

Station News

Georgia Tech Engineering Experiment Station

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Governor Joe Frank Harris signs the bill changing EES's name to GTRI. Senator Jim Tysinger (extreme left) and Representative Dean Alford (to Governor's immediate left) observe the historic event with Tech officials (L-R) Henry Bourne, John Culver, Cecil Phillips, Rudy Yobs and Bill Borchert. Not shown: Senator Joe Burton and Walter Carlson. (Photo by Alan David)

Steenblik Invents New 3-D Process

Did you ever dream you could see 3-D images on a TV screen using special glasses with clear lenses—not red/green? See these images equally well from any angle in the room—not limited to straight-on viewing? And use these glasses for several hours without eyestrain? You soon will be able to, thanks to a new invention by Rick Steenblik of the Technology Applications Lab (TAL).

Not only that, but if you choose not to wear the glasses, you will still see a sharp single 2-D image—no blurry superimposed images. Steenblik's new patent-pending process codes depth information in a unique way. The glasses decode the information and create the two images required for depth perception.

Although the process will work for specially created 3-D television movies and even on some ordinary 35mm color photographs, its first commercial

application will be in a cartridge video game. Intellivision, Inc., a new company which recently bought out the old Mattel Electronics Intellivision Division, has licensed the new technology from GTRI for use in its new "Hover Force 3-D" game. The game was the centerpiece of the Mattel booth at the Consumer Electronics Show in Las Vegas in January and was very popular.

"The beauty of the process for computer graphics is that it is very inexpensive, requires no hardware modification, minimal software modifications, and will work on anybody's TV or video monitor," said Steenblik. The game will use simple fixed lenses with a preset maximum depth, but more sophisticated versions can be made that will allow the viewer to dial the degree of depth desired. Steenblik believes his concept ultimately will have important applica-

EES Becomes GTRI

It's official, folks! EES is now GTRI, although we won't begin using our new name for a few more months.

On April 6, a delegation from Georgia Tech was present as Governor Joe Frank Harris signed the bill authorizing the name change from Engineering Experiment Station to Georgia Tech Research Institute. GTRI, in turn, will henceforth be known as the Georgia Tech Research Corporation (GTRC).

The new names are considered more descriptive of the actual functions of each organization. EES received its original name at a time when a rash of engineering experiment stations were being created all over the country with passage of the Smith-Howard Act, which provided for federal support of engineering research in state-supported institutions of higher learning. Through the years, EES has moved far beyond the original limits of engineering research and experimentation into a broad spectrum of engineering, scientific, economic, and other technical research and services. It has become a widely respected research institute.

As for the current GTRI, the term "corporation" will be more representative of the contractual, financial and legal functions which it performs. EES will delay implementing its name change to allow GTRI time to make a smooth transition with its contracting agencies.

tions in medicine, chemistry and air traffic control.

The new process was the subject of articles in the January 31 issue of the *Atlanta Journal and Constitution* and the February 11 issue of *Science News*. Other articles in technical journals are forthcoming.

RAIL Tests Radar in Snowy Michigan for Army Study

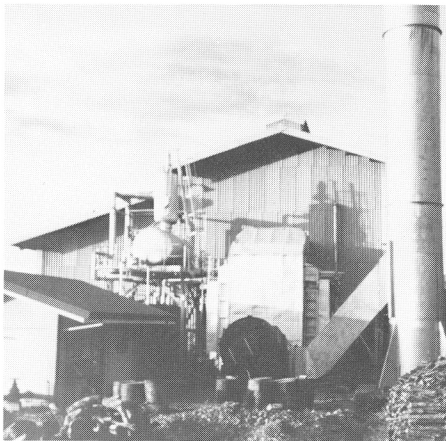
Radar and Instrumentation Lab (RAIL) engineers have done radar studies on oil platforms off the shores of Florida, on ice sheets in the Arctic, and many places in between. In February and March of this year, they added an old fire tower in Michigan's remote Upper Peninsula to the list.

There, under the guidance of Ted Lane and Nick Currie, they trained two millimeter wave radars on a field of snow, collecting data on what snow looks like on radar under varying conditions—while falling, melting, etc. A computer network, developed by David Odom, recorded exactly what the radar units "saw." Anthea Coster, Linda Harkness, and Mark Corbin analyzed these data on site and correlated them with reports of snow conditions made by crews from Michigan Technological University, who were on site measuring such things as temperature, snow grain size, and free water content of the snow. At the same time, an Army helicopter equipped with two similar state-of-the-art radar systems and a subcontractor's helicopter with yet another radar flew over the area taking independent measurements. Judy Truett prepared biweekly reports providing the results to the Army.

"The object of the research was to provide scientific data to enable the U.S. Army Missile Command to determine techniques for detecting military targets under winter conditions," said RAIL Project Director Trent Farill. "The data will help in developing improved weapon systems that can operate more effectively in various snow conditions. More than 40 engineers and technicians worked many months in preparation for the data collection effort."

This program caused no little interest and excitement among the populace in the Houghton, Michigan, area. Publicity included a front-page newspaper article, an editorial, letters to the editor, and a television interview.

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Top: Judy Truett helps with data analysis during RAIL's recent radar snow studies.

Bottom: This rural electric power plant in the Philippines is fueled by tropical trees that grow like Jack's beanstalk.

Philippines Grows Trees to Produce Electricity

In the Philippines, *ipil-ipil* means electricity—in a roundabout way. The National Electrification Agency (NEA) is promoting cultivation of the extremely fast-growing giant *ipil-ipil* trees on tree farms and harvesting them to fuel small power plants throughout the rural areas of that island nation. And the agency has hired EES's Technology Applications Lab (TAL) to conduct a comprehensive and impartial evaluation of the ambitious project.

The report resulting from the Georgia Tech review will offer suggestions to NEA for possible improvements. It also will help the Asian Development Bank, which has been asked to support the program, to determine areas where the bank might be interested in investing.

"The tropical *ipil-ipil* tree is native to the Philippines and looks much like mimosa," said Project Director Bill Bulpitt. "It can grow to a height of 20 feet in three years. The trees are being grown on energy plantations, and plans are to harvest them every four years to use as fuel for 1-3 megawatt power plants operated by rural electric cooperatives. The name of the program, 'dendro thermal,' is derived from Greek words meaning 'tree' and 'heat'."

A review team consisting of full-time EES engineers and economists, supported by consultants who are experts in the fields of institutional development, forestry, wood harvesting and transport, has already begun its investigations. Dr. Robert Williams of Hodam and Associates, Inc., a California-based consulting firm, is the in-country coordinator for the Tech project. Both Bulpitt and Williams have extensive experience in the biomass energy field, particularly in the design and construction of wood gasifiers and boiler plants.

Bulpitt and TAL engineers Jim Walsh and John Adams will be working on site in the Philippines in April. EDL economists David Clifton, Tze Chiang, Bob Lann, and Bill Riall will join them in the future.

MINICOMPUTER NEWS

EES is expecting the delivery of an IBM 4361 computer and various peripherals sometime in August or early September 1984. This IBM mainframe computer will be used for research administration and related matters.

The MiniComputer Service Facility (MCSF) will install the IBM 4361 at the Electronics Research Building alongside the VAX 11/780. This is a temporary location until a computer room is ready in the new research building now rising on Tenth Street.

The peripherals on order with the 4361 include disks, tape drives, display stations, and various printers. Besides a line printer, there will be several letter-quality printers and a laser printer, giving a versatile range of printing capabilities.

MCSF continues work on its Ethernet network. Users in ERB are able to access the CYBER and IBM at the Rich Building. Lab directors and

(See "Computer," page 3)

EES Hosts National Radar Conference

EES recently had the honor of organizing and hosting the first U.S. National Radar Conference to be held by the Institute of Electrical and Electronics Engineers (IEEE). Before now, the only such conferences have been on the international level, alternating every two or three years between Washington, D.C., and London, England.

Held March 13-14, the conference drew 225 attendees nationwide as well as participants from England, Germany and Sweden. They represented many of the nation's most prominent industrial, research and governmental organizations.

Jim Wiltse (OOD) was general chairman of the conference. RAIL personnel on the Program Committee included Ed Reedy, Mark Richards, Josh Nessmith, Neal Alexander, Jerry Eaves, Charlie Brown, Bob Michelson, Tracy Wallace, Joe Bruder, Jim Scheer, Bill Holm, Steve Zehner, and Nick Currie. Also on the committee were Fred Dyer (OOD), J. W. Dees (OCA, former EES), Keith Huddleston (EE), and Walter Thain (former RAIL, now with Gulf Applied Research).

Conference sponsors were the Radar Systems Panel of the IEEE Aerospace and Electronic Systems Society (AESS) and the Atlanta Section, IEEE. RAIL spearheaded the formation of a local AESS chapter in August 1982. Neal Alexander was its first chairman, and Nick Currie is the current chairman.

Computer (From page 2)

administrative staff are able to use the ALL-IN-1 electronic mail system on the ERB VAX at high baud rates.

Difficulties with the fiber optics link to the Baker Building have delayed the inclusion of Baker on the Ethernet network. Preparation of the fiber optics connections is a time-consuming and delicate operation, but MCSF is gaining skill in this work. Baker should be on the network no later than May.

VAX System Support is ready to serve you. Call us at ext. 3175, ERB Room 157, or at 424-0898, Cobb County.

Art Vandenberg, MCSF

Professional Activities

ECONOMIC DEVELOPMENT LAB

John Nemeth chaired a session on Integrated Waste Management at the Annual Conference of the National Association of Environmental Professionals in Baltimore, MD, April 15-18. He will chair a session on Land Treatment of Sludges and Wastewaters on Forested Sites at the TAPPI Research and Development Conference in Appleton, WI, September 30-October 4.

The Environmental Health and Safety Division recently conducted three very successful continuing education events. The third annual Asbestos Symposium drew some 400 participants from 30-plus states in its week-long, eight-course program. More than 300 people attended the first annual Southeastern Safety and Health Conference at the Ritz-Carlton; **Marty Melton** deserves a big hand for making this new event a giant success. The fourth Industrial Toxicology short course also was held.

EDL also sponsored the 17th annual Basic Economic Development course in cooperation with the Georgia Industrial Developers Association and the Southern Industrial Development Council on April 8-13.

ELECTRONICS & COMPUTER SYSTEMS LAB

Richard Moss is the technical program chairman for GLOBECOM 84, a major IEEE communications conference to be held in Atlanta November 26-29, 1984. **Bob Rice** and **Les Pickering** are vice-chairmen.

ENERGY & MATERIALS SCIENCES LAB

Jan Gooch spoke on "Coatings" at the Practical Thermal Analysis Symposium held at Georgia Tech on March 19 under sponsorship of the Society of Plastics Engineers.

OFFICE OF THE DIRECTOR

Jim Wiltse and **J. W. Dees** (OCA) left April 3 for a three-week tour of the People's Republic of China under an exchange agreement between Georgia Tech and the Chinese Association of Science and Technology. They were to give a series of lectures on research at Tech, as well as visit laboratories and electronics factories. Their itinerary also included a five-day lecture tour of Japan.

Senator Sam Nunn has appointed **Rudy Yobs** to serve on the first Georgia Productivity Board. Yobs will present a paper entitled "Characterization of the Productivity Infrastructure of the United States" at the 4th World Productivity Congress, to be held May 14-16 in Oslo, Norway. **David Clifton** (EDL) is the coauthor.

RADAR & INSTRUMENTATION LAB

At the National Radar Conference in Atlanta March 13-14, RAIL personnel presented three papers: "Microwave/Millimeter Wave Measurements of Sea Ice," by **Nick Currie**, **Jerome Callahan** and **R. C. Lott**; "Analysis of IPAR Field Performance," by **Marvin Cohen** and **Ben Perry**; and "Field Tests and Modeling of Grazing Microwave Propagation Phenomena at L-Band and X-Band Frequencies," by **Frank Williamson**, **Steve Zehner**, and **Mel McGee**.

Gene Knott, **John Shaeffer**, and **Mike Tuley** presented a "portable" version of the Radar Cross Section Reduction short course to 39 people at the Naval Weapons Center in China Lake, CA, the week of March 19. They reported that the attendees seemed most interested in the design of stealth cars for evading police radars!

TECHNOLOGY APPLICATIONS LAB

On March 21, **Carol Aton**, **Claudia Huff**, and **Ginny Thomas** made a presentation to the Atlanta chapter of the Society for Technical Communication on "Production Roulette," a training game designed to simulate the publications production process and to sensitize researchers to technical communications problems.

The Industrial Energy Extension Service conducted two back-to-back workshops in Atlanta March 21-22: "Improving Steam Boiler Efficiency" and "Waste Heat Recovery." The workshops drew more than 50 participants from throughout Georgia.

Alan Pashkevich spent seven weeks (January 23-March 9) in Sri Lanka preparing, delivering and evaluating a "training of trainers" workshop for 21 Sri Lankan nationals involved in rural and urban water supply programs in that country. The workshop was sponsored by the U.S. Agency for International Development.

The Agricultural Technology Branch has issued two engineering research reviews aimed at the poultry industry: "Wood Heat for Broiler Houses" and "Motor Maintenance for Processors."

Will Electric Vehicles Hurt Communications?

Large numbers of electric vehicles could cause interference problems with communication services, researchers in the Electronics and Computer Systems Lab (ECSL) have found.

They recently investigated the electromagnetic interference (EMI) aspects of electric vehicles under a program sponsored by the U.S. Department of

Energy through the Aerospace Corporation. Their measurement results indicated that a large population of these vehicles could interfere with communication services operating below 100 MHz (most notably, AM broadcasts) and that some type of EMI suppression should be employed. In addition, emissions from on-board battery chargers into connecting power lines were found to be quite large and also would need to be mitigated. However, researchers determined that

electric vehicles are not adversely affected by the electromagnetic environment.

The group, led by Project Director Jimmy Woody and Assistant Project Director John Daher, developed a comprehensive set of test procedures and performance limits for electric vehicle interference control. These procedures and limits are being reviewed by the International Special Committee on Radio Interference, a worldwide technical organization that recommends standard limits and test procedures. If accepted, Georgia Tech will be credited with developing an international standard for testing EV's.

Strictly Personal

ELECTRONICS & COMPUTER SYSTEMS LAB

Welcome to new employees **Joan Bunch**, administrative secretary, and **Mike McCracken**, senior research engineer.

Bennett Teates, **Steve Hughey**, and **Janet Myrick** have resigned.

RADAR & INSTRUMENTATION LAB

Guy Morris has joined the Analysis Division staff as chief scientist. **Glenn Petterson** and **Rodney Cannon** have transferred from STL.

New co-ops are **Scott Tippens**, Analysis Division, and **Lizbeth Applebaum** and **Bruce Woodruff**, Fort Mouth.

Mark Corbin has resigned.

RESEARCH COMMUNICATIONS

Jerry Webb has been promoted to artist II.

SERVICE GROUPS

Accounting: **Julie Blankenship**, **Jim Allison**, **Betty Moss**, and **Mildred Heyser** have been promoted to accountant II.

Mechanical Services: **David Calhoun** is transferring to the Purchasing Department, receiving a promotion to buyer I. **Mark Burke**, **Randale Keasler**, **Larry Hale**, and **Chon Pyen** have resigned.

Personnel Services: **Chris Gaddis** has been promoted to personnel assistant I. **Paul Thomas** has joined PSD as administrative coordinator. **Linda Lautenschlager** is transferring to RAIL as a senior secretary.

Research Property Management: **Kay Buswell** is transferring to the School of Mechanical Engineering, and **Gwen Kelly** is replacing her as senior secretary.

Research Security: **Paula Wilcox** has been promoted to security specialist. **Ed Gilmore** was married to Gloria Johnson on February 25.

Supply Services: **Susie Haynes** is a

new clerk typist II. **Dianne Karnebo** has transferred to Industrial Education as a senior secretary.

SYSTEMS & TECHNIQUES LAB

STL said good-bye in March to the following: **Mark Stapleton**, **Mark Hudgens**, **Reed Richards**, **Jim Brown**, and **John King**. **Bill Williams** transferred to SEL.

SYSTEMS ENGINEERING LAB

Myra Thompson has been promoted to clerk typist II.

Recently departing SEL were **Scott Coleman**, **Joe Harris**, **Larry Qualls**, **Ken Perry**, **Tony Rampey**, and **Sheri McGuirk**. **Arline Farmer** has replaced **Sheri** as administrative secretary of the Techniques Analysis Program Office.

Congratulations to **Margaret** and **George McDougal** on the birth of a son, **Jonathan Chase**, on March 1; also to **Marianne** and **Nick Pomponio**, whose son, **Nicholas**, was born March 28.

Hugh Warran has joined SEL/OOD as a budget analyst.

Receiving master's degrees in March were **John Gibbons** (ISyE), **Steve Livesay** (EE), and **Steve Kaney** (EE). Congratulations!

TECHNOLOGY APPLICATIONS LAB

Three employees received master's degrees in March: **Jayme Merdzinski** (IM), **Keith Nelms** (ISyE), and **Bob Didocha** (MBA). **Bob** will be inducted into the Beta Gamma Sigma Honor Society, based on completion of the MBA program at Georgia State with a 3.75 average.

Congratulations to **Marielos** and **Don Paterson** on the birth of daughter **Adele** on April 3. **Don** is Tech's chief-of-party in the Sudan.

Charles McCullough is TAL's new administrative coordinator.

Ginnie Burr has transferred to Mechanical Engineering.

Joe Hoppe and **Nancy Watts** have resigned.

Industrial Research Booklet Published

GEORGIA TECH—On Line with Industry is the title of a new 16-page, 4-color promotional booklet which documents Georgia Tech as one of the leading U.S. universities in industrial research. It provides a broad-brush description of all the industrially oriented research at Tech, describing the institution as a whole rather than identifying research units. **Mark Hodges** of Research Communications wrote the booklet, and **Charles Haynes** of the Printing and Photographic Center took the photographs.

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