STATION NEWS

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Atlanta to Host 1979 International Solar Energy Congress

Atlanta will host the 1979 Congress of the International Solar Energy Society (ISES) according to J. D. Walton, Jr. of SE and MTD, who is local arrangements chairman for the world forum.

The Congress will meet May 28-June 1, 1979, at Georgia's World Congress Center which seats 2,000 persons and can handle six languages. More than 50 nations are expected to join in the concentrated effort on the exchange and flow of solar energy knowledge.

Founded in 1954 to increase global interest in solar energy, ISES membership has tripled over the past two years. Congress attendance is expected to include ISES members, interested scientists and researchers in related fields, construction industry participants, policy makers, the media and private citizens.

One reason Atlanta was the unanimous choice for the Congress is that Georgia Tech has the world's largest high temperature solar steam generating system as well as the second largest solar thermal test facility in the U. S. Previous cities to host the Congress include Paris, Los Angeles and New Delhi.

Dixie Crow Club

The Dixie Crow Club, Association of Old Crows, in conjunction with the Warner Robins Air Logistics is planning its Third Annual Electronic Warfare Symposium which will be held at Robins Air Force Base 20-24 March. EES is planning to have a booth displaying Station activities at this symposium. **Harold F. Engler** will present a paper entitled, "An Integrated Approach to Validation and Verification of EW System Software" at the symposium. The paper was co-authored by **T. M. Miller** of SED and **H. B. Jenning** of Warner Robins Air Logistics Center.

Energy Seminars for Home Builders

EES sponsored three one-day seminars on energy conservation for home builders on Feb. 28, March 1 and March 8 in Atlanta.

Funded through the Georgia office of Energy Resources in cooperation with the Home Builders Association of Georgia, the seminars were part of a statewide builders workshop program currently being conducted by EES in order to educate home builders on constructing and marketing energy conserving homes.

According to Tom McGowan, T and D Lab, project director, the program is a practical guide to new construction methods and their economic benefits.

Topics discussed at the seminars included new energy saving devices, new construction techniques, how to sell the energy efficient home and the effect of energy costs on the home buyer.

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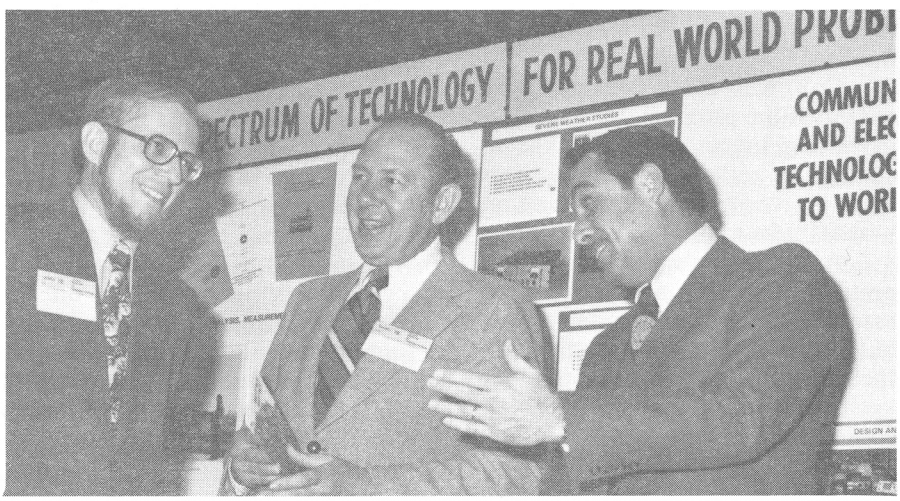
EES participated in the 3rd Annual World Fair for Technology Exchange held in Feb. at the World Congress Center. Wrapping up the week's activities are (l to r) Chairman Don Lodge (IPO), EES Director Don Grace and Jack Spurlock (ASL). "This venture," commented Don Lodge, "provided EES the opportunity to present its varied stock of technological aptitudes to a world-wide audience. Trade shows are notoriously difficult to evaluate, and this one is no exception. The participating units—ASL, EML, ETL, IPO, RAIL, SED and TDL—have been asked to evaluate the show."



Grounding and Lightning Protection Workshop to be Held Here

Grounding and lightning protection is the subject for a workshop to be held May 2-4, 1978, in Atlanta on the Georgia Tech campus. No fee will be charged.

Promoting maximum exchange of ideas which relate to grounding and lightning protection of equipment, systems and facilities will be the focus of the Federal Aviation Administration (FAA), Georgia Tech and IEEE Atlanta Electromagnetic Compatibility Chapter co-sponsored activity.

Areas expected to be covered include: measurement methods, power system ground design and performance, signal grounds and grounding, surge arrestor properties, design of surge protection circuitry (power, control and signal lines), EMP grounding and protection (unclassified only), air frame and shipboard grounding, aircraft/spacecraft lightning protection and others.

According to Co-chairman Hugh Denny of EES, the workshop is designed to further generate understanding of all aspects of grounding and lightning protection state-of-the-art.

TDL's Mazzeo Elected VP of Engineering Association

Dan Mazzeo, assistant research scientist for TDL, was voted vice-president of the local chapter of the Association of Energy Engineers (AEE) at the Association's October meeting.

Dan, who is involved in TDL's conservation program for the electroplating industry, has worked in energy conservation for the past three years with special emphasis on heat transfer applications.

Among Dan's duties as vice-president of the newly-organized association, headquartered in Atlanta, will be encouraging people from the business and academic communities to become involved with energy conservation efforts.

Seminar on Professional Communication

On March 15 a seminar on professional communication by Ron Blicq of Red River Community College, Winnepeg, Manitoba, Canada, is scheduled from 12:30 to 2:30 P.M. in the EE Auditorium. Mr. Blicq is active in programs to improve engineering communication and has conducted technical writing courses in six cities for the IEEE.

Mr. Blicq's visit to Georgia Tech is sponsored by the EES Professional Staff Development Committee.

Broadcasters Enlist Georgia Tech to Improve UHF TV Antenna Performance

Buying a good UHF TV antenna has been mostly luck in past years. A buyer has had but two guidelines: the salesman's word and the assumption that the higher the cost, the better the antenna. EES has been commissioned by a group of broadcasting organizations to help solve the problem.

A coalition of Public Broadcasting Service, Corporation for Public Broadcasting and the Council for UHF Broadcasting (CUB), which represents these three organizations and also the National Association of Broadcasters, the Association of Maximum Service Telecasters and other industry organizations, is sponsoring an EES project which will aid both consumer and manufacturer by providing guidelines and measuring performance of a variety of UHF antennas.

According to project director **William Free,** ETL, "The broadcasting industry is depending on the program to provide guidance and support in establishing standards which are technically sound and uniform for measuring performance of UHF receiving antennas.

Radar Meteorology Conference

The 1978 Conference on Radar Meteorology will be held Tuesday through Friday, March 28-31, at the Sheraton-Biltmore Hotel.

The session schedule includes:

Tuesday	A.M. Widespread precipitation systems
	P.M. Boundary layer and clear air
	Precipitation physics
Wednesday	A.M. Climatology and precipitation statistics
	Measurement of wind and turbulence
	P.M. Convective storms
	Calibration and attenuation
Thursday	A.M. Precipitation measurement
	P.M. Instrumentation and signal processing
Friday	A.M. Operational applications
	P.M. Radar fundamentals and techniques

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Statewide Traffic Forecasting Model Planned for Georgia

Traffic poses real problems in Georgia, and EES is involved in a study to forecast where the traffic will be flowing in the future and where higher demands for roads will be. Such forecasting will provide more efficient planning as well as savings in time and money for Georgians.

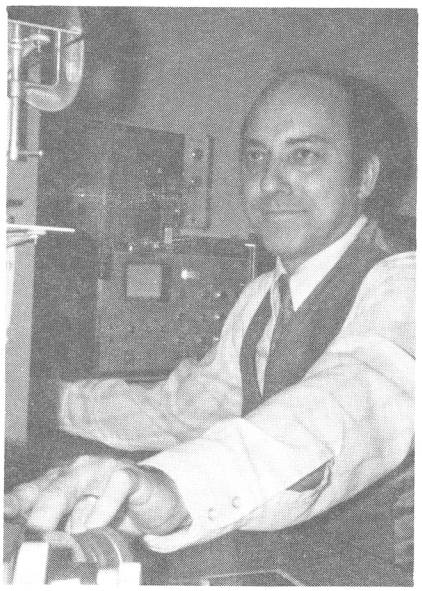
The Systems Engineering Division was recently awarded a 15-month project by the Georgia Department of Transportation for the development of a Statewide Traffic Forecasting Model. Such a transportation model would predict average daily traffic volumes and provide assessment of alternative system performance as well as environmental and socio-economic impacts.

The Georgia Department of Transportation has recognized for some time the need for such forecasting and has worked toward producing a method. Research efforts have produced representative intercounty traffic volumes using a simplified network of direct (as the crow flies) connections among the 159 county seats. Findings give evidence that available urban planning techniques can be effectively used for traffic analysis on a statewide basis.

The EES study, under project director **Neil Hilsen,** will develop a statewide highway network based on an internal zone system of about 690 census county divisions which are a breakdown of the counties based on physical features, major land use and trade or service areas.

Using the Federal Highway Administration transportation planning computer programs, EES will simulate statewide highway travel times and vehicular movements within the State.

Application of the statewide model will include development of time and/or distance bands and accessibility indices for population and employment to selected centers; energy consumption assessments; forecasts of road use and highway needs to formulate investment strategies to best use limited financial resources; and environmental impact analysis.



There's always something going on in **John L. Brown's** Analytical Services Branch of ASL, but most of the interesting projects are proprietary. "Currently, we are working on a couple of projects with the electron microscope which *can* be talked about," John commented recently. "Working in conjunction with the Law Engineering Testing Company, we're examining the liner of the Georgia Tech swimming pool, presently closed because of the problem. Also, we're evaluating samples of air pollution materials collected around the state for the Dept. of Natural Resources."

ASB does little federal contract work but, rather, provides services for industry and for projects at Georgia Tech.

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International Programs Office

Ross Hammond and **Nelson Wall** were in Washington March 1 for a comprehensive review by the Agency for International Development of the 211(d) institutional grant project and the small industry grant program.

Nelson Wall departs March 12 for a three-week stint in Brazil to monitor activities under the small industry grant to the Educational Foundation of South Santa Catarina.

Richard Johnston will be in Guatemala the last week in March to advise the Central American Research Institute for Industry on the operation of its basic data center.

Jerry Lewis is recuperating at home following surgery in mid-February.

Nelson Wall made a presentation on Georgia Tech and its involvement in developing-country economic development at the UNDP-sponsored Annual Meeting of Latin American Universities in Development in Bogota, Colombia, January 25-27. Wall's participation was sponsored by the Organization of American States.

Kermit Moh left January 3 for Ghana to work with the Technology Consultancy Centre in the design, fabrication, and assembly of a pyrolytic convertor, and in the testing, evaluation, and optimization of the system.

Ross Hammond was gone January 17-February 10 under the auspices of the AID 211(d) grant to touch base with Georgia Tech's counterpart institutions in the Philippines and Indonesia and to discuss possible future projects with other organizations in those countries, Thailand, and Jordan. He also visited the Intermediate Technology Development Group in London to discuss appropriate technology activities in the developing countries.

A farewell lunch was held by their friends January 12 for **Kay Auciello** and **Edwina Ware,** who have resigned.

Martha Ann Stegar and **Harlan Davis** attended the Atlanta Forum on Foreign Policy at Emory University on January 12. The U.S. State Department cosponsored the forum.

Martha Ann Stegar sang in the chorus for the Atlanta Lyric Opera Company's production of Wagner's "Flying Dutchman" at the Fox Theatre January 27 and 29. Starring Metropolitan Opera singer Morely Meredith in the title role, it also featured the Georgia Tech Chorale.

EES Services

The Service Groups have three new employees: **Richard McFarlin,** Stores Clerk in the EES Warehouse; **Robert A. Knox,** Machinist in Mechanical Services; and **Betty Hammond,** Report Typist in Reports & Procedures.

Congratulations are extended to **Geneva Minter,** Report Typist in R&P, on the birth of her daughter born on January 9.

Tech into Wrong-Way Traffic

A Georgia Tech researcher has received a $14,842 grant to study wrong way traffic movement on freeway ramps. The problem was designated as the number one research need by state traffic and safety engineer Archie Burnham of the Georgia Department of Transportation (DOT), the agency which is funding the study.

Associate Professor of Civil Engineering **Peter S. Parsonson,** assisted by graduate student **Jim Marks,** is studying 44 freeway ramps in the metropolitan Atlanta area.

Because this problem has not been studied previously, there are no statistics available for the state of Georgia. However, during a two-year period in DeKalb County, nine accidents resulted in four deaths.

Parsonson has found that most cases of wrong-way movement on freeway ramps occur during the night, often when the driver has been drinking. In almost all cases, the driver is confused by the geometry of the ramp.

The "button hook" ramp is the most dangerous type which Parsonson has found. A "button hook" ramp is the type which has the exit ramp and entrance ramp side-by-side.

Parsonson formerly studied a particular ramp in South Atlanta. At the beginning of the study, cameras at the site recorded three wrong-way movements per day. In California, similar studies classified three wrong-way movements per *month* as a high rate. After placing raised buttons at different distances apart, wrong-way traffic movements have been reduced to approximately one every two days, one-sixth the original number.

Parsonson and his assistant will install 18 cameras and rotate them between 44 locations in the Atlanta area.

The Tech researchers have classified the 218 freeway ramps in the Atlanta area into 23 categories. They have found 19 are susceptible to wrong-way movement while four are not.

Parsonson cited several countermeasures to avoid wrong-way traffic movement. Measures adopted at the South Atlanta location have met with some degree of success.

He said that the best solution so far is to physically prevent the driver from entering the wrong freeway ramp, either with strategically placed medians or raised buttons.

Additional countermeasures include the lowering of traffic signs to the height of car lights; adding painted stop bars, or installing guide signs marking the route. (Also, less booze and grass would help some drivers.)

Applied Sciences Lab

Jack Spurlock participated in a meeting of NASA's Life Sciences Advisory Committee in Feb. at NASA Ames Research Center and was also involved in proposal development meetings. On Feb. 20, he spoke to a student group called Options on "Research, Development and Technology Management of Space Settlements" at Georgia Tech's Student Center.

John L. Brown, ASB, has co-authored a chapter for the book entitled *Minerals in Soil Environments,* published in November by the Soil Science Society of America. The chapter, written in collaboration with Dr. T. R. McKee of Arizona State University, describes methods of preparing soil minerals for examination in the electron microscopes and the proper interpretation of electron micrographs.

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Tech at Work on Timber Process and Wood Energy

Research scientists at EES are working on separate but related studies of direct concern to Georgia's timbers industry.

The initial project consists of two tasks. Task I is to investigate the feasibility of establishing a timber processing complex in the North Georgia Appalachian area in order to take the advantages of ample timber supplies and low stumpage costs prevailing in the area.

The second task study is to investigate the potential markets for wood fuel based on new developing technologies.

According to the project director, **Dr. Tze I. Chiang,** and the project coordinator, **David Clifton,** Task II will be integrated with a separate study concerning a proposed wood energy center in Georgia.

The plan will identify the Center's role in assessing the impact of increasing fuelwood utilization on the environment, society and industry.

SED News

David Kelly, on a brief leave of absence from SED, is visiting at TRADOC where he is doing preliminary work on developing methodology for analyzing training support requirements for emerging U.S. Army weapon systems.

David Wilkins will present a paper entitled, "Methodology for Evaluation of Agricultural Irrigation Management Systems" at the Tenth Annual Southeastern Symposium on Systems Theory at Mississippi State University on 13-14 March 1978. The paper was co-authored by **D. L. Kelly** and **R. P. Zimmer.**

Neil B. Hilsen and **Jeffrey S. Tiller** (ASL) met in Washington, D.C., with representatives from the Environmental Protection Agency, Department of Energy, and Northern States Power Company on 17 February to discuss large city district heating studies.

Harold E. Engler will present a paper entitled, "A System for the Automated Testing of Electronic Countermeasures Equipment," co-authored by **R. E. Thomas** and **John Vogt** at the Tenth Annual Symposium on Systems Theory in Mississippi, 13-14 March.

Thomas M. Miller returned from leave of absence on 27 February. While on leave, Mr. Miller was working in the Test Engineering Directorate Office at Eglin AFB, Florida, defining long-term instrumentation requirements for the Eglin Test Range.

The Systems Engineering Division welcomes two new employees. **Ms. Sharon Campbell,** Secretary I, comes from Indiana and has a reputation of being an excellent tennis player (Watch out, you tennis buffs!). **Larry Stroud,** Senior Research Engineer, is from Holloman AFB, New Mexico, where he retired from active service in the Air Force. His current fields of interest include electronic warfare, radar and communications systems, computer simulations, energy systems and defense technology assessment. SED welcomes our two new employees!

Turn off lights

RAIL News

Shirley Busby, who is expecting a baby in April, left RAIL at the end of February. Shirley was taken to lunch twice: to the Sandpiper by the RAIL secretaries and to the Steak & Ale by her co-workers of the Radar Technology Area.

Jim Metcalf, RAD, is in charge of local arrangements for the conference on Radar Meteorology sponsored by the American Meteorological Society. It will be held March 28-31 at the Sheraton-Biltmore Hotel. Georgia Tech and the local chapter of AMS are the co-hosts. **Metcalf** and **Jim Echard** will be presenting a paper entitled "Spectral and Cross-Spectral Analysis of Coherent Polarization-Diversity Radar Data."

Gene Greneker, project director of a Border Radar Resources & Optimization project, was host to members of the U.S. Customs Air Support Branches from San Diego, Tuscon, El Paso, Albuquerque, San Antonio, Houston, New Orleans, Miami, and Headquarters Group in Washington, DC. The meeting discussed GT's radar analysis and management program covering interdiction of drug smuggling by aircraft.

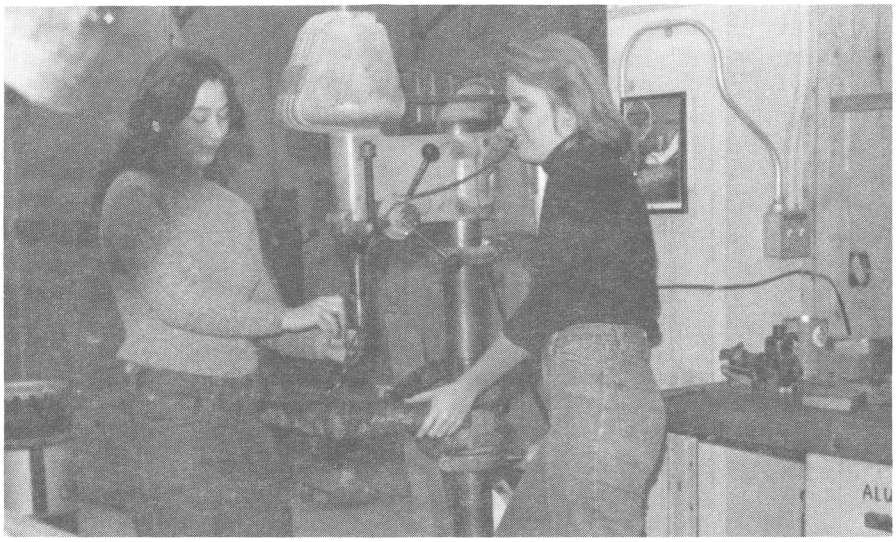
Change in location for parts of the Technology Development units are:

- Operations Research Group, headed by **Ross Gagliano,** have moved to the Nuclear Reactor
- Computer Applications Branch and Computer Technology Branch have moved to the first floor of the Electronics Building. These Branches are headed by **Pat Ryan** and **John Scoville.**
- Simulation Branch, headed by **Don Sanford,** has moved to the second floor of the Electronics Building.

Becky Adams of RAIL/TDA is publishing the IEEE Newsletter.

Welcome to the new employees of TDA: **Chuck Fedonczak, Dave Tripp, Gary Szilagyi,** and **George Wren.**

Chris Hodges and **Glenn Caplin,** RAIL/TDA, have had a paper, "Design Considerations for Dynamic State Machines," accepted for publication in IEEE Southeastern Conference Proceedings.

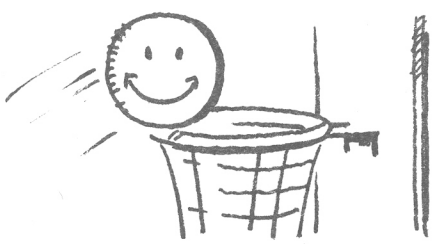


Nancy Richardson (right), and Carol Ostrander (left), at work in the shop at the Systems and Techniques Lab.

Ross Gagliano, RAIL/TDA, will be presenting a paper in Austria later in March.

Gene Greneker spent several days recently reviewing the radar program of the U.S. Customs Service Air Support Branch in Miami. During this visit, he reviewed the capabilities of the USAF "Seek Skyhook" system at Cudjoe Key and the Miami FAA Air Traffic Control Center.

Jim Scheer, George Ewell, and **Nick Currie** traveled to NCSL, Panama City, FL, in January for technical discussions on WIDS and to eat oysters at Captain Anderson's.



Hate to jog? Looking for a method of getting some exercise during lunchtime? **Fred Cain,** Head of Electromagnetic Effectiveness Division, S&TL, invites anyone interested in playing basketball "just for the fun of it" to come to the Student Activity Center any day Monday through Friday between 11:30 and 1:30 and join the group of players.

Systems and Techniques Lab

This quarter, the Systems Development Division's Mechanical Development Branch includes two fledging mechanical engineers who provide more than the usual visual interest to the fabrication and shop areas of STL.

Carol Ostrander, a first year student, finds herself following in the footsteps of her father, a mechanical engineer and Tech graduate. Carol reveals she has been helping her father for years with his profession as well as in their home workshop. Carol is in the co-op program and feels it an advantage in furthering her skills as she studies.

A senior at Tech in M.E., **Nancy Richardson** finds her job as student assistant in radar fabrication in STL providing her with invaluable practical experience. Nancy's father was also an engineer, though a chemical engineer. She chose mechanical engineering because for her it offers broader possibilities and opportunities. She hopes to pursue the field of mechanical design after graduation.

TDL/CMSD/EES/RUB — **S.B. Smith and E.M. Dannenberg** had a conference with the EPA MERL staff in Cincinnati on Feb. 2 to discuss future work on "Activated Carbon."

NCR News

Monte Davis' new secretary is **Doris Mannings,** who has a B.S. in Business Education and who has worked for Fizer Pharmaceutical and Digital Equipment Corporation.

Technology and Development Laboratory

Dan O'Neil, head of C&MSD of T&DL recently announced that EES was awarded a contract by the Fulton County Commission to assist in the development of a plan for an industrial cost recovery system for handling of wastewater from industrial and commercial facilities.

The primary objective of the study, according to the Program Manager, O'Neil, is to assist in the development of a schedule for sampling and testing of critical control parameters for wastewater discharges. Based on on-site inspections and cooperative arrangements with commercial and industrial sources, recommendations for a policy of equitable distribution of costs will be made. A testing program for routine monitoring of wastewater discharges will be developed for use by Fulton County.

Michael Rollor and **Albert Poulin** are principal researchers for the study.

George Dodson and **Doris Willmer** attended the Integrated Community Energy Systems Planning Seminar put on by Battelle Columbus, January 23-24. Battelle Columbus is part of the nationally recognized Battelle Memorial Institute which is engaged in research work similar to that being done at the Experiment Station.

The main object of the meeting with Battelle was to discuss two community energy conservation projects that Battelle is currently working on.

Ben James, Lynn Tessner, Bill Darley and **Ray Junk,** all of IED, participated in an Occupational Safety and Health Administration (OSHA) training institute, December 5-9, at the federal agency's training headquarters in Chicago.

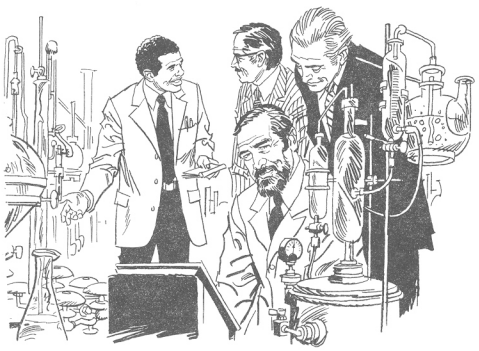
Concentrating primarily on the interpretation of OSHA regulations, seminar participants were briefed on more than twenty topic areas including welding, cutting and brazing; machines and machine guards; hazardous material and compressed gases; and fire exits and fire extinguishing.

The four-day seminar, which was designed specifically for instructors, provided the IED members with special training for helping business and industry to comply with OSHA regulations regarding safety and health conditions for workers.

Two new contracts totalling almost $200,000 were recently awarded TDL's Chem. and Mat. Sci. Div.

The first award, a $150,000 contract from the Transportation Research Board of the National Research Council, deals with a nationwide study of coating systems for painting old and new structural steel. The first comprehensive study since 1968 of existing and recently developed paint and coating systems for corrosion protection of structural steel, the CMSD study will help establish guidelines for manufacturers and users of steel coatings.

Members of the project team include **W. H. Burrows, F. A. Rideout** and **E. M. Dannenberg.**



The second, smaller award is a contract from the Fulton County Commission to assist in the development of a plan for an industrial cost recovery system for handling wastewater from industrial and commercial facilities.

Michael Rollor and **Al Poulin** are principal researchers for this project.

Kay Rogers and Rosalinda Ratajczak are two new part-time workers in TDL's Economic Development Division.

Michael Rollor, assistant research engineer, began work December 5 in Dan O'Neil's Chemical and Material Sciences Division.

Tom McGowan, research engineer, began work in January for the Systems Research Branch of the Energy and Engineering Division.

Gary Winn Kelly (TDL) has been hired by Georgia Tech as Coordinator for Handicapped Programs as of Nov. 15. Assigned during this year to EES under CETA (Comprehensive Education Training Act), the blind inventor-designer-researcher will continue with TDL on a 70% time basis and will work for President Pettit 30%.

"My mission," commented Gary, "will be to work at developing a handicapped productivity systems program — to develop devices and systems that enables the handicapped to be more productive employees. I'll be working closely with Dr. Walter Bloom of the GIT Affirmative Action Office, and I'm truly excited about this program's potential."

Dr. Bloom was similarly enthusiastic about Gary's new role with the University. "He's ideal for this position: Gary is visually handicapped, is a Tech graduate, was born and reared in Atlanta, has worked with the School of Architecture and EES and understands Affirmative Action. Gary's wife, who is also blind, works for the Dept. of Human Resources, and Gary, of course, is active in education."

Electronics Technology Laboratory

Bill Free, EMC, attended the Government/Industry Application/Tailoring Baseline Workshop at Airlie, VA January 17-19.

Don Clark and **Bill Free** were in the Washington, D.C. area January 23-26 for a series of meetings with NSWC, NAVELEX, and ECAC to obtain information on EMR hardness study.

Ron Wallace, CTG, attended the Annual Meeting of the Transportation Research Board in Washington, D.C. January 16-20. He presented a status report on the FHWA sponsored CB-AIDS project to the Communications Committee.

Bob Rice, CTG, was in California Jan. 16-20 to visit SAMSO, NOSC, and AEROJEC as a part of current work on a project sponsored by NSWC in Silver Springs, MD. He participated in briefings on the Defense Satellite Program and various data compression techniques employed by naval remote sensors.

Doug Robertson is back at work after recuperating from minor surgery.