News

Bernard (Red) Jenkins presented a paper entitled "Response of Cardiac Pacemakers to Electromagnetic Fields" at the NBS Workshop in Gaithersburg, MD.

ETL welcomes back **Larry Jackson**, ARE. Larry worked previously as a student assistant for Richard Moss.

Richard Moss and **Hank Jenkins** (CTG) visited Fort Bragg, N.C., to observe day and night paratroop drops of the 82nd Airborne Division. An interesting sidelight of the visit was the opportunity to work with General J. E. Gavin (retired).

Systems Eng. Div.

The Systems Engineering Division welcomes **Lee Burks** who transferred from TDL to SED and will work in the Special Projects Office of SED.

A new research scientist, **Ed Jacobson**, is working in the Systems Technology Branch of SED. Jacobson has a BS in mathematics from Georgia Tech and an MS in economics from Duke University.

Welcome back to **Larry Holland** who has rejoined the Special Projects Office of SED.

Nonames of SED made a struggling comeback to even the volleyball series against CS&T Kwicks at 3-3. Any group in the Station interested in setting up a volleyball game, contact **Frank Vogler** at ext. 3592 or **Randall Carrier** at ext. 3417.

SED welcomes a new research engineer—**Robert D. Beasley**, who comes from Tactical Air Command Headquarters, Directorate of Electronic Warfare Operations. He will be working in the Defense Systems Branch.

SED will be saying "Goodbye" to two employees during the month of January: **Dave Wilkins**, research engineer, Systems Technology Branch, will be leaving Georgia Tech for employment elsewhere, as will **Thomas Priest**, Programmer III, Defense Systems Branch.

ANNOUNCEMENT

EES HAS OPENINGS IN MACON AND HUNTSVILLE AREAS

The Engineering Experiment Station now has openings for professional staff members to work full-time at the U.S. Army Missile Research and Development Command and at the Warner-Robins Air Logistics Center. Work areas include: missile systems, seekers and electronic warfare. These opportunities are being advertised in several newspapers, but the openings also are available to present employees. There will be no change in salary for people who transfer.

If you are interested in further information, contact R. C. Johnson, Associate Director/EES, at Extension 3516.

Millimeter Wave Systems and Technology

A course on Millimeter Wave Systems and Technology is being conducted by the Dept. of Continuing Education and sponsored by the Vice President for Research and EES Jan. 15 to 17.

The course will be taught by experienced members of the Tech staff. Academic administrators are **Dr. A. P. Sheppard** and **Dr. J. C. Wiltse, Jr.**

TV 5 Troubleshooter Paul Reynolds is trying to get some serious information on energy conservation from TDL personality Grant Curtis. Reynolds and his cameraperson spent about 45 minutes interviewing Grant for a taping that was to be shown Thanksgiving week.



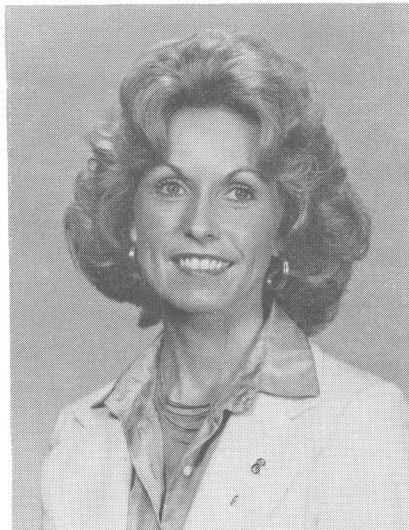
Tech Uses Radar to Detect Voids Under Concrete Highways

Radar research at Georgia Tech could lead to smoother roads with fewer detours. Preliminary research has indicated that radar techniques can be used to locate voids beneath concrete highways that cause the roadway to be rough and often hazardous to rapidly moving traffic. Maintenance to correct cracks, settlement, bumps and depressions due to voids beneath the pavement is time consuming, costly and disruptive to normal traffic movement. Radar detection of these voids during periodic nondestructive surveys would permit replacement of support material before the development of payment distress and loss of structural qualities, according to project director **Jim Echard** of RAIL.

Sponsored by the Georgia Department of Transportation, research demonstrated the use of a short-pulse radar to detect voids under concrete highways. This research was based on buried mine detection techniques developed at Georgia Tech during research sponsored by the U.S. Army Mobility Equipment Research and Development Command (MERADCOM) at Fort Belvoir, Virginia; the short-pulse radar, loaned to Tech by MERADCOM, was used to collect data from selected location on an interstate highway in Georgia.

As part of the National Cooperative Highway Research Program, further studies in this area by Georgia Tech researchers are being sponsored by the Transportation Research Board National Council. The primary objective of the program is to determine if it is practical to use radar technology to locate holes beneath reinforced and nonreinforced portland cement concrete pavements up to 18 inches thick. The goal is to define the voids beneath pavements with an accuracy of at least one-half inch in depth and six inches in horizontal dimension.

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Edith W. Martin

Martin Joins Editorial Board

Edie Martin of RAIL has recently been invited to join the Editorial Review Board of *Military Electronics Countermeasures* magazine in the capacity of computer science expert. Her name will appear in the masthead along with notables such as radar expert Dr. Merrill Skolnik. Informal duties will involve occasional review of unsolicited manuscripts with advice on suitability and also periodic advice on trends, newsworthy items and news leaders within her area of expertise. Circulation of the magazine is 30,000 — with 7,000 in Washington, D.C., and 6,000 in Europe.

Martin, who is chief of the Computer Science and Technology Division of RAIL, was also asked to write a monthly by-line for the publication. She states that she plans to address issues such as: distributed processing, computer standardization, technology insertion, interoperability and solid state software — all in the area of computer technology. "This is an exciting and challenging opportunity," says Martin, "and it will give higher visibility to our computer-related activities at Georgia Tech."

She has also recently been invited to contribute an article on the Military Computer Family to the *Journal of Electronics Defense Magazine*.

Speakers Bureau

There is an ongoing need for EES personnel who can represent Georgia Tech/EES as speakers at public luncheons, gatherings, etc. Short 15-20 minute oral-visual presentations about interesting research or projects given in layman language are desired. Volunteers can submit their names and topics to the Georgia Tech News Bureau via the EES Publications and Information Office. Talks should be approved by laboratory directors.

Building Manager in E.R.B.

John Parker has been moved to the Cobb County facility until a permanent replacement can be hired, **Harry Vann** will serve as the building manager for the Electronics Research Building. He will be providing the same service that Parker provided. Effective November 27, he will spend approximately 75% of his time in the E.R.B. and can be reached at extension 3511. The remainder of his time will be spent in the Baker Building at extension 3407.

Joe Parks, Associate Division Chief of the Defense Electronics Division

Joe Parks has been appointed Associate Division Chief of the Defense Electronics Division. According to Division Chief, C.L. Hilbers, Joe has been instrumental in the formulation of certain of the Division's administrative practices which are important in the conduct of very large programs.

Georgia Tech's Service To Georgia

The Publications and Information Office has recently published a booklet titled, "Georgia Tech's Service to Georgia." Authored by Sharon Sebaly, it is available to the staff upon request.