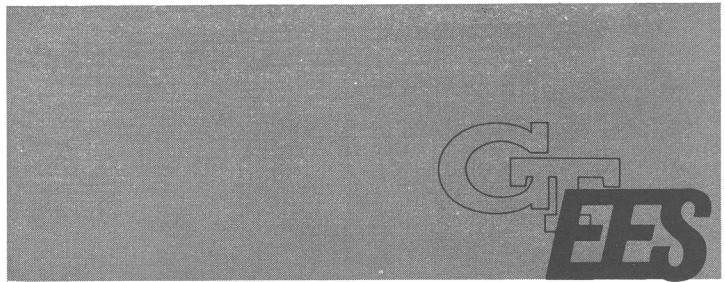


STATION NEWS

ENGINEERING EXPERIMENT STATION • GEORGIA TECH



VOLUME 8

NUMBER 4

APRIL, 1979

EES Airplane Ready for More Programs

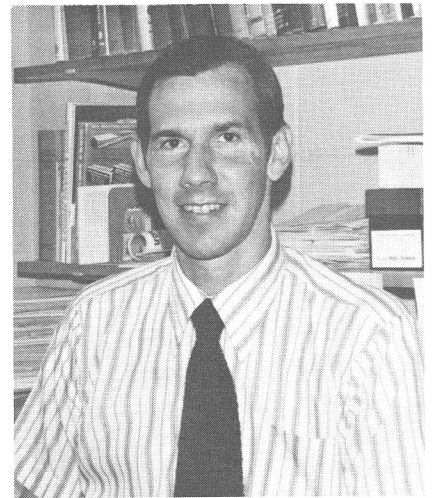


The EES research facility which flies — known as the Airborne Electronics Laboratory (AEL) — is now available for any scientific programs which can use its capabilities. According to Lee Edwards, AEL manager, the research aircraft is now of proven capability, and more than 75 hours of successful test flying on radar ranges in the western U.S. have been logged this year. The plane was donated to Georgia Tech by the Air Force in early 1977.

Described as a modified Convair 240 (T-29B), the plane is a twin-engine, transport type, pressurized, all-weather aircraft. VHF, UHF and HF radios are incorporated along with other avionics equipment for operation under either Visual Flight Rules or Instrument Rules and from either civilian or military airports.

Two radomes are available — one on the underside and the other on the nose structure. Furthermore, electronics equipment racks have ample space for complex systems, data recorders, etc., and operators' chairs and seats for a few observers are installed in the spacious cabin. Sufficient electrical power is provided for operating test equipment and all other on-board electrical equipment and for starting the main engines. Appropriate insurance policies are maintained.

Since January, EES has been conducting flight tests under contract with the Avionics Laboratory of the Air Force Systems Command. Electronics experiments are being run to determine effectiveness of several innovative, radar-related techniques using electronics designed, fabricated



Lee Edwards, AEL manager

and assembled principally by Georgia Tech and General Electric engineers. This test series is expected to keep the AEL occupied until the end of August, and although a number of other programs are under discussion, there are, at present, no definite commitments after that time. Lee Edwards can be reached at 428-8316 for information about the research aircraft.

Important characteristics of the Convair are:

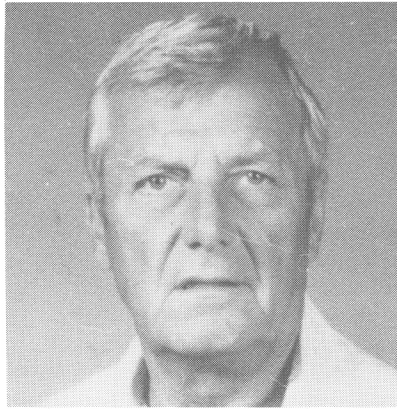
Wing span, ft	92
Length, ft	75
Height, ft	27
Empty weight, lb	29,912
Gross weight, lb	43,575
Maximum speed, knots	266
Cruising speed, knots	200
Initial climb, ft/min	1,230
Service ceiling, ft msl	20,000
Range, nmi	1,300

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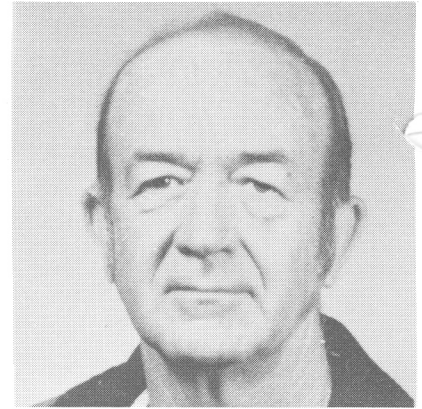
EES Aircraft continued

Operation and maintenance are entrusted to **Hasson Calloway**, chief pilot and director of flight operations, and to **Jim Moore**, pilot, inspector and mechanic. Both Moore and Calloway are full-time EES employees. Calloway, a captain with Eastern Air Lines since 1945, recently retired as a veteran of 37 years with Eastern. His experience is extensive: piloting airplanes both large and small, including his own light acrobatic aircraft, the famous DC-3, the Boeing 727, the Lockheed 1011 and many others. More than 32,000 hours (that's more than 16 working years in the air!) have been logged by Calloway, and co-workers are convinced, according to Edwards, that he is as fine a pilot and as enthusiastic a supporter of EES programs as there is.

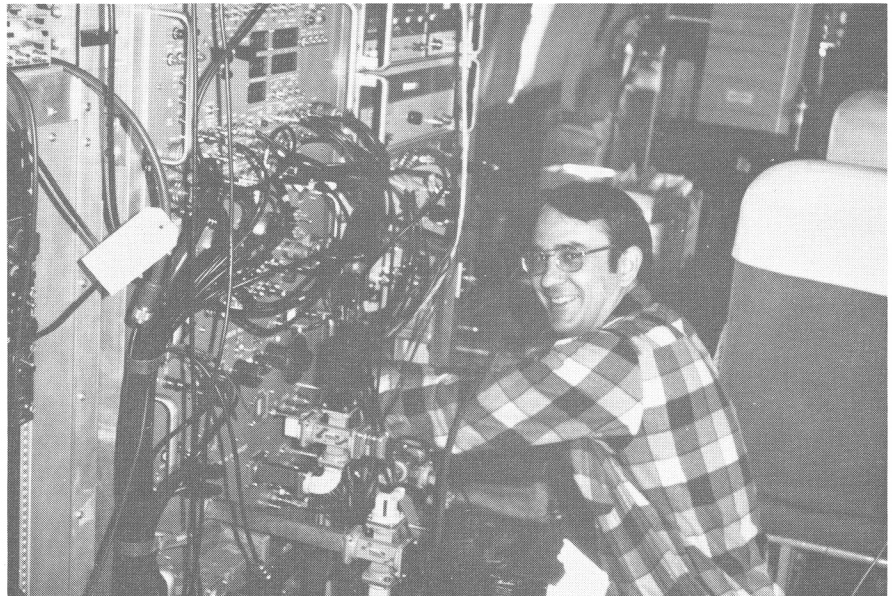
Moore, too, has impressive credentials as a combination pilot and mechanic, and also served with Eastern (sometimes as co-pilot with Calloway). He has extensive experience in aircraft maintenance, including having an Aircraft and Powerplant Mechanic's License and Inspection Authorization, the highest level one can reach as a mechanic. These two specialists have prepared Georgia Tech's airplane for tests.



Hasson Calloway



Jim Moore



"All systems go!" declares **Harry Andrews**, STL, as he prepares the flying laboratory for flight tests. Andrews, project director of the program presently using the AEL, has been accompanied on most flight tests by **Robert ("Dusty") Rhodes**, a veteran of over 20 years with the Air Force before joining EES last fall.

An Equal Education and Employment Opportunity Institution

Former EES Director Bob Stiemke Dies

Robert Stiemke, former director of EES, passed away on March 27. During his 26 years at Georgia Tech, he held many positions of leadership including professor emeritus of civil engineering, executive assistant to the president, vice president for programs and head of Civil Engineering — and was involved in many activities. Bob was associated with the Station from 1962-1966, and former co-workers and friends extend their sympathy to the Stiemke family.



Service Groups

Steven Harris is a new stores clerk in the EES warehouse. The Mechanical Services Dept. also has a new machinist: **William Hale**.

In need of a notary public? As of April 5, **Brenda King**, receptionist in the Baker Building, has been commissioned to be a notary public for four years. Other EES staff known to provide the service are: **Tom Jones**, Baker; **Betty Yarborough**, WGST; and **John Parker**, Cobb County.

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RAIL

In March **Jim Metcalf** and **Bob Trebits** visited the National Research Council in Ottawa, Canada, to discuss ideas and techniques for polarization-diversity radar meteorological research. They saw components of the X-band radar being built by NRC to extend the experimental work in meteorology and radio propagation previously done by NRC at Ku-band. Jim went on to McGill University in Montreal, where he gave a seminar on coherent polarization-diversity radar techniques in meteorology.

Alice Moore, who formerly worked for **Edie Martin**, has given birth to a boy.

Ramsay Hall, who has accepted a position with Texas Instruments, was given a rousing farewell at the Steak & Ale near Cumberland Mall recently.

New employees:

- **Bill Steinway** has arrived here from "up north" and is now in the Radar Technology Area.
- **Marshall Cooksey** has returned from a leave of absence and has transferred into RAIL from ASL.
- ESM has hired several new people: **Charlie Krebs** (SRE); **Michael West** (RSII); **Michael Morris** (ETI); **Gary Price** (ETI); **Marcia Swanson** (co-op); **Keith Vaughn** (co-op); **Andrew LiCausi** (ETI); **D. Greenwood** (Drafter I).
- New people in the Computer Sciences Division are: **Mark Johnson** (co-op); **Carolyn Whatley** (RAI).

Robert Bird Receives Plaudit

Often when EES individuals are involved with volunteer work in the community, the contributions in free service are not recorded and little known to others. Recently, **J.W. Dees**, director of EML, received a detailed letter of appreciation for volunteer assistance by **Robert Bird**, professional staff member of EML.

Executive director William B. Kennedy of the Atlanta Association for International Education (composed of forty non-profit agencies working with the international community in Atlanta) stated in the letter how Rob had given of his time and skills to the recently-held Interna-

ASL

In Hawaii at the March American Crystallographic Association meeting, **Dennis Wiles** presented a paper on "Improved Computer Program for Rietveld Analysis of X-ray Powder Diffraction Patterns." At the same meeting, **R. A. Young** presented a paper on "Flat and False Minima in Rietveld Crystal Structure Refinement of Human Tooth Enamel." Following that meeting, he participated in a one-day meeting of the USA National Committee for Crystallography, which he chairs.

Paul Mackie presented a paper entitled "Crystallographic Changes in Human Tooth Enamel by Moderate Heating" at the Fifty-fifth General Session of the International Association for Dental Research held in New Orleans. He was also co-chairman of a session on mineralized tissue.

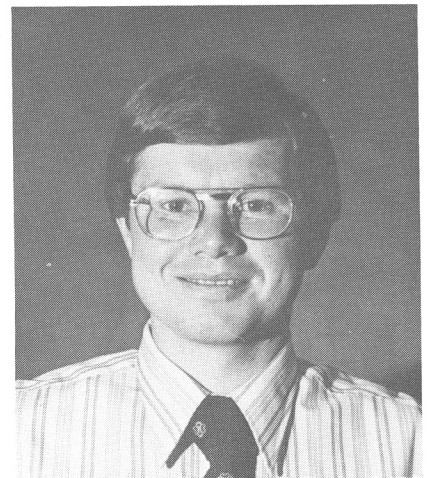
K. Sudarsanan spoke on "Strontium Incorporation in Calcium Apatite: Structural Consequences..." at the same IADR meeting. Also, **Derrold Holcomb** presented a paper on "Some Composition Changes in Human Tooth Enamel Resulting from Heating."

Save gas;
Drive at under 55 mph

tional Festival at Lenox Square. Under great time pressure, Rob accomplished programming a small computer information quiz to inform persons about ethnic Atlanta. As it turned out, the machine available at Lenox was not able to handle the program flexibly enough for use on that occasion, but Kennedy's group now is prepared to accommodate similar future events. "We are all aware," wrote Kennedy, "of how much Georgia Tech contributes through volunteer activity to life here in this city. We are grateful to your institution and department for his (Robert Bird's) help."

Viva!

TDL



Bill Moran has been named new project co-ordinator for the Industrial Energy Extension Service. Moran has been with Georgia Tech since the start of the IEES program in 1977 and was previously employed by Pratt and Whitney Aircraft, a manufacturing research and development corporation.

ETL

Doug Robertson, ETL director, was in Chicago on March 28-30 for the IEEE-EMC Administrative Committee meeting.

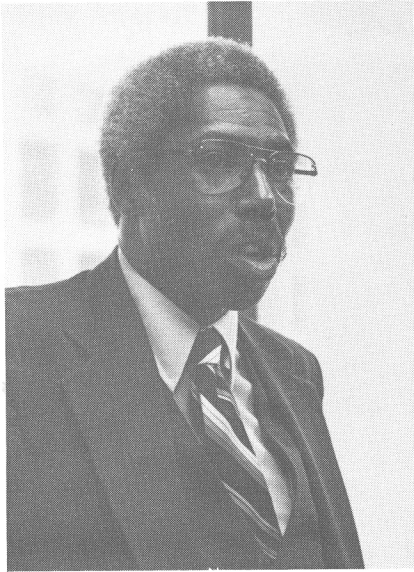
Don Clark (EMC) attended the RADC sponsored IEMCAP training course in Tampa on March 18-24.

Jimmy Woody (EMC) attended the Grounding and Lightning Workshop at the Florida Institute of Technology in Melbourne March 6-8.

On March 27 several EES and campus groups met to discuss their interests in sponsored communications research. The Communications Technology Group described its work in detail, and other units described related activities. It is anticipated that this internal exchange will result in a higher level of awareness of present work and greater opportunity for sponsored work.

Richard Moss (CTG) was at Eglin AFB during February to discuss communications jamming. Related to the same topic, **Bob Rice** visited Hanscom AFB.

Charles Wilson and **John Wood** (CTG) visited RADC to initiate some new work for a microprocessor controlled receiver system.



Ed Bethea

Ed Bethea of TDL's Economic Development Division has been selected as a delegate to the 1980 White House Conference on Small Business. Bethea, director of the Technology Utilization and Commercialization Center at TDL, will be involved in preparing a program representing the small business community to present to Congress and to the President.

Carol Aton of TDL attended the Wood Energy Institute's Wood Heating Seminar and the International Wood Energy Trade Show in Portland, Oregon.

SED

SED welcomes two new employees: **Mr. Pat Rusk** and **Mr. Dean Spencer**. Rusk is a senior research engineer with the Defense Systems Branch and will be working at Robins Air Force Base. Spencer is also a senior research engineer with the Defense Systems Branch and comes to SED from Virginia. SED has a new co-op — **James Worsham**.

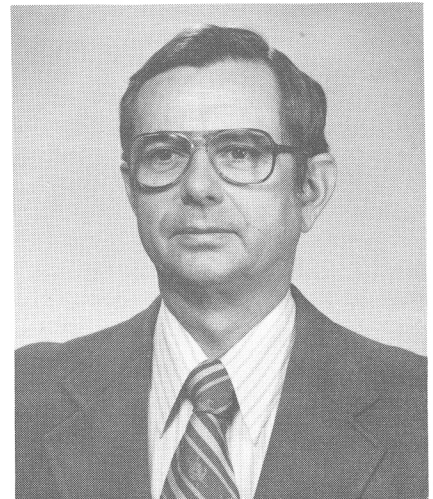
Congratulations to **Lee Burks** and **Doug Davenport** who were married on March 3. Lee is a research engineer with the Special Projects Office of SED.

Bud Sears presented a paper entitled, "Threat Engineering Analysis," to the Dixie Crow Club EW Symposium at Robins Air Force Base on March 22.

Wiltse Named to USSR Popov Conference and to IEEE National Lectureship

The IEEE has selected Jim Wiltse, OOD, to serve as a delegate to the U.S.S.R. 1979 Popov Society Congress to be held in Moscow, May 22-24. In addition to attending the conference and presenting a paper on advanced electronics technology, Wiltse and other members of the delegation will tour research centers, educational institutions and industrial laboratories in Leningrad, Kiev and Moscow between May 12-26.

In a separate action, the IEEE Microwave Theory and Techniques Society (MTT-S) has chosen Wiltse to be the National Lecturer for 1979-1980. In this capacity, he will visit about 15 cities over a one-year period, giving a presentation on advances in millimeter-wave technology and systems. Wiltse will also be an invited keynote speaker at the International Microwave Symposium, Orlando, April 30-May 2.



Dr. James C. Wiltse, Jr.

In addition, he will serve as the editor of the *MTT-S Symposium Transactions* issue (December, 1979) and the editor of the August, 1979, *Microwave Journal*.

IPO

Work is continuing on IPO's overseas appropriate technology pyrolysis projects. **Kermit Moh** left Atlanta April 1 to work on the UNIDO project in the Philippines, relieving **Frank Malvar**, who will go to Ghana the latter part of April to work on final phases of the AID project. **Ross Hammond** will be in the Philippines April 19-28.

The contract for the second year of the Korea Credit Guarantee Fund industrial extension project was signed during a visit to Georgia Tech on March 28-30 by the KCGF Executive Director, Youn Jai Kim. Mr. Kim also visited the new EES field office in Gainesville, where he toured poultry industry installations. **Ross Hammond** will go to Korea April 29 for three weeks of on-site project activity.

Jamal Zemmouri, Director General of the Office of Industrial Development of Morocco, visited IPO March 30 to investigate the possibility of Georgia Tech assistance in a World Bank-funded small industry development project in that country.

On April 4-5, IPO hosted the 1979 Eisenhower Fellow from Egypt,

Dr. Yusef K. Mazhar, who is director general of the Engineering and Industrial Design Development Center (a UNIDO project) which is responsible for small industry development in Egypt and the Arab states.

Dick Johnston is arranging a one-month training program in solar energy for two staff members of the Philippine Bureau of Energy Development, tentatively scheduled for May 20-June 20. They will attend solar energy short courses at Georgia Tech and two important international solar conferences to be held in Atlanta during that time. A 10-day program of solar energy orientation, information source training, and visits to Atlanta area solar energy facilities and to southeastern organizations having R&D programs in this field are also on the schedule.

Other Activities:

Clint Stone was in Vienna March 28-April 1 to review research institute activities around the world for UNIDO.

Nelson Wall is preparing a 35-hour seminar on "Field Agents Training on Industrial Diagnosis" for presentation in Guatemala the week of May 20 to personnel of the Central American Research Institute for Industry.