

the GTRI connector

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New Software to Increase Air Force Pilot Survivability

by Martha Ann Stegar, RCO

You're a fighter pilot planning a mission under combat conditions. You know your mission requires flying over areas that are heavily defended by missiles and other weapons in order to reach the target. Your task is to select the flight route that offers the best chance to complete the mission successfully and return alive.

Until now, much of this planning had to be done manually—and it took hours. Often there wasn't time to do it correctly, and it was too cumbersome to recalculate the flight path when new threat information was received. A better planning method clearly was needed to speed up the process as well as to improve the quality of the final plan.

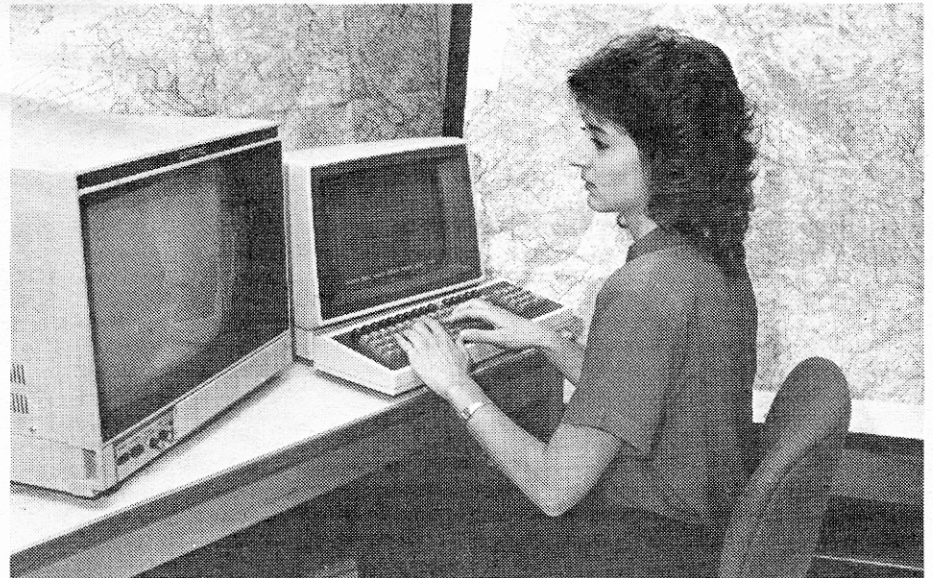
Now, researchers in the Electronics and Computer Systems Laboratory (ECSL) and the Electromagnetics Laboratory (EML) have designed and developed a computer software system to assist the mission planner in the manual or semi-automatic generation of routes through a threat-defended area. This Penetration Analysis Aids

System, called "Pen-Aids" for short, will soon be ready for actual use in the field.

Current Air Force plans are to field 700 to 1,000 of the systems, starting in December 1987. They will be distributed to every American tactical fighter squadron and wing worldwide.

The system of decision aids and computer tools combines terrain elevation data and other mapping information with intelligence reports on the types and locations of enemy threat installations to calculate where the gaps in visibility and lethality are. It takes into account, for example, where a low-flying aircraft might be hidden from ground-based enemy radar by hills. It also takes into account the variations in firepower and range among the different types of defensive weapons.

All this is done on a microcomputer which provides a map-referenced color graphics display of the mission area and decision aids for planning. The decision aids supply the location, terrain-masked coverage, and relative danger of each threat at the desired flight altitude, and suggest the optimum route to follow.



Gena Hillhouse (ECSL) is shown operating the "Pen-Aids" software system that will help fighter pilots plan the best routes through threat-defended areas. (Photo by Margaret Barrett)

Analysis can be accomplished in minutes, not hours. The interactive system allows for both manual and automated route generation, and the input parameters can be varied easily for quick and accurate recalculation.

The GTRI team has worked to complete this task under the sponsorship of the Tactical Air Command and the Rome Air Development Center. Jim Coleman of ECSL's Command and Control Division is the project director, and Mike Rowan of

EML's Electro-Optics Division is the technical director.

"This is a data-intensive system, but it isn't a laboratory system," Coleman says. "It's designed to meet real-world operating requirements for our pilots in the field."

Pen-Aids is the first component in an integrated Mission Planning System that will also include flight planning and weapons delivery software systems. The other modules are being developed at the Tactical Air Command and at the Tactical Air Warfare Center.

Grekeker Awarded Patent

Gene Grekeker of RAIL has been granted a U.S. patent for his "Doppler



Distrometer for the Measurement of Hydrometeor Size Distribution." The patent, No. 4,660,038, was awarded April 27, 1987.

It covers the design of a system that allows the particle size distribution of rain and hail to be measured with a single instrument. Traditionally, an impact distrometer has been used to measure raindrop sizes from .5 to 5 millimeters; Styrofoam pads have been used to measure the hail by inferring size from the impressions made in the Styrofoam. The Doppler distrometer

measures all particles from .5 millimeter to 12 centimeters.

"When doing radar meteorology studies, researchers need accurately calibrated data," Grekeker explains. "They need to know the sizes of the raindrops or hail falling, the number of each size, and the time they fell. The Doppler distrometer makes this very easy to check."

In addition to being the first instrument to combine the measurement of rain and hail, Grekeker's distrometer offers a

potentially inexpensive design approach. "Unlike current distrometers, it's highly portable and can be left out in the field," Grekeker says.

Grekeker developed the distrometer on his own time. He obtained the patent with Georgia Tech's help, and the patent has been assigned to GTRI for marketing purposes. "Now we need funds to build an engineering development model to show to potential clients," he says.

Working Group Studies New Contractual Vehicles for GTRI

A working group composed of representatives from the six GTRI laboratories that do business with the Department of Defense is developing a joint action plan to help GTRI adapt more effectively to today's stringent contracting environment.

"We are trying to secure more flexible contract vehicles that will benefit all of GTRI," says Guy Morris (RAIL), leader of the Contractual Vehicles Working Group. "We surveyed the labs and

found that approximately \$10 million in potential business was delayed or lost over the past three months because no suitable contractual mechanism was in place. Labs often say, for example, 'We've got a guy who wants to give us x dollars, but we don't have an umbrella contract that he can tag onto.'"

The basic problem, according to Morris, is this: "GTRI's traditional method of operation has been for individual entrepreneurs

to find their own funding. But governmental rules have changed; now the contracting cycles are longer, and it's much harder for small sole-source programs to be approved. DoD is going more and more to competitive indefinite quantity contracts and basic ordering agreements."

Morris adds: "It's not much more work for the government project engineer to let one of these large umbrella contracts than it is to let a single \$200,000

award. The multimillion-dollar contracts, however, are usually too broad in scope for a single lab to fulfill. They are multi-lab at a minimum, frequently multi-organizational."

The working group's near-term objective is to immediately identify areas where GTRI's needs are the greatest and simultaneously get teams from the labs out on the road to secure more flexible contracting programs. "We

See "Contract," page 3

STL Succeeds in Developing New Research Programs

by Martha Ann Stegar, RCO

Two years ago, it was a laboratory facing an uphill battle. The large threat system prototype programs upon which it had depended were completed, and it was scrambling to get new ones funded. But today, thanks to superior performance in development of new research programs during the past year, the Systems and Techniques Laboratory (STL) is sitting pretty.

In FY 1986, Ernie Ruda brought in the largest single contract ever awarded to GTRI—the \$14.7-million T2 program—and so far in FY 1987, STL leads the other laboratories in research program development in GTRI (\$12 million awarded as of April).

STL Director Charles Watt says total contracting in the laboratory during FY 1987 will approach the \$20-million mark and the backlog of high-technology programs will exceed two years. He praises the entire staff for its teamwork, dedication and leadership in placing STL at the forefront of research at Tech.

He gives special recognition to Associate Director Tony Chimera, Chief Scientist George Ewell, Defense Electronics Division Chief Joe Parks, Advanced Technology Division Chief Don Bodnar, and Microwave Systems Division Chief Pat Burns, along with several senior staff members in STL such as Dayton Adams, Jim Higgins, Larry Corey, and Henry Cotten. "All of them are excellent researchers and exceptional managers," Watt says. "They have increased the laboratory's research effort by a factor of 10 in 12 months with a marginal increase in staffing . . . that is effectiveness by any measure!"

Watt adds: "Perhaps of more importance than the quantity of



Division chief Joe Parks (left) and STL director Charles Watt discuss the laboratory's current success in contract development. (Photo by Anita Edwards)

research being performed is the quality of our research. In the last 10 months, the concepts and advanced development portion of our research base has increased from 4% to 20%. These activities include a number of front-end developments, such as a transportable multibeam, multifrequency antenna that utilizes a spherical lens concept with multifeed systems, several phased-array radar systems, a multiple-object tracking simulator that can mimic the illumination characteristics of a multiple-engagement radar, and a modular millimeter-wave simulator system."

A Success Story

How do they do it? Let's look at the Defense Electronics Division (DED), directed by Joe Parks, as an example.

DED recently increased its new research programs by \$5 million and expects another \$5 million before the fiscal year ends. The bulk of these initiatives are new U.S. Army research programs that have been incorporated into a \$10-million contract with STL.

Even as Parks was telling this reporter that they had recently received \$2.5 million for new radar developments, the telephone rang. It was another \$500,000 research task. In addition to this contractual arrangement, DED has booked another \$2.5 million in research, including a \$1.5-million contract with the U.S. Air Force.

DED is an electronic systems group. "We are involved in every aspect of radar research and employ professionals who have expertise in the areas of signal processing, receivers, servo electronics, displays, computer engineering, and mechanical design," Parks explains. "Our work is complementary to that of other divisions and the Special Program Office in STL."

Elements of Contract Development

So how did this all come about? Parks has some definite ideas on what constitutes good contract development:

- *A strong element is outstanding performance on current work.* "We stress excellence in

research performance on those programs under contract," he says. "In the small community in which we operate, reputation is very important. We can't afford a serious overrun or a failure to reach technical expectations. STL's success is due in part to our superior performance; it has greatly enhanced our reputation. In achieving this performance, there is no substitute for a highly qualified, experienced staff, and we strive to maintain the best."

- *The second element is leadership.* This is of prime importance, in Parks' opinion. "Our Laboratory Director provides this element in a consistent and outstanding manner and requires the same attributes of his subordinates."

- *Finally, don't rest on your laurels.* "You cannot relax because you've developed \$15 million in new research this year," Parks emphasizes. "You must continually look to the future. This is especially important in the dynamic research environment that we have in threat systems. For example, stiffening government requirements demand that we be more efficient in our research activities so that we can offer more value per research dollar, and consequently be more competitive. We also need to be more flexible and responsive in our relations with our sponsors."

Parks is carrying out his own advice. His division currently is developing new research proposals valued at more than \$10 million for FY 1988. DED also is the lead group in a multi-lab proposal effort, along with RAIL and SEL, for the Air Force. This \$4.5-million program should be awarded by September 1987.

Parks, who came to GTRI from Scientific Atlanta in 1978, has been DED chief since 1979.

GRAs Contribute to GTRI Research

GTRI has made a concerted effort to provide meaningful employment for graduate students for several years. The program, headed by Dr. James C. Wiltse, now has approximately 105 graduate research assistants on the GTRI payroll, compared with 84 a year and a half ago.

These students work in all seven laboratories as well as OOD and CRSD. Electrical Engineering supplies 47% of the GRAs; Information and Computer Science, 14.7%; Physics, 13.7%; and the remaining 24.5% come from other academic units.

"Everyone benefits from the arrangement," Wiltse says. "School directors are finding that the ability to offer part-time employment with GTRI is enabling them to attract more and better graduate students. The students not only are helped

financially, but also have the opportunity to participate in research that contributes to their education. And the research units have the services of people who often can take responsibility on a professional level."

Some of these GRAs are supported by GTRI's Office of the Director (OOD) under an incentive program started last fall for first-time GRAs. If the GRA works on a sponsored project, the laboratory or unit employing the GRA can use the OOD money for contract development, new equipment, or similar expenditures.

Under the incentive program, OOD covers one-third time (approximately 13 hours per week) for up to one year for new GRAs who are U.S. citizens and meet stringent standards of excellence. If the student is a doctoral can-

didate, the assistance may extend for several years.

"OOD is discussing the possibility of another incentive program," says Dr. Wiltse. "We are considering an arrangement to provide support to research faculty who will act as thesis advisers and will monitor GRAs."

When the schools at Tech accept prospective graduate students, they forward their resumes to GTRI, where they are circulated among the labs. "We try to find a lab unit that can efficiently use a free engineer, and try to find a compatible match with the student's research interests. Every attempt is made to place students in positions where they can do work that will dovetail with their thesis research, although this is not always possible," Wiltse says.

He adds that part of the GRA support comes from the Office of the Vice President for Research

under Dr. Stelson's "insurance" program. "As a rule of thumb, only about one out of three graduate school applicants actually shows up. We and the schools agree to make up to three times the offers we can support. If more than one third of them accept our job offers, Dr. Stelson will supply funds to cover the excess, when the students meet his requirements."

Dr. Wiltse has been assisted in monitoring the GRA employment program by Ann Mintz (now retired). Marsha Braswell of the Human Resources Department handles all personnel matters for the GRA program, as well as for co-ops, student assistants, and work-study students. This involves voluminous paperwork, including surveying the needs of the labs, processing and routing resumes, correspondence, and personnel action and payroll forms.

Professional Staffing Is Big Business



GTRI's technical recruiting team (left to right): Geri Holder, Cathy Dunnahoo, Gay McLarin, and Russ Cappello. (Photo by Margaret Barrett)

Professional staffing for GTRI is big business. Technical recruiter Russ Cappello and his staff in the Human Resources Department (HRD) handle an average of 240 resumes each month. Cappello screens out approximately half of the resumes, then routes the remaining ones to the labs that do work in the area of each candidate's qualifications.

Some resumes come in unsolicited, but the majority are the result of referrals or in response to advertisements. In March, for example, GTRI had 83 positions open. HRD assists the labs and service groups in interviewing the best candidates for each position, conducting 20 or more interviews each month. At the end of the first nine months of FY 1987, HRD had assisted in the hiring of 60 research professionals.

"Our job is to help management in the labs find the best-qualified people in the most cost-effective way," Cappello says. "We periodically check with the labs to see what their needs are. And we try to make their jobs easier by keeping them informed of the latest national salary surveys and other factors that affect the professional job market and our competitiveness."

Recruiting Techniques

Cappello says the key to successful recruiting is to have adequate sources of leads. "We are constantly trying to build up our sources, analyze them in terms of cost-effectiveness, and work with those that deliver the best results," he explains. "For instance, we ask lab management where they prefer to get graduates, then make sure that copies of our professional placement bulletin go regularly to the placement offices, engineering departments, and alumni offices of these 'super-universities,' as well as the best minority colleges."

General advertising includes running a full-page ad in the annual College Placement Manual and mailing a flyer annually to 38,688 IEEE members. Ads for specific job openings are placed in selected newspapers and technical media.

How else does Cappello develop leads? "Intelligence gathering is one way," he explains. "We subscribe to the *Wall Street Journal*, noting when a company is in trouble and its engineers may be looking for a place to relocate. We also do a lot of networking. We call around looking for leads from personnel managers,

former job candidates, their colleagues, and others."

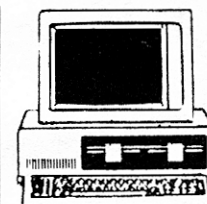
Referrals Best Source of Leads

All this is well and good, but Cappello says the best source of leads is referrals. That's where GTRI staff members come in. "It's everybody's duty as a member of the organization to refer good people when they see them," Cappello stresses. "The most difficult jobs to fill are the senior-level positions. Often the kind of person we're looking for isn't seeking a change, but if you make us aware of the possibilities, we can be the go-between. You may meet them at seminars and conferences, or you may read their articles in technical journals. Give us their names, and we'll take it from there."

How else can the labs help? "Keep us informed," Cappello emphasizes. "Send us copies of resumes you receive independently. Tell us how we can help you. Give us ideas on where to advertise. Last, but not least, let us know what we are doing right and wrong."

Cappello plans to refine HRD's professional recruiting system. At the end of the year, he plans to analyze all sources of leads and determine which were the most productive. He also will calculate a cost-per-hire figure and compare it with the industry average.

Cappello has a team of dedicated HRD employees helping him. Administrative assistant Gay McLarin places the ads, conducts interviews, compiles the Professional Placement Bulletin, performs Applicant Clearinghouse liaison, and handles special projects. Cathy Dunnahoo tracks the progress of every candidate on her computer. She logs and routes resumes, checks with lab coordinators, handles correspondence with the candidates, and conducts benefits orientation. Geri Holder handles all secretarial duties, including all mailings.



Software Review

by Pat Mathiasmeier, CRSD

As part of CRSD's continuing effort to control costs and increase computing power, CRSD has consolidated GTRI IBM mainframe computing to a single system/CPU. As a result of this consolidation, the Model 204 Database Management System (M204) was moved from the IBM 4361 to the IBM 4381 Model PO1, the same computer that houses PROFS and the GTRI accounting system conversion project. The 4381 PO1 was then upgraded to a 4381 Model P13.

As a result, the CPU capacity has increased to 3.5 mips (million instructions per second) on the 4381 Model P13, as compared with 1.2 mips on the 4361 and 2.0 mips on the 4381 Model PO1. The amount of available disk space has been increased from 4.4 Gb on the 4361 and 5.04 Gb on the 4381 Model PO1 to 10.08 Gb on the 4381 Model P13. In addition to improving response time for users, this move has reduced computing costs by eliminating duplicate hardware and software maintenance expenses.

M204 is now accessed by typing **M204** on the PROFS command line. Accounts have been established for each of the GTRI laboratories. Details on these accounts can be obtained from the laboratory Research Administrative Network (RAN) coordinators. Persons using one of the laboratory accounts then type **LOGIN LABNAME**, as in **LOGIN RAIL** or **LOGIN SEL**, and the laboratory password. Passwords are available from the laboratory RAN coordinator. M204 commands can then be entered.

One of the applications available to laboratory users is GTRIPROP, the GTRI equipment inventory database. The **GTRIPROP** command will begin the session. This data is downloaded monthly from the GT Property Control database located on the OCS Cyber. When writing a proposal which requires equipment, project directors are required to show that they have searched inventories for available equipment. GTRIPROP can be used to verify if any of the proposed items are currently owned by GTRI. Lab Directors, GTRI administrators, and research support personnel can use GTRIPROP to look at a list of equipment located in a given room or belonging to a specific laboratory.

Laboratory RAN coordinators can generate ad hoc reports not found in the GTRIPROP system with ACCESS 204. Access 204 is a query and reporting facility which gives the user a menu-driven interface to database information. The Office of Contract Administration (OCA) database and the Research Communications Office (RCO) database will soon be available to RAN coordinators through ACCESS. The OCA database contains project information on deliverables, proposal status, and mod status. With the RCO database, project information can be queried by keyword or NTIS code, and project abstracts will be available on most projects.

Future applications planned for M204 will include Supply Services and GTRI Accounting. With the addition of these two systems, integrated project information can be made available to laboratory and project management. This will include project accounting data such as personal services, fringe benefits, materials and supplies, travel, capital equipment, and computer charges, as well as research support data such as MR status, RFP status, and listings of contract number/project number.

Reports printed using either ACCESS or GTRIPROP are mailed to the user daily. Classes on GTRIPROP are now offered through the CRSD Training Facility. If you are interested in signing up for this class or for any of the other classes offered at the Training Facility, call 4-6206 to register.

PROFESSIONAL ACTIVITIES

ECONOMIC DEVELOPMENT LAB

Alan Pashkevich recently spoke on EDL's Energy Analysis and Diagnostic Center program at the monthly luncheon of the Georgia Power Engineering Association.

The Analytical and Instrumentation Branch received international television coverage in April, when Cable News Network ran a four-minute science report on their indoor air quality research.

Marilyn Black recently conducted two professional development seminars on indoor air quality, one sponsored by the American Industrial Hygiene Association and the National Safety Council in Tucson (AZ), the other sponsored by the Tennessee Valley Authority in Tupelo (MS).

ELECTRONICS & COMPUTER SYSTEMS LAB

Roy Miller, Jim Coleman, and Gena Hillhouse coauthored a paper, "Electronic Combat Consideration for the Penetration Analysis Aids (Pen-Aids) System," which was presented at the Association of Old Crows Technical Symposium, San Antonio (TX), April 19-23.

ENERGY & MATERIALS SCIENCES LAB

Kathryn Logan presented a paper entitled "Development of an Experimental Model of Particle-Particle Interactions in Thermite Reactions," coauthored by **E. W. Price** and **Stuart McLemore**, at the 89th Annual Meeting of the American Ceramic Society in Pittsburgh (PA) April

30. **McLemore** presented a paper on "Effects of Stoichiometry on Reaction Kinetics in the System $TiO_2/B2O_3/Al$," and **Guillermo Villalobos** presented a paper on "Synthesis and Processing of Titanium Diboride Using the Thermite Reaction." Logan was coauthor of both papers.

At the Tri-Service Conference on Corrosion at the Air Force Academy, Colorado Springs, on May 6, **Jan Gooch** presented a paper entitled "Shielding Effectiveness of Metallic Joints versus Corrosion Prevention."

Dan O'Neil presented a paper entitled "Application of Research Results: U.S. Experiences in Technology Innovation, Diffusion and Commercialization" at the seminar on Application of the Research Results for Development of Arab Society sponsored by the Federation of Arab Scientific Research Councils in Baghdad, Iraq, April 11-14.

A paper coauthored by **Ray Kovac, Charles Gorton, Dan O'Neil, and Chris Newman** was presented at the American Chemical Society meeting in Denver on April 6. The paper was entitled "Experimental Process Research Study and Techno-Economic Analysis of the GIT Entrained Flow Pyrolysis Process."

Dan O'Neil chaired three sessions on "New Fiber Technology" at the Annual Conference of the Society for Advancement of Materials and Process Engineering in Anaheim (CA), April 6-9.

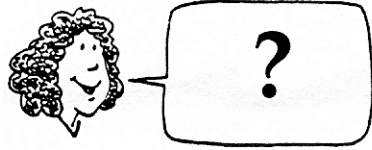
Contract (from page 1)

need to take action now to help with the backlog problem and reduce lost opportunities," Morris says. "However, due to the lead time required for government contracts, the payoffs are likely to be a year to 18 months down the road," he cautions.

The group's long-term goal is to install a mechanism or procedure that will assure a continual flow of these kinds of large, flexible contracts in the future. "We hope to have our teams out and the procedure identified and in place by the end of June," Morris says. They will be issuing status reports as their work progresses.

Lab representatives in the working group are Tony Chimera (STL), John Cotton (EML), Lee Edwards (SEL), Jerry Lett (EMSL), Joe McKee (RAIL), and Bruce Warren (ECSL). Advisers are Jerry Carey, Howard Dean, and Milton Bennett from OOD, and Ron Bell from OCA.

QUESTIONS, ANYONE?



by Charles McCullough, HRD

"I'll be leaving GTRI in a couple of weeks. Are there any termination procedures I have to look forward to in my last few working days?"

Are there any termination procedures, indeed! One departing veteran recently snapped that it was harder getting out of here than it was getting in. (She wouldn't have been so testy if she'd followed my advice and worn Reeboks on her last day instead of those tacky Slingolators that were a good half-size too small.) Feet notwithstanding, her complaint was very much overstated.

First and foremost, don't even think about leaving without submitting a formal letter of resignation. Classified employees should submit resignations not less than two weeks in advance. Research faculty giving less than a month's notice are viewed as ill-bred. Student employees are not required by GTRI to submit a letter of resignation, but are certainly encouraged to do so, and some labs and departments exercise their privilege to require their

student employees to announce their intention to resign by letter.

The minute your resignation flies out of the typewriter is not a moment too soon to start tidying up loose ends. If you've been a project director during the last year or two, make sure all your deliverables are accounted for (call OCA's Support Services, ext. 4-4673, if in doubt). If you're currently a PD, start working with your contracting officer to get sponsor approval to effect a change in director for your project(s). Next, start rounding up all those books you've been meaning to get back to the library. Got any cash advances you've not yet cleared? Get over to GTRC and pay up.

Everything else can be handled on your last working day, a day poorly understood by many. Here's the definitive statement intended to replace all past and present myths, legends and misconceptions: everybody, repeat EVERYBODY, employed by GTRI on main campus or at GTRF/CC must go through the GTRI termination clearance. "Everybody" includes classified employees, research faculty, and student employees. It in-

cludes temporary and permanent. It includes the young and the young at heart. It includes . . . well, surely you get the picture.

The GTRI termination clearance is an astonishingly simple and brief process whereby your supervisor or lab's/department's personnel coordinator fills out a form stating that you are (or aren't) free of obligations to Research Security, GTRC, OCA, the library, and your building's key control coordinator. If you hold a security clearance, you must take the form with you when you go to Research Security for debriefing. If you've already cleared up your cash advances, your deliverables, your library books and turned in your keys, everything else on the form is handled by phone. It takes all of five minutes.

Once your supervisor has signed the completed form and your final timesheet, make a copy of your timesheet and bring all three pieces of paper to the Human Resources Department. (No appointment necessary, but please don't come between noon and 1:00.) Here, we double-check your clearance form and timesheet. If you're a student employee, you're finished with the whole process at this point. If you're a classified employee, we invite you to participate in an exit interview with us. If you're a member of the research faculty, we make sure you've made arrangements to have an exit interview with Bill Howard in OOD. Next, for both classified employees and research

faculty, HRD partially completes the Georgia Tech clearance form and sends you to the Personnel Division on Hemphill Avenue.

There, in Personnel, you fill out the paperwork to get your TRS contributions refunded, get briefed on what's going to happen with your insurance coverage, turn in your ID card, take care of business with the Credit Union, and make arrangements for the disposition of your final paycheck. While this is happening, the remainder of the clearance form that was begun in HRD is finished, which means telephone calls to such beloved institutions as the parking office (you have paid up all your tickets, haven't you?), the bookstore (bounced any checks there lately?), employee loan fund and such. In addition, you'll be invited to participate in an exit interview with the Personnel Division, also. Depending on your benefits package and any questions or input you might have, this will take anywhere from 10 minutes to an hour or more. What could be simpler?

Quick though it may be, don't wait until 4:00 on your last working day to get started. You never know what snags you might encounter, such as that parking ticket you could just SWEAR you successfully appealed back in 1954. Besides, the sooner you get it over with, the sooner you can get back to the office, out of those Reeboks, and into your Slingolators.

PERSONNEL NEWS

ECONOMIC DEVELOPMENT LAB

Vivian Hunter has joined EHSD as a word processor specialist, and **Jeri Faircloth** is the new administrative secretary in the Brunswick Regional Office. The Engineering Technology Branch has added a chemical technician I, **Robert Wallace**.

Chuck Calmbacher, former head of the Hazardous and Industrial Waste Group, has resigned.

ELECTRONICS & COMPUTER SYSTEMS LAB

ECSL welcomes **Mary McKenna-Redish** to the Office of the Laboratory Director and **Dr. Donald D. Stevens**, SRE, who will work with **Dr. John Meadors**.

Good-bye to **Joe Seals** of the Biomedical Research Division.

OFFICE OF THE DIRECTOR

Gay Farnsworth, staff assistant, is the new associate editor of the *Connector* for OOD.

SERVICE DEPARTMENTS

Congratulations to the following on their new titles and promotions: Supply Services—**Billy Boner**, head of Supply and Materials; **Deann Reese**, administrative assistant; **Erma Johnson**, accounting assistant; **Jerry Brown** and **Greg Heagerty**, storekeepers. CRSD—**Harold Brown**, electronics technician II, and **Josh Nessmith**, systems analyst I. Accounting—**Abbie Hendricks**, accounting assistant.

Welcome to the following new employees: **Jacquelin Parker**, word processor operator, Accounting; **Jimmy Lehmkuhl**, electronics technician II, and **Collette Holmes**, administrative secretary, CRSD; **Margaret Wilson**, senior secretary, Human Resources; **Jeffrey Andrews**, machinist, Mechanical Services; **Darrell Jordan, Sr.**, clerk II, Research Security; and **Carol Croy**, clerk IV, Supply Services. **Jim Kloepfel** has joined Research Communications as a research associate I; he transferred from EML, where he was a research technician II.

Good-byes were said to the following: In PPC, **Dennis Brooks** retired March 31 and **Linda Elsasser** resigned. Also resigning were **Dave Rappe**, FMD, and **Andrea Lyons**, HRD. **Carol Hogan** has left Accounting for Tech's Communications and Development Department. **John Goldthwaite**, CRSD, is joining Tech's Office of Interdisciplinary Programs.

SYSTEMS ENGINEERING LAB

In the Countermeasures Development Division, **Jerry Heckman** has been appointed associate head of the Techniques Development Branch, and **Jack Landgren** has been named associate head of the Advanced Countermeasures Branch.

The Concepts Analysis Division welcomes **Linda Schuett**, RE I. A graduate of Valparaiso University, she formerly was employed by Westinghouse in Baltimore.

Joining the Defense Systems Division is **Jonathan Eppstein**, RS I. He has a BS in computer engineering and an MS in applied math, both from Western Michigan University.

Welcome to new GRAs **Beth Hanke** and **Alfred Acosta**.

Resignations include **Wendy Ellerbe**, **Sandy Wilson**, **Mark Allen**, **Francis Shiflett**, and **Dennis Hancock (Eglin)**. GRAs **Joey Goodroe** and **Mark Dale** also have left.

SYSTEMS & TECHNIQUES LAB

Congratulations to **Rhonda Okerberg**, who has been promoted to administrative assistant.

STL welcomes new employees **Linda**

J. Jordon, RE I; **Tony L. Wilkey**, RE II; **Barry S. Mitchell**, RE II; and **William A. Joye**, RE I, who transferred from ECSL.

New hourly-as-needed employees include **Patricia D. Jones**, engineering drafter I; **John C. Alford**, lab technician I; **Rickey J. Ivey**, electronics technician I; **Arthur L. Gloster**, electronics technician III; **Cynthia L. Cochran**, clerk typist I; and **Gregory D. Holland**, lab technician I.

New students and co-ops are **Alexander H. Bell**, **Stephen M. McReynolds**, **Neal W. Berry**, **Peter F. Heck**, **Audra M. Seremet**, **David M. Halprin**, **Waymon R. Reeves**, **Robert D. Brown, III**, and **Stephen L. Spruell**.

Frank Lee has terminated.

PERSONAL NOTES

EDL: **Richard Johnston** was married to **Brenda Toan** April 11.

Gayle Warren was inducted into Phi Eta Sigma Freshman Honorary Society in May.

ECSL: **Robert Baggerman** was married to **Barbara Tucker** May 2.

Carolyn Mahaffey's recipe for Irish stew made the top ten in a national cooking contest that drew some 1,000 entries.

EMSL: **Guillermo Villalobos** was married to **Diana Devonshire** May 23.

Karen and **Paul Hawley** welcomed a son, **Adam Martin**, May 4.

HRD: Congratulations to **David Pitts** and his new wife, **Brenda**, and best wishes to **Marsha Braswell**, who has married Motor Pool's **Ken Cloud**.

SEL: Congratulations to **Dennis Folds** and his new bride, **Kathy**.

Kim and **Tom Settle** are proud parents of **Courtney Elizabeth**, born April 13, and **Susan** and **Terry Tibbitts** welcomed **Blake Edwin** April 9.

Jeff Hallman recently received an Academic All-American Collegiate Award for academic excellence.

Deborah Thomas' 16-year-old son, **Derek Walker**, recently won first prize at the annual Morehouse College Research Week with his computerized robot.

Lloyd's Lillies won the Yellow Jacket Bowling League championship; the CRSD team, the **Deadwoods**, came in third.

STL: **Tony Masters** was married to **Jenny Trovillo** March 21.

1987 Promotions

Congratulations to the following 32 GTRI employees, who will be promoted on July 1 to:

Principal Research Scientist:

Marilyn S. Black EDL
Fred L. Eisele EML

Senior Research Associate:

Claudia H. Huff EDL
Harris T. Johnson, III EDL
Phillip D. Loveless EDL
William H. Spain EDL

Senior Research Engineer:

Michael L. Brown EDL
John K. Daher ECSL
Edward H. Hardison, III EDL

Senior Research Scientist:

Richard Bruce Rakes RAIL
Rosemarie Szostak EMSL

Senior Research Technologist:

Timothy M. Strike SEL

Research Associate II:

Holly J. Grell EDL

Research Engineer II:

Joseph L. Brooks SEL
Charles K. Cole SEL
Bruce Dwayne Crawford EML
Gerald N. Hill EML
Bruce E. Huit RAIL
Aaron P. King SEL
Daniel J. Mack SEL
Douglas W. Martin STL
Richard V. Morrison SEL
Paul Alan Pashkevich EDL
Charles C. Ross EDL
Juan C. Santamaria ECSL
John A. Scholz SEL
James Orn Smith EML
Michael S. Smith EDL
Elwood E. Toph STL
Tracy V. Wallace RAIL

Research Scientist II:

Dennis J. Folds SEL
Kevin L. Kamperman EDL

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