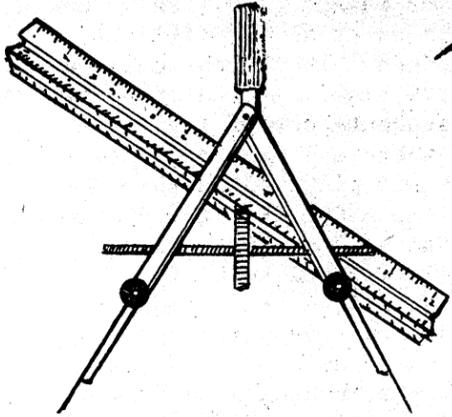


Southern Technical Institute

Marietta, Georgia



The Sting

Environmental Issue



PRE-REGISTRATION CAUSED PAIN AND SUFFERING FOR MANY STUDENTS--SEE P. 6

PHOTO BY M. WHITE

BSA--ON THE MOVE

As a student organization, the Black Student Association was formed in the Fall of 1975, after the black students on Southern Tech's campus saw a need for a closer unity among the students. The purpose of the organization was to bring an awareness to the Southern Tech family of the contributions of the Black to the American way of life; to assist in the guidance and orientation of new black students on campus; to provide a continual guidance for the members of association; to improve the relationships between black and other students; to provide a social outlet for its members; to take an active part in cultural, social, and athletic activities of the institute; and to provide a voice for black students at Southern Tech.

Over the years, the membership of the Black Student Association has continued to grow where presently the BSA represents close to 10% of the students enrolled at Southern Tech.

The president for the 1980-81 year, Stanley Hill, along with the current officers, Charlene Robinson, Sandra Wim-bish, and Teddy Colvard, are planning a productive year in which the BSA will play an active role in campus, community, and social affairs. "Our objective for this year is to make the BSA better known among the Southern Tech family.

With the activities planned, we hope to establish our organization on campus and in the community." The faculty advisor is Ms. Glover, Director of Financial Aid.

The activities that the organization has planned begin with the annual Thanksgiving Basket Drive. The purpose of the drive is to aid needy families in the community. Each year the Cobb County Department of Family and Children Services selects the families to receive the baskets. Starting Winter Quarter, BSA Tutoring Program will begin. The tutoring program will assist the members of the organization with problems in various courses. The week of February 9-13, 1981, has traditionally been set aside for Black History Week, and BSA has planned a host of speakers and activities to commemorate this week. In conjunction with Probate Court of Cobb County, BSA has begun a Big Brother Program to help establish a better working relationship with the youth of this community.

As the Southern Tech campus begins to grow as a new senior college, the Black Student Association is on the move in achieving recognition as a vital part of campus and community affairs.

Tim Martin

HORNETS SNEAK BY CLAFLIN 80 TO 79,
ON BROMELL'S FOUL SHOT.WED. NIGHT.

PRESIDENT SCHEDULES TWO MEETINGS WITH STUDENTS

Two open meetings for students have been scheduled by STI President Steve Cheshier.

On Monday, November 24, all new freshmen and transfer students (those new on campus as of Fall Quarter) are invited to meet with Dr. Cheshier and several other staff members at noon in the ballroom of the Student Center.

The purpose of the meeting is for students and administrators to talk informally about students opinions of the college and the services it provides. Dr. Cheshier is also interested in learning how most new students first learned of Southern Tech, impressions of the college and suggestions for improvement. He will also answer any questions.

On Wednesday, December 3, Dr. Cheshier would like to meet with all interested students for a question-and-answer session. The purpose of the meeting is similar in nature to the meeting with the new students. It is to serve as a "rap session", giving students an opportunity to ask questions, give suggestions and talk informally with Dr. Cheshier. The meeting is scheduled for noon in room 119 of the student center.

COHUTTA WILDERNESS FIRE

Over 400 Forest Service firefighters from Georgia, California, North Carolina South Carolina, and Florida successfully extinguished the 2,570 acre Cohutta Wilderness fire on Friday, November 14 at 10:30 p.m.

The fire, which began Thursday night, was the worst on the Chattahoochee National Forest in over 20 years.

Chief Investigator Eddie Walters asks that anyone who observed any suspicious activity in the vicinity of Rough Ridge Trail on Jacks River on Thursday afternoon contact him at (404) 536-0541.

THE 1980 LOG HAS ARRIVED

Yearbooks will be given out to all students and faculty members from 9:00 a.m. to 1:00 p.m. Wednesday, Thursday, and Friday in the LOG Office, located upper level of the Student Center.

Editors' Corner

LOOSE ENDS

The end of fall quarter is almost here and most students are settled into their regular routine. They got up early, eat coffee for breakfast, go to class, study, eat and sleep and look forward to the weekend. This week, we are looking forward to Thanksgiving holiday and my first meal this quarter to be cooked in an oven. The past week has been pretty lively for us campus dwellers. Friday, the Running Hornets (our basketball team, remember?) had their first game of the season and it was a blast! They beat a very good Allen University team pretty easily, I thought. Even though the party afterward was a good celebration for the ball team, I was very disappointed in the slack attendance at the game. C'mon people! Our basketball team is much better than we deserve if we can't support them any more than we showed Friday night! If I was on the team, I would be pissed off because we do have an exciting and entertaining team and very few people show up to enjoy it. That includes all the greek societies too! A banner on the wall just doesn't cut it.

Speaking of Greek Society, the Goat weekend the week before started out to be great, but soon petered out once Saturday came around. The talent show Thursday was a great time for everybody, even the MC was funny. Friday night had a good crowd for the movie, but come Saturday, all that could be seen were greek letters on T-shirts. Even though the Intrafraternity Council made it clear that Goat Day was for everyone, very few people other than the fraternit-

ies were there to participate or even heard the band. Because of the events still going on, the band, Motive, was forced to start late, and then was told to stop until the competitions were over. Something is wrong here. No matter how you look at it, Goat Weekend was only for the fraternities to enjoy, in that they are the only ones to participate. That being the case, the CAB should divorce itself from sponsorship of the event, entirely. The talent show should be maintained, but if the CAB is going to pay for a band, the event should be a dance or concert in the Student Center, where everyone could enjoy it. Comments, anyone?

What is keeping the Radio Station from going FM? They have been talking about it for a year now, but still are short of their goal. From what we can gather, they still need someone to be the only chief engineer, and they need someone to go out and buy a transmitting cable. WGHR had been asking for SGA money to cover these expenses; they received that money (\$8,482.00) this school year, but so far have not produced the quality radio station that was promised. Talk is cheap guys, so how about it? Let's get WGHR up to full operational capacity and in the meantime, the SGA might reconsider next year's budget request.

Speaking of budget requests; last year, the LOG was given \$11,048.00 to produce the yearbook that is now available. That is 9% of the SGA budget, and we think that this figure can be reduced and still put out an attractive yearbook. Although this year's LOG is an improvement over previous editions, there are several items of confusion within it.

One curious item is the absence of photos of the majority of students presently enrolled in school. I know that compiling this material is difficult, but maybe students' ID photos could be used in the LOG also, instead of leaving so many students out of the yearbook. Also, there are many organizations that are not pictured in the LOG, such as the AIA, ASCE, IEEE for instance. Moreso than the greek societies, the professional societies need to be in our yearbook as they serve as an important part of a students' education here on campus. The most public event on campus last year was the Iranian Flag Burning Festival held outside the Administration Building, but no mention of it was made in our yearbook. (I was thinking that it could be made into an annual event!) Since everyone pays every quarter for the LOG, the STING and for WGHR, from their activity fees; we think that every student should be concerned about these organizations and let the SGA know how you feel.

This week's main event for everybody, I am sure, was pre-registration. For myself, AET registration went very smooth, as the AET Department has their own terminal up and operating fine. Every Department will, or should, have their own computer terminals for pre-registration, but apparently none but AET and CET do. I can imagine that most students found pre-registering in the Administration Building a real pain in the butt, and many voiced their frustration in our student poll, the Parallax View. Also, everyone should read Sam Baker's letter to students on the Backtalk page, pertaining to this problem.

Our focus this issue is environment, and you'll soon realize that this concern we have for our environment didn't die with Earth Day. Everyday, mankind seems to be digging a deeper grave for itself by causing irrevocable damage to our world. We must reverse this trend now. If we are to survive as a

cont. p. 3

The Sting

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Jeff Godwin - Advertising

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Top Row, L to R: M. Payne, M. White, B. Bebe, S. Cantrell, K. Shaw, A. Bearden, Dr. Barnum; Bot. Row, L to R: T. Drayton, J. Godwin, J. Booker, E. Auerhan, R. Bostic.

The STING is published bi-weekly on Fridays. Our upcoming issues will be published on November 21 and December 5. It is imperative that any announcements, letters, or ads be in the STING box by the Tuesday before publication day.

EDITOR'S CORNER, CONT.

civilization. By coincidence, our issue deals with many of the problems that you might have read this week in Newsweek magazine or the Atlanta Journal. This illustrates how immediate these problems are, and how little has been done to correct them. We hope you will take the time to read all the fine articles in our paper and get angry.

E. R. Auerhan
Editor

PRE-REGISTRATION

Dear Editor,

All of us in the Registrars' Office are very appreciative of the outstanding cooperation exhibited by all students during pre-registration November 17 and 18. Quite frankly, my attitude after having spent five hours in a registration line would have been very negative. Much to our satisfaction, the mood of those individuals who stood in cold weather for hours on end was great. We sincerely appreciate everyone's willingness to wait.

We tried something different this time--no time cards. It didn't work. Our time card system uses the "hours earned toward graduation" as the basis for determining who gets to register first. This is a fair system because students who are further along in their academic program have less flexibility in choosing courses, therefore they need first choice. The "open registration system" simply makes it a "first come--first served" basis and does not take into account the needs of the student close to graduation. We will return to the time card system for pre-registration Spring Quarter 1981.

Many thanks for your patience.

Sam J. Baker
Director of Admissions
Registrar

CAMPUS PARKING

Dear Editor,

Parking at Southern Tech has been a problem for many years. With the exception of the "30-minute loading zones" on Campus Drive and the three "loading zones" behind Howell Dorm, parking is limited to the main parking lot across from the Administration Building and the new parking lot on the back side of the campus. With the addition of the new parking lot, parking is sufficient during the week; however, these parking places are not sufficient for the weekends.

Very few students stay at Howell Dorm during the weekend, but for those who do, parking is troublesome. Both of the parking lots are a considerable distance from the dorm. Weekend students leave the campus more often than during the week, especially on Friday and Saturday nights. Some of these students do not return until the early morning hours and must park their cars in one of the two main parking lots. These students are lucky just to make it to the parking lot after a long

Backtalk

Letters to the editor are encouraged and all will be read; however, if they are to be printed, they must have your signature.

night--they must then make the long walk to the dorm.

I feel that the "30-minute loading zones" and the parking lot behind Howell Dorm should be open for weekend parking. The "30-minute loading zones" can easily hold ten cars while the dorm parking lot can hold about seventeen more. During the week the dorm parking lot is used for the parking of the Resident Assistants, the Physical Plant Department, the Housing Director, and the three "30-minute loading zones." On the weekend very few of these parking spaces are used.

On the weekend the majority of the Resident Assistants go home and the Physical Plant Department is closed. These parking spaces could be used by weekend students.

Parking behind the dorm may cause some problems for the Resident Assistants parking on Sundays, but if a time limit (for example, 6:00 p.m. Friday until 12:00 a.m. Sunday) was set for parking behind the dorm, Resident Assistants would have no trouble finding a parking space after 12:00 a.m. on Sunday--very few return before then. As for the two Resident Assistants assigned to weekend duty, two spaces could be assigned to them during the weekend. This weekend parking may also cause the police to work a little harder but I am sure they could handle it.

These few changes in parking would cause little trouble and would make the weekend students very happy. I am sure a system like this would work. Let us try it!

Randy Vining
Howell Dorm

TRAFFIC PROBLEMS

Dear Editor,

Recently, some campus traffic problems have been called to my attention. Leaving campus. A left turn at the main entrance is very dangerous. Autos east bound on Clay Street are rounding a curve and are unable to see autos entering the highway. This situation has resulted in several fender-benders. I suggest that anyone needing to turn left leaving the campus, go to the lower entrance. The visibility is better and there is a middle lane present for acceleration. The chance of an accident is greatly reduced.

The Parking Committee is in the process of contacting the Department of Transportation so that a study can be made regarding a traffic signal at the main entrance. They estimate the cost to be \$18,000-20,000. That's a lot of money, but what is it compared to a human life. Hopefully, we will have the problem solved SOON!!!

My attention has also been called to traffic and pedestrian problems on campus. Namely, the crosswalk between the Lab Building (Building 3) and the Electrical Building (Building 4) at the top of the hill. Coming from the direction of the gym, drivers have difficulty in seeing pedestrians walking in the crosswalk. Several students and professors have almost been HIT!!! Please slow your car down at this and all other crosswalks on the campus. By Georgia State Law, the pedestrian ALWAYS has the right of way.

Your cooperation will be greatly appreciated. Drive safely!!!

Thank you,
John Cochran
SGA President

BEN SARGENT
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American Statesman



United Feature Syndicate

The Sting Focus: Environment

ACID RAIN AND THE GREENHOUSE EFFECT

In 1979, the President's Committee on Health and Environmental Effects of Increased Coal Utilization identified two major global environmental problems. One is acid precipitation and the other is the increased emissions of carbon dioxide and the resulting effect on world climate. Both of these problems are the result of global consumption of fossil fuels and the subsequent release of waste emissions into the atmosphere.

Acid rain results from sulfates and nitrates in the atmosphere that change to sulfuric and nitric acids and combine with raindrops or snowflakes. Although sulfates and nitrates can enter the atmosphere from natural sources, their dramatic increase in recent years is caused by the evergrowing combustion of fossil fuels in automobiles, furnaces and power plants. Some oils and coals are contaminated with significant amounts of sulfur, which forms sulfur dioxide when the fuel is burned. In addition, burning fossil fuels converts atmospheric nitrogen to nitrogen oxides. Further oxidation forms sulfates, which can combine with ice or water droplets in clouds, making the precipitation highly acidic.

Although this pollution problem has received widespread publicity only recently, deposits of acid in the atmosphere have been increasing since the Industrial Revolution in the 1800's. Most rain water is normally slightly acidic because carbonic acid, created from carbon dioxide in the atmosphere, lowers the pH of "pure" rain to about 5.6. But by 1955, precipitation averaging below pH 4.5 was falling in the New England states, Ohio, Pennsylvania, West Virginia, and New York. Since then the area affected by acid rain has expanded to include most of the U.S. east of the Mississippi. Precipitation between pH3 and pH4 is now routinely observed in New England.

Acid rain is disturbing the ecology of many lakes when the surrounding soils and rocks can't neutralize the acid. Some lakes in the affected areas have become 100 times more acidic than 40 years ago. Fish can no longer survive in more than 100 lakes in the Adirondack Mountains in New York and 40,000 lakes are threatened in Canada. The acid slows down the bacteria decomposition of natural organic materials such as leaves. Drinking water in lead pipes could be contaminated by corrosion from the acid. Mandatory conversion of power plants from oil-or natural gas-burning to coal-burning operations in the 1980's is expected to increase acid rainfall by 10 to 15% in the United States.

EPA regulations concerning sulfur emissions apply on to new plants, and old plants are not covered by new regulations, though they may operate for 20 to 30 more years. Some regulations are routinely side stepped such as the Clean Air Act stating that sulfur dioxide controls are required only when a

plant's emissions exceed air pollution standards in its immediate vicinity. Thus utilities are encouraged to use tall smokestacks. The sulfur and nitrogen oxides are sent high into the air where wind currents carry them long distances, turning a local problem into a national and international problem.

The study, mentioned above, predicts that the continued use of fossil fuels at the current rate will have produced an atmosphere by 2005, where concentrations of CO₂ are twice as high as in the 1700's. Atmospheric carbon dioxide absorbs infrared radiation and reflects it back to warm the earth in a greenhouse effect. The higher concentration of CO₂ will increase average world temperatures by 1° to 2° and is expected to have the greatest affects at the poles. According to such forecasts, the polar caps would melt, and agriculturally productive areas would shift closer to the poles.

Unfortunately, technological advances will probably not reduce CO₂ emissions because "clean" burning also increases CO₂ production. The only practical way to control CO₂ emissions and the effects of acid rain, is to reduce consumption of fossil fuels and use alternate energy sources such as solar and wind energy.

Eddie Auerhan
Editor

HYDROPONICS: OR, YES, WE HAVE SOME BANANAS

Farmers have always had the problem of crops depleting the soil of the nutrients contained therein. The problem is resolved when plants are grown free of contact with soil.

Before the reader dismisses the above statement, let it be known that plants are indeed grown in such a manner. The science of soilless culture is called hydroponics, and may well be the answer to the global food shortage.

All plants need certain elements to grow. These elements include oxygen, carbon, hydrogen, nitrogen, phosphorous, sulfur, potassium, calcium and magnesium, to mention a few. The first three elements mentioned are taken from the atmosphere in a gaseous form or taken from the water through the root structure. The other elements are normally absorbed as mineral salts from the soil.

Hydroponic growth requires that these elements appear as dissolved salts in a nutrient solution. This solution, which would vary from plant type to plant type as to the proportion of each element in solution, would be circulated in a tank into which the root are dipped. The solution would be monitored periodically and would be replaced when found to be lacking in nutrients. The stalks and bodies of the plants themselves could be supported by a matrix of peat or excelsior (which is wood chips or cellulose fiber) and could itself be non-nutritive.

The system mentioned can be modified. See "HYDROPONICS", p. 5

THE GREENHOUSE EFFECT

Man can defy nature in many ways. One might say that the evolution of our species is nothing more than learning to control our environment rather than allowing it to control us. But we can also harm our habitat. We can see the immediate effects of nuclear or germ warfare. But many scientists believe that a more innocent technology--the burning of fossil fuels--can also adversely affect our world.

Plants have always consumed carbon dioxide, storing it and releasing oxygen as a by-product. When we burn this CO₂, we actually reverse the photosynthesis process--liberating vast amounts of CO₂.

This CO₂ accumulates in the lower atmosphere, traps heat from the sun and causes a general warming trend of the earth's surface. Scientists call this principle the "greenhouse effect."

This process may be harmless in the short run, but as the CO₂ concentration quintuples in the next 100 years, it could become a major concern. This resulting warming trend could set off a cycle of CO₂ liberation. The Earth's oceans contain 60 times as much CO₂ as the atmosphere does. The warming of the earth's crust would alter water levels by slowly melting the polar ice caps, which would cause the release of some of the CO from the oceans. A 1% increase in the surface temperature would increase the carbon dioxide level by 4% directly from the oceans. This extra CO₂ would further raise the surface temperature and release more and more CO₂ from the oceans and so on. The "greenhouse" cycle would be in effect.

Although the process would aid world agriculture by extending growing seasons, the dangers involved would dwarf the benefits. Even slow melting of the ice caps would cause massive flooding as the ocean levels would rise accordingly. Reproduction cycles of many species--including humans--would be adversely affected. For example, studies show that increases in temperature cause chickens and other birds to lay soft shell and infertile eggs. Many scientists believe that the dinosaur's reign ended because the might beast's eggs would not hatch as a general warming trend took place. Many animals that now live in a cool environment could not adapt to a sudden change in temperature (sudden relative to normal warming trends). Plant growth would increase due to more CO₂, upsetting the balance of earth's ecosystem.

Once in effect, this cycle would affect us for thousands of years. Predictions of the results vary between scientists--some say that the process will be offset by man's continued deforestation of the environment. While others predict total extermination of life on planet earth. But nevertheless, consumption of fossil fuels should be slowed to insure that the greenhouse effect never becomes a major fact in our environment.

A. Bearden

Sting Focus

RAIN FORESTS ENDANGERED

"HYDROPONICS", from p. 4
for use in arid countries. Here the solution is pumped and irrigated into a contained shallow bed of sandy soil into which the plants are received. The solution filters through the soil, nourishes the root structures, and drains out of the contained bed, ready to be used again after receiving nutrient supplements.

Hydroponic gardens can match the crop yields of traditional farming methods for certain plants. For large-scale operations, the cost per unit area of growth is roughly equal. It is not unlikely, then, to believe that much of this planet's food will be hydroponically grown in the near future.

Steven Cantrell

TOXIC CHEMICALS AND CANCER

Eighty to ninety percent of all cancer cases are linked to the environment; 20%-40% of these are blamed on occupation. Toxic chemicals are cited as the cause of a lot of cancer, but solid research on the matter is in its infancy.

Industry scientists claim that most cancer is a product of our lifestyle, not the result of exposure to industrial chemicals. They point to the fact that since the chemical explosion began in the mid 1940's, cancer rates have not skyrocketed.

But the cancer rate has been steadily increasing. Common types have increased 10% among white Americans between 1969 and 1976. The President's Council on Environmental Quality reported that exposure to toxic chemicals was a "notable factor" in the increase.

Many factors seem to encourage malignancy and it is hard to apply any set of statistics to a certain cause. It is interesting to note that while tobacco carries much of the blame for lung cancer, cases of this type have also increased significantly among non-smokers since 1935.

Even though the chemical industry growth took off in the 1940's, only since 1960 has the concentration of many hazardous materials reached a high level. This seems to parallel the briskly increasing rates of cancer since the late 1960's.

But once again, data is sparse. There are simply too many substances to be studied within so short a time. Only those chemicals highly suspected to be carcinogenic are tested, and even these tests require years of lead time from the drawing board to the data sheets.

The increased use of chemicals such as benzene, vinyl chloride, chloroform, and tetrachloride seem to indicate a casual link to the increase in cancer. Davis and McGee of the Environmental Law Institute have compiled data on these and other suspected carcinogens and feel that they could have a large effect on future cancer rates.

Study must be continued to find out exactly what effect all of the approximate 7000 chemicals (of which 1500 are suspected carcinogens) have on humans. New testing methods will have to be developed to increase the accuracy of data from the lab before any concrete conclusions can be drawn.

A. Bearden

The tropical rain forests of South America and Africa were once considered to be vast, impenetrable jungles, impenetrable to anything man could do. When early attempts were made to explore the jungle or carve roads through them, the vegetation would recover the ground at an amazing rate. Now, however, as agricultural methods become more efficient and as the demand for lumber becomes greater and greater, even the mighty rain forests are threatened by human intervention.

By far the most important factor in the encroachment into rain forests are forest farmers. These are people who, either individually or in families and colonies, clear patches of forest in order to raise crops. It is estimated that in the mid 1970's, then farmers occupied about 2,000,000 km², or about one fifth of the total area of rain forests. With typical population increases in areas such as Central America, Columbia, Thailand, and Indonesia, forest farming could account for additional losses of over 1% per year of rain forest area.

Cattle raising is also a main problem especially in South America. Between 1950 and 1975, the total area of man-cleared pastureland more than doubled, almost entirely at the expense of rain forest land. In Brazil, a common practice is to clear a patch of forest for grass land, use it to feed cattle until it no longer can produce even grass, then clear another patch and start over. The soil on the first patch is sometimes exhausted and requires many years of stagnation to recover enough to support vegetation again. For the farmer it is pure economics, for as long as beef continues to bring a high price, this practice will continue.

Lumber and wood products are also a primary reason for the exploitation of rain forests. Countries in the developed world have increasingly turned toward the tropical forests as an answer for their demands. During the last 30 years, this demand has increased more than ever before, especially for hardwoods that make up over 90% of the lumber in a rain forest. Hardwood forests in temperate zones are either depleted or coming under protection to the point that the exploitation pressure is directed more and more toward the tropical forests.

The largest single consumer of tropical wood is Japan, which accounts for over half of the developed nation's imports. Between 1950 and 1973, Japan's consumption of tropical hardwoods increased 19 times. Of all of Japan's imports, wood now ranks a strong second to oil.

The United States is the second largest consumer of imported wood due to rapidly rising costs of high-quality hardwoods from our own country and an increasing interest in rain forest wood for esthetic value. It is interesting to note that a large part of the United States' wood imports are in the form of plywood and paneling which can often be purchased cheaper from Southeast Asia than from American manufacturers.

The commercial logger in a tropical

forest is very selective. Due to a demand for only about 50 of the thousands of species available in the forest, he practices what is known as creaming. In this process he takes only the select few but cuts and leaves a great many others in the attempts at the chosen few. In a rain forest, trees are close together and connected by vines. When a tall tree is felled, it takes with it many less trees which are left on the group. Furthermore, tropical trees are more susceptible to diseases so a mere patch of bark torn off can leave a tree vulnerable to attack. Also, logging roads and haulage tracks can account for from 10-30 percent of the forest area being harvested.

With greater care, forests could be harvested and unnecessary damage reduced by half. But this less destructive exploitation would raise timber prices for the end product consumer. The impact of logging varies widely from only a slight modification of the forest to gross degradation. If logging is highly selective as in the case with mahogany, a forest may never return to its original composition. These facts necessitate more efficient use of wood products harvested, more intelligent selection of land to be harvested and extremely active replanting programs or the once mighty tropical rain forest may become a faded memory.

Mike Payne

THE PROBLEM OF WORLD HUNGER

The next time you inadvertently blurt out, "let's go to the cafeteria; I am starving" or hear a parent tell her child, "Eat all of your vegetables, because there are starving children in Asia," think about it because in one of those statements there is reality beyond recognition.

Hunger and starvation are sometimes caused by natural disasters or political crisis, but the true hunger problem is chronic undernutrition--men, women, and children just not getting enough to eat. "As many as 800 million of the earth's poorest people do not get enough to eat each day" according to the Presidential Commission on World Hunger.

Hunger is defined as a result when people consume fewer calories and fewer proteins than their bodies need in order to live active, healthy lives. It takes away from the physical and mental capabilities and makes people less energetic, less productive, and less able to learn and increases susceptibility to diseases.

Out of the total amount of people afflicted by world hunger, more than 50% are children, women more often than men, and rural areas more often than urban ones. Most of these people live in Indian subcontinents, Southeast Asia, Sub-Saharan Africa, the Middle East and parts of Latin America.

The major cause of world hunger is poverty. Insecurity of food supplies contributes to poverty. To overcome these two problems that affect hunger, there must be a concentrated attack on both issues simultaneously on a continuing basis by helping developing nations to achieve rapid economic growth.

See "HUNGER", p. 8

The Parallax View

STING POLL

compiled by Terry W. Drayton

QUESTION: Do you think that the pre-registration process is handled properly and what improvements would you suggest?

1) Exhausting, boring, they should do something about it. I think the time card idea was fine!

H. Razavi

2) The existing system needs a terminal in each department and students should not deal with schedule organization.

S. Balmes

3) Personal advisors get the card readers fixed!

J. Staton

4) I have been to larger schools where the registration process was handled more efficiently without computers.

Michaëlle Purdy

5) Experimentation with registration processes should be kept in the lab until the results prove that the new breed is effective. "Keep it simple"--English 231.

Jay Robertson

6) Everything went all right except for running the schedule through the reader. Get it fixed and hand out time cards, then registration will be better.

Chris Bailey

7) NO!!! Preregistration should be done by the different departments and the departments put the forms into the computer all at one time. Then the students should get their schedules in their PO Box. If these schedules are not what they wanted they can go through drop/add to change them.

J. Michael Jones

14) I believe that preregistration was handled well, except that time cards should have been distributed so that students that have accumulated a fair amount of hours can register before freshmen students.

W. B. Vaughn

15) The lines were not only unbelievable the weather actually made them unbearable. Each department should have its own terminal, not just the AET's, and time cards should be mailed out.

R. Even

16) Believe it or not, they are trying--the Goat Shed. No, it's not what we would all like to see, but as time and funding allows, they are progressing and who knows, before long registration at STI may be as coordinated as it is at Georgia Tech!!!

S. M. Thornton

17) How about preregistration in each department? It would sure beat standing in the cold.

B. Nutt

18) No!!! What happened to the time cards and card readers.

David McClaskey

19) First of all, I would like to thank those who spent those long hours working preregistration, second of all I think that improvements could be made in any system thought of. It will take time to find the right system for STI.

Brent Grimes

8) NO!!! Each department should handle registration for that department. More readers and or terminals should be used.

J. D. Williamson

9) I think it's just a little confusing but other than that is handled pretty good.

Kent Tuttle

10) NO!!! A person has to stand in line for hours. Every department should have a computer like the AET Department, or it would be easier for registration to take place, like the department in alphabetical order. Every department should also have a time limit to register, also. That would make registration a lot easier.

P. Gray

11) I missed all my classes standing in a long cold line. Someone should be held responsible for this unfortunate incident. This system does not work. Take the bugs out and make the system work before next quarter please.

B. Evans

12) Are you kidding? It was a mess and there is no justification. I think that they should start issuing time cards and put a little more time and effort into the planning--that's what they are paid to do.

L. Alexander

13) What a joke!!! The most frustrating preregistration in the last four years. A total lack of respect for the student, the bill payers. If preregistration cannot be held in the departments, then go back to the time card system.

D. Thriff

20) No, the old system of class cards should be used with one change. Each department should handle their own cards. This would cut down on the long lines.

Stan Firebaugh

21) No, I do not think the preregistration process is being handled properly. I would suggest as an improvement to the process that instead of one long waiting line, there should be several shorter ones. That is, preregistration could probably be carried on just as effectively by returning the method used in the past--in the Ballroom. In this manner, course closings are posted and revised continuously. Too, the process was contained all in one general area.

Richard Gurley

22) Compared to the process of registration at the college I attended last year, preregistration is more organized and efficient. I still wonder why it took so long with computers being used. Waiting in line outside in the cold was gruesome!!!

June Rich

23) No. There are many methods which are effectively employed by schools much larger than Southern Tech. Any one of them could be employed without much difficulty here. One very simple one which comes to mind is to register by number of hours completed. Time cards are not necessary, but just a posting of times to register and one person with a print out of students number of hours completed checking at the beginning of the line. Any methods would be more effective than the NON-METHOD currently employed.

Chris Rogge

24) If possible, each department should have their own terminal. Also there should be some way for the students to know when a class is closed before he gets to the terminal. At my previous school, there was a large board showing which classes were closed. As soon as a class closed, it was listed and a student didn't have to stand in line just to find out that a certain class was closed.

Alfred Rey

25) I would like to commend the members of the registration team--Jim Hamrick, Bennie Houck, Sharon Chesser, and other involved parties--for trying so hard to make registration easier; but, it always seems that something goes wrong to screw it up. I understand that equipment failures seem to be the biggest problem. So, maybe by the time my grand children come to Southern Tech, they won't have to stand in line for 6 hours. But, I do appreciate your good intentions.

Steve Causey

26) The entire procedure should be move to the gym. The huge listing of classes that become closed are posted as soon as they are closed. This would eliminate much frustration.

Steven Cantrell

Sports

Intramural Results Football

November 3 - November 13

Who's 8	No Names 6
TKE 22	BSA 8
ROTC 14	Wizards 20
Lambda Chi 1	BSU 0 (forfeit)
TKB 20	Geechees 20 (OT 1 pt.)
Who's 8	Sigma Nu 14
BSU 0	TKE 1
Sigma Pi 23	ROTC 22
TKB 32	Muffdivers 16
Wizards 26	Geechees 22
Muffdivers 27	Who's 12
BSA 14	Muffdivers 42
TKB 42	Lambda Chi 20
Sigma Pi 14	BSA 28
Sigma Nu 1	ROTC 0
No Names 0	TKB 1
TKE 6	Geechees 20

PLAYOFFS--Thursday 20, Monday 24, Tuesday 25, Wednesday 26. First and Second place teams for each conference Fraternity, individual, organizations and 2 wildcard teams which have best overall record will set-up a 8 team single elimination tournament.

GEORGIA WOMEN'S BASKETBALL

The South is hot--possibly the hottest section of the country when it comes to producing winning women's basketball teams. For the past four out of five years, it has been a Southern team to warm up enough at tournament time to walk off with the coveted AIAW National Championship. Women's basketball in the South is setting records--and breaking records. One such record may be recorded in your presence and it may be closer than you realize. In short, women's basketball is attracting attention, causing quite a stir and drawing a crowd number of enthusiasts. And, as usual, the University of Georgia is preparing for the challenge--the challenge of competing against America's elite in women's basketball--the challenge of representing the great State of Georgia.

You can be a part of the action, The Coca-Cola Company brings the exciting University of Georgia Lady Bulldogs to their home away from home--the Cobb Civic Center in Marietta, GA, on November 22 (gates open at 5:30 p.m.) and December 17, 1980 (gates open at 4:30 p.m.). We are calling these skirmishes The Coca-Cola Shootouts. Tickets \$3.00 per person at the gate.

HORNETS DEFEAT ALLEN UNIVERSITY

The Runnin' Hornets defeated Allen University in a tough season opener at home Friday night, 111-96.

The visiting South Carolinians from the Eastern Athletic Conference went on to defeat Birmingham Southern at Birmingham, making Allen's record so far this year 3-1, after Saturday night. Allen has also defeated Edward Waters, the Florida team that gave the Hornets a close call last year in District play-offs, and Florida Memorial.

"Allen is a well-disciplined team, and well coached," commented Hornet Head Coach George Perides. "I'm proud that we won the first game, and I am especially proud that we did so well against such a strong team in our season opener. . .we said three years ago that we would build a strong program, eventually scheduling the tougher team. This year it's time to play some of the bigger teams--we're still small, but we've got the talent. If our team keeps its discipline and plays smart, we can give anybody we play this year a good game," he said.

Perides said that the first game was a good chance to get a preliminary look at the strengths and weaknesses of this year's ball club. The area he feels needs the most work is defense; the strength he saw was the team's skill with a 4-corner offense.

Perides also hopes to try new combinations to work on rebounding. Players he cited as having an excellent game were Mike Muller, who made 8 points in 8 minutes playing time; Billy Bromell, who Perides said had one of the best offensive games since he's been here, scoring 26 points; and Ricky Hudson, who scored 23 points. He also praised Johnny James and Clyde Franklin, who worked together for several tip-ins that helped the Hornets regain their lead later in the game.

"The real key was the fact that we played 11 players, and nobody had less than 8 minutes playing time," said Perides. "We're finally getting that depth that we've been looking for," he added. He said he hopes to play the three who didn't see action Friday in Wednesday's game.

"Our schedule is tough early," commented the Coach. "I hope we can survive it. I feel we'll be playing fast teams with talented players--it will be exciting for the fans," he said.

Patti Futrell

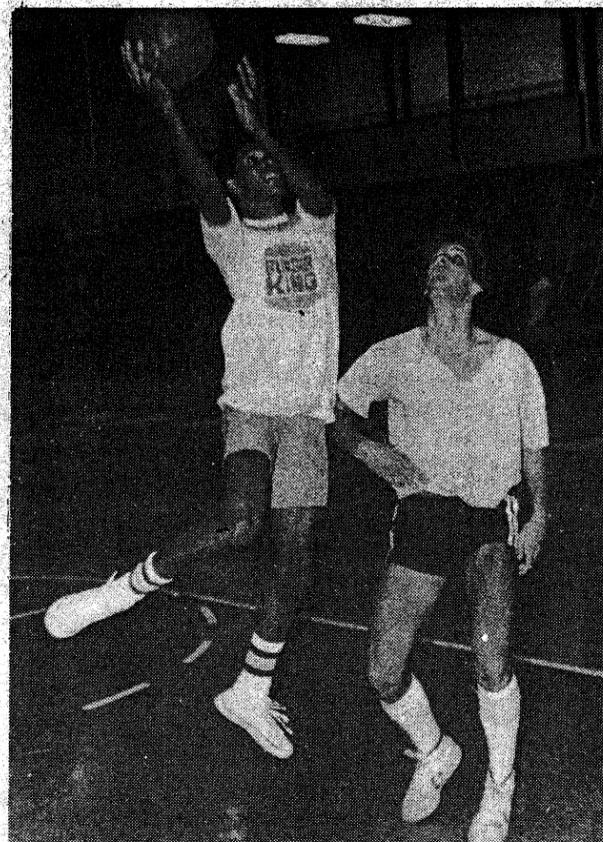


PHOTO BY M. WHITE

Ricky White and Carl Cochran go at it during the One On One competition

ONE-ON-ONE COMPETITION

In the one-on-one intramural competition, Sandra Wimbish defeated Kim Davis for the women's team. The men's division has not finished yet, but Bob Banard is the only undefeated person left in the double elimination tournament. Those still left in the losers bracket are Dept Kelley, Clarence Bailey, KC Campbell, Willie Dick, Charlie Johnson, and Corlis Norman.

INTRAMURAL BASKETBALL

Southern Tech's Intramural Basketball Meeting will be held on December 2 at 12:00 noon in Conference Room B. One representative from each old and new team. Individuals looking for a team should come by and sign up. The more the merrier!!!

STI REPRESENTED IN NATIONAL TOURNAMENT

TKB (Tap a keg of brew) will be representing STI in New Orleans at the 2nd annual Flag Football Sugar Bowl Classic. There will be 32 intramural teams from all over the nation. The tournament will take place on December 28-31, at the University of New Orleans.

CROSS-COUNTRY

Students interested in Cross-Country for Fall 81 should contact Coach Perides in the Gym.

GOLF

Students interested in golf for Spring Quarter 81, should contact Mr. Jon Van Hoy, Office 503 in the Civil Building, or contact Coach Perides in the Gym.

REMAINING GAMES--FALL QUARTER

DATE	OPPONENT	SITE
11-22-80	Friendship College	Home
11-25-80	Columbus College	Home
11-28-80	West Georgia Tip-off Tournament	Away
11-29-80	West Georgia Tip-off Tournament	Away
12-1-80	Edward Waters College	Home
12-6-80	Paine College	Home
12-10-80	Paine College	Away
1-3-81	Marietta (Ohio) College	Home

Sting Focus

"HUNGER", from p. 5

Here are some facts about world hunger and poverty:

1. 16% of world's children are malnourished.
2. Over 600 million people live on incomes of less than \$50 per year.
3. Even under conditions of rapid growth, 470 million people still will be living in poverty in the year 2000.
4. More than 75% of the world's inadequately nourished people live on the Indian sub-continent, in Southeast Asia, and in sub-Saharan Africa.

The short term goal of alleviating world hunger is eliminating poverty. To accomplish this, infants and children are to be properly nourished and diseases associated with hunger are to be cured and contained.

In the long term, hunger will be eliminated only when the poor countries have the opportunity to develop and when all countries work together to ensure that global food supplies are large enough to meet global needs. Hunger can be eliminated only by eliminating the cause--poverty. In essence poor countries must increase their agricultural productivity which will be the task of these countries themselves.

If one asked himself why are people hungry. The answer is that people are hungry because they are poor and cannot earn the money to buy enough food or they lack the access to land to grow their food. And why not? There just are not enough people in positions who care or can help.

Hunger is not what you feel when you miss lunch. Nearly 25% of the human race is suffering from starvation feel no hunger pain at all because often they have physically and mentally passed the stage. So the next time you even think you are starving, think twice, you are not because you are still capable of thinking about it.

Terry Drayton

ENVIRONMENTAL IMPACT OF SYNTHETIC FUEL DEVELOPMENT

Since world petroleum supplies are dwindling and new discoveries have barely kept up with production, the United States and Canada are turning to another source of liquid fuels for their energy. Coal can be converted into liquid fuel, but it is too expensive. For the immediate future, tar sands appear to be the most promising alternate liquid fuel source. Tar sands in Alberta, Canada contain the equivalent of about 1 trillion

barrels of petroleum, but what is the environmental impact of Canada's huge project and what would be the impact of proposed American tar sands projects in the Southwest?

Tar sand is classed as a semisolid hydrocarbon deposit: more complex than liquid hydrocarbons such as petroleum. Semisolid hydrocarbon deposits are mixed with rock, silt, or sand. The hydrocarbons of tar sands are contained in bitumen, a semisolid made of about 83% carbon. The remainder consists of hydrogen and various impurities, including nitrogen and sulfur. Bitumen is also found in oil shale and soft coal. Tar sand bitumen developed through heat and pressure on decaying matter, much like petroleum. But, at some point it lost its less viscous hydrocarbons molecules and became thick and heavy. As a result, tar sands deposits are too thick to pump; but those that lie near the surface can be strip-mined, and those that lie deeper are usually steam-heated and pumped.

Nature made the Athabasca tar sands, in Alberta, Canada, easy to process. The bitumen formed several hundred kilometers away and then migrated to Athabasca and seeped into the wet sand there. There are two enormous production plants now strip-mining the Athabasca tar sands. The Great Canadian Oil Sands (GCOS) facility, about 19 miles north of Fort McMurray, was completed in 1967 and produces 45,000 barrels per day of synthetic crude oil, which will increase to 58,000 barrels per day by 1982. A Syncrude, Ltd., plant nearby, opened in 1978 and produces 100,000 barrels per day. Both of these facilities are enormous, with the Syncrude operation extending 4 km. long, 5 km. wide and 60 meters deep. Considering the large size of the plants, the environmental impact has been slight, say Syncrude officials. The tar sands contain 4-6% sulphur, and processing removes most of it. Unfortunately, much of the sulphur goes into the air, and an Edmonton-based environmental group called Save Tomorrow Oppose Pollution (STOP), contends that dangerous quantities of sulphur dioxide might build up in winter because of frequent temperature inversions where warm air would trap pollutants near the ground. Alberta's government has set up a limit of 287 metric tons of sulfur dioxide emissions per day for Syncrude, an amount they say is virtually insignificant.

STOP also contends that Syncrude's residue pond contains substantial quanti-

ties of organic chemicals and metals that could pollute the Athabasca River, three miles to the east. Another problem with the tailings pond is the thin coat of bitumen on the pond surface that sticks to migratory birds that land there. Syncrude attempts to remove the bitumen from the surface using a vacuum hose on a boat.

In the U.S., we have no tar sand deposits as big as Alberta's, but the deposits in California, Texas, and New Mexico equal about 30 billion barrels of petroleum. One distinct difference in U.S. tar sands and in Athabasca's is that the separation process is much more difficult in the U.S. because the thin film of water between the bitumen and sand at Athabasca is not present in the Southwest sands. Most of the tar sands in the United States lie too deep to be strip-mined, so petroleum companies are using a steam injection methods to think the bitumen so it can be pumped out. Private companies plan to invest \$500 million in the 1980's on the tar sands projects; already, there are six pilot plants operating in the Southwest. Eventually, to produce 100,000 barrels per day, a project would have 2,500 wells operating at any given time. Energy for producing steam to be pumped into wells will be provided by burning 5 million metric tons of coal a year, with the emissions polluting the air. Every barrel of synthetic crude produced would require about 5 barrels of fresh water to provide steam and for the separation process. The need for this amount of water in the parched Southwest deserts, would tax local water systems tremendously and have many residents thinking twice about allowing a plant near them. A plant this size would emit 60 metric tons of sulfur dioxide per day into the atmosphere. A level which is below the acceptable percentage.

Whether we can balance the need for this energy resource with the need for strict environmental regulations, remain to be seen. It is necessary for us to have both, so we hope that environmentalists, oil companies, and legislators, can work together with foresight and manage a vital resource to benefit our nation for a long time.

E. R. Auerhan
Editor

MORE FOCUS ARTICLES ON p. 10



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What's happening:

PEACE CORPS BEGINS 20th ANNIVERSARY YEAR WITH REDEDICATION AT SITE WHERE IT ALL BEGAN

Secretary of State Edmund S. Muskie, speaking at Peace Corps 20th anniversary rededication ceremonies here, called for rejecting the philosophy of defeatism and despair and instead said: ". . . for our sake as well as for others, we must continue the battle... against world poverty and hunger and hopelessness."

Muskie, joined by the first director of the Peace Corps, Sargent Shriver, and the current director, Richard F. Celeste, spoke from the steps of the Student Union at the University of Michigan. It was the spot where 20 years earlier, then presidential candidates John F. Kennedy gave birth to the idea of the Peace Corps.

Kennedy had arrived at those steps at 2:00 in the morning on October 14, 1960. Ten thousand students were waiting up for him. They heard Kennedy challenge their "willingness to contribute a part of your life to this country." He had said "I come here tonight asking for your support for this country over the next decade." Two decades later, Kennedy's idea for service continues through the Peace Corps.

Twenty years later, on October 14, 1980, 3,000 people braved a cold, damp Michigan day, gathering on the steps of the Student Union to hear Muskie, Shriver and Celeste speak of the Peace Corps, its past, present and its future, in a world of rapid and drastic changes.

The ceremony marked the beginning of the year-long series of events celebrating the 20th anniversary of the Peace Corps.

Sam Brown, director of ACTION, the federal agency for volunteer service programs including the Peace Corps, set the theme of the day by saying, "cooperation not competition, allows us to live in the world."

Also participating in the rededication ceremony were Reps. Carl D. Pursell (R.-Mich) and John J. Cavanaugh (D.-Neb); former Michigan Governor G. Mennen Williams; University of Michigan President Harold T. Shapiro; and Yolanda King, a member of the Peace Corps Advisory Council, and daughter of the late Dr. Martin Luther King, Jr.

Among the 124 former Peace Corps volunteers at the ceremony were Alan Guskin, Chancellor of the University of Wisconsin, who, hearing Kennedy's words 20 years ago, accepted the challenge and became one of the first Peace Corps volunteers; and Dale Yamauchi, recently returned from Brazil where she was the 80-thousandth volunteer to have served in the Peace Corps.

Raising his voice to be heard over a small but noisy group of anti-draft demonstrators, Muskie reminded the crowd that some 600-million people in the world today live in the most desperate poverty. He said that in the changing world of the 80's, there is a new reality: "the growing together of our future with the futures of peoples in the developing world. . . Those of you who have served with the Peace Corps around the world have a first-hand appreciation of the histories that separate the world's peoples and the destinies that unite us."

Muskie drew applause from the audience when he challenged the 20 placard-carrying protesters: "You think life is hard for you? Why don't you join the Peace Corps programs in Malaysia, Monserrat, Upper Volta and Malawi, Muskie said:

"These few examples reflect a larger fact: Peace Corps today is making a difference in the only way that matters--on the daily lives of individuals whose daily lives are harshest."

Reflecting on the service of 80-thousand men and women who volunteered through the Peace Corps since 1961, Muskie said: "The Peace Corps struck a chord of compassion and decency deep within the American character, a core of human values that has been--and still is--among our most powerful national assets."

Later in the day, Celeste spoke of vast, global changes during the last 20 years and of the need for institutions to keep up with those changes. "Just as change comes personally to Peace Corps volunteers, just as change must come to the Peace Corps itself as it reshapes itself for its second 20 years," he said, "so our Peace Corps experience must lead us to speak out more broadly for change in the habits and institutions of our nation."

Celeste said that to share in building a more just, a more humane, and thus a more peaceful world, ". . . a Peace Corps which focusses more effectively on basic human needs in the Third World, which builds bridges across national boundaries, can be one key vehicle through which Americans respond to the global challenges of the next two decades."

The need for change was also noted by Tarzie Vittachi of Sri Lanka, currently, deputy director of UNICEF and an internationally-known journalist, Vittachi said, ". . . we have reached a critical stage in the history of our race. The age we are passing into calls for a fundamental change in social and political institutions, in economic measurements and objectives, in the perception of the magnitude and nature of human needs . . ."

The Peace Corps is an autonomous part of ACTION, the federal agency for volunteer service programs which include: VISTA (Volunteers in Service to America), Foster Grandparent Program, Senior Companion Program, RSVP (Retired Senior Volunteer Program), and the University Year of ACTION.

Persons interested in information about service in the Peace Corps and other ACTION Programs may call 800-424-8580, ext. 93, toll free.

WORLD PREMIER BY LOCAL CHOREOGRAPHER TO BE UNVEILED BY ATLANTA BALLET

The Atlanta Ballet will present four ballets, delightfully varied in mood and style, at its third pair of season programs Friday and Saturday, November 21 and 22, at the Fox Theatre. The 8 pm programs will include a world premier by the Atlanta Ballet's award-winning Resident Choreographer Tom Pazik.

The performances will open with George Balanchine's "Raymonda Variations," which is danced to Alexander Glazounov's "Raymonda." An abstract ballet, "Raymonda Variations" highlights the company's fine ensemble work at the opening and close.

The mood shifts dramatically in Pazik's "Bagatelles," featuring music by Alexander Tcherepnin. The dancers in this modern work portray a group of Greek Warriors engaged in combative play. Pazik created this stunning celebrating of male dancers' athletic prowess in 1979.

A seemingly endless source of creative energy, Pazik will also unveil "El toro de plata (the Silver Bull)", set to Morton Gould's "Latin American Symphonette." Pazik captures the frantic energy of a unique era in this world premier. The action occurs in the late 1920's when liquor was illegal but tantalizingly available dancing was a passion and provocatively Latin, and nightlife teered between delicious and decadent among New York's cafe crowd.

Tickets for the Atlanta Ballet's November 21 and 22 performances are available at the Fox Theater box office and all SEATS outlets.

ALUMINUM RECYCLING

With the holiday season just around the corner, collecting all-aluminum beverage cans is an ideal way for area residents to earn extra cash for Christmas.

During November, Reynolds Aluminum Recycling Company pays cash for household aluminum every Tuesday through Saturday (except Nov. 27 & 28) from 9:00 a.m. to 12:00 a.m. at the Unclaimed Freight Parking Lot, 119 N. Cobb Parkway.

Reynolds pays 23¢ a pound for aluminum cans and other clean aluminum items. In certain markets, Reynolds pays a bonus price depending on local market conditions. For further information, call toll-free 1-800-228-2525.

"Each year during November, we experience increased interest in recycling as many of our customers discover that money earned from recycling helps pay for Christmas gifts," explained Dick Kephart, District Manager, Reynolds Aluminum Recycling Co.

Recyclable aluminum includes such items as beverage cans, foil, pie plants, frozen food and dinner trays, dip, pudding and meat containers. Siding, gutters, storm door and window frames, and lawn furniture tubing is also recyclable. These items should be cut to lengths not exceeding three feet and bundled.

Sting Focus

OCEANS AS A FOOD SOURCE

The Federal Government recently completed and released a study that reveals some of the problems that all of us will face by the year 2000. This study is not the work of statistics analysts who merely project present rates into the future, but by knowledgeable scientists who have been studying their fields for years. The findings of this report indicate that some very big problems facing mankind will become even more critical as time goes on. Almost all of the major problems have to do with there being too many people on too small a planet. With this expected population increase comes a very real need to not only utilize our present resources but to find new ones for future generations. The main resource man must have for survival is food. Since man will occupy more and more of the land spaces, farmland will be used for housing instead of raising crops. Man must begin to look elsewhere for food and one of the prime considerations is the sea.

It must be recognized at the outset that with today's technology and that of the foreseeable future, the oceans of the world cannot be expected to solve the hunger problems single-handedly. What we can hope to do is to learn to farm the oceans enough to supplement our food supply and enough to make a significant difference. This goal is within our reach.

Fish have long been a big part of our diet and seafood makes up entire diets in some parts of the world. The fishing industry is a large one, employing hundreds of thousands along the coastlines of the United States alone. However, as large as the daily catches may be, experts say that there is no way to significantly increase overall productivity unless boats are willing to go farther and stay gone longer. This is exactly what a few European fishermen are doing as they travel thousands of miles and are at sea for three to four months in their trips to the waters of the Antarctic to fish for Krill. Krill is one of the few new food discoveries in the oceans in the last few decades. Krill are small, shrimplike animals that feed and thrive in the freezing waters just off the coast of the South Pole. The tiny creatures have the same protein content as beefsteak, and, although sometimes hard to locate, travel in gigantic schools which can fill a ship's freezer holds in just a few days. At present, Krill are being processed in Europe as a protein food additive and also as seafood delicacy. The main drawback to Krill fishing is the enormous distance that must be traveled and the uncertainty of the creature's numbers which raises questions of the impact on other sealife should the Krill numbers be reduced drastically.

At the other end of the sealife spectrum are plants. Like the dry land of Earth, much of the ocean floor is habitat to a variety of vegetation. Off the western coasts of the United States lie Kelp forests which are just beginning to show their worth as a food commodity. Although, not readily edible, Kelp has several important uses to man. The main use at present is that of fertilizer. The plant carries many soil nutrients and makes a very good fertilizer in western farms. One of the best attri-

butes of Kelp is its own regeneration rate. Unlike many valuable food commodities, Kelp seems able to replenish itself almost as rapidly as it is needed. A stalk of Kelp can grow as much as six inches per day.

The fishermen of the northeastern coasts harvest a different kind of plant. A type of seaweed called Irish Moss has been used for centuries not only as a fertilizer, but as a table food as well.

The moss grows as much as 300 yards out and in about 30 foot depths. The weed is gathered by using a long, rakelike tool and is placed in the boat the fisherman is working from. Often the moss can be raked right off of the surface when it breaks loose due to a storm or currents. Once gathered, the moss is dried and either ground into a starchlike food additive or on occasion used in the traditional methods and cooked as is.

In mentioning resources from the sea, it must be mentioned that the commercial fishing industry wastes a staggering amount of potentially usable food on an everyday basis. This waste is from several sources, including incidental catches of nontarget fish, waste of non-edible fish parts which make excellent fertilizer, and processing systems which greatly reduce nutritional value. These waste materials, if properly utilized, could make a significant difference in at least a regional food supply.

In the future, man must face some questions of the sea which he may find distasteful. As it becomes more and more important to effectively use the sea, we will come into direct competition with many sea animals which feed on game fish in order to survive. One of man's favorite sea creatures, the dolphin, consumes fish that man will need for his own table. Japanese fishermen already wage war on the porpoise to the extent that we find extremely offense, yet we will eventually be faced with the same choice that they have already made. Shellfish such as Abalone, Oysters and other mollusks are being seriously depleted by either uncontrolled fishing or by pollution. Even albacore tuna, which started the commercial fishing industry, is now showing concentrations of lead in some areas of the ocean.

While the oceans of the world cannot be depended on as the total solution to the world's hunger problem, they can play a significant role as a backup resource. Either through direct consumption of fish or shellfish, or using ocean products as fertilizer to grow land crops, the seas do hold a bounty that is well worth investing technology and time into.

SURVIVAL OF THE AFRICAN ELEPHANT

It is very hard to conceive that in our own time, man himself is the leading cause of extinction of the African Elephant. More recently, man has been killing a larger number of these elephants than before. There are more people destroying these animals than are trying to save them from extinction.

Conservation of the African Elephant seems to be a losing battle. The number of African Elephants is steadily diminishing because of the expanding civilization and its need for more farms and

ranchlands. However, the major reason for the extinction of the African Elephant is man's greed. He slaughters these animals for its ivory tusk.

Tens of thousands of elephants are slaughtered each year. Tons of ivory leave Africa and are being used only for ornamental objects such as currency jewelry, and objects of art. Man is guilty but surely causing the African Elephant to become extinct.

On much of the African continent, elephants are being killed faster than they can reproduce. From 1976 to 1979 in a study by Lain Douglas-Hamilton, it was concluded that only about 1.3 million elephants existed on the African continent.

Thousands of elephants are victimized by poachers every year. To add to the threat of extinction, the growth of the human population poses the great long-term threat in that it crowds the elephants out of its territory and limits their food supply.

Only a few countries in Africa such as Zimbabwe, Malawi, Senegal, and South Africa have tried to enforce conservation laws. But in Uganda, Chad, Zaire, Angola, and a few other countries, political indifference has helped stimulate the slaughter of these animals.

Why are these elephants being slaughtered? The dried meat from a single elephant sells for \$100 and goes for 55¢ a pound in the local market. The skin is more valuable and sells up to \$1200. The hide is used for leather goods such as briefcases, shoes, bags and purses. The feet are used for waste-paper baskets, umbrellas and pencil holders. The fat is used for cooking after being melted. The tusks are sold to make ornamental objects.

There is no safe haven for the African Elephants. Today, the largest population of about 7500 elephants live in South Africa's Kruger National Park. The safest refuge is still the dense equatorial forest. This is a strong where the elephants can get away from man.

The story of the African Elephant could be a lot different with a much happier ending but there are too few individuals who are concerned with the conservation of one of nature's more beautiful creatures. Groups support the idea of the survival of these magnificent animals are the World Wildlife Fund, New York Zoological Society, The International Union for Conservation of Nature and a treaty called the Convention on International Trade in Endangered Species.

Elephants are such magnificent creatures of nature and should they become extinct, man will be the major cause because of greed and nothing else.

Terry W. Drayton



What's happening

ROTARACT

What is Rotaract? Perhaps you have heard of Rotaract and know that they are an international service organization of more than 57,000 members belonging to 2,800 clubs. These clubs work on three major projects a year. One for the local community, another to promote international understanding and peace, and a third aimed at establishing higher ethical standards among businesses and professionals.

Less than two years ago on March 30, 1977, the Southern Tech Rotaract Club received its charter from Rotary International. Though their membership is small, they have proven that dynamite comes in small packages by raising more than \$5,000 each year from selling Bath-tub Race T-shirts. The money is contributed to the Leukemia Society of America.

This quarter the Southern Tech Rotaract Club, headed by President John Freeman and Vice-President Steven Causey, are currently involved in building playground equipment for the Marietta Child-rens Center for emotionally disturbed children.

Anyone interested in joining the Rotaract club should contact their advisor Mr. Fausett. There are no academic requirements just a willingness to get involved and a desire to help people.

MAKE-UP DAY SCHEDULED FOR ANNUAL PICTURES

A make-up day has been scheduled for students to have their pictures made for next year's Log yearbook. Georgia Photographics, Inc., will be on campus Monday, December 1, from 9 a.m. through 5 p.m. to take student, faculty and staff pictures free of charge. No appointment is needed; interested students should drop by Room 120 in the downstairs of the Student Center some time during the day.

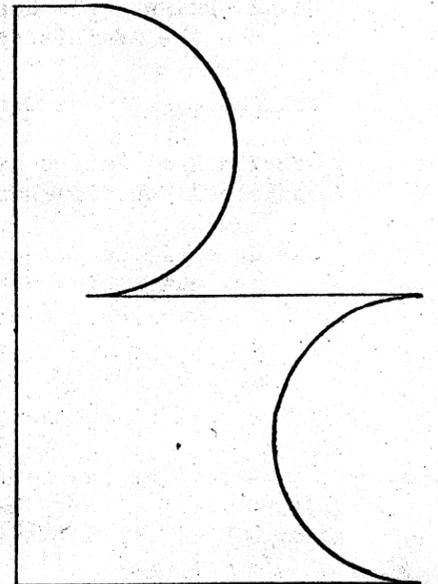
A number of packages are available at reasonable prices. Special packets offering resume photos will be for sale. Those students wanting more than one shot taken or desiring proofs may order them for a small charge.

Approximately 90 students who had their pictures taken by Georgia Photographics in October will need to return December 1 to have their pictures re-made, due to a camera malfunction. A list of the students needing to have photos re-made has been distributed in student mail boxes. For more information, contact someone on the Log staff, or Log advisor Patti Futrell.

STINGERS

from de Caux

25



The above shape is eight units high and seven units wide. Can you cut it into two identical pieces? (The semicircles have the same diameter.)

David Schornak, Mike Sumrell and at least one calculator got together and solved STINGER #24. Quite a feat! Anyone interested in working on #24 should of course note the typographical error which I blame the typist! There were FIVE sailors and not four, as should have been clear from the story! Solutions to any STINGER may be left in my office 256b or in my box at the Mathematics Dpt.

Clubs and Organizations

BLACK STUDENT ASSOCIATION

Annually, the BLACK STUDENT ASSOCIATION of Southern Tech sponsors a Thanksgiving Basket in an effort to provide food to needy families in the Cobb County Community. Because of your support, last year our drive was an overwhelming success! In order to continue this worthwhile project, we need your help again this year.

We are in the process of collecting canned goods and nonperishable food items to be given to needy families. There are three collection stations. These stations are located in the upper and lower levels of the Student Center and in the main entrance of the Administration Building. Those desiring to make monetary contributions should contact Ms. Glover, Director of Financial Aid

BAPTIST STUDENT UNION

The members of the Baptist Student Union would like to welcome you to our next meeting on November 25 in Conference Room A in the Student Center at 12:00 noon. We will be having our Thanksgiving Program presented by Bobby Evans, our campus minister.

PI KAPPA PHI

The Brothers enjoyed participating in Goat Day this past weekend. Our most enjoyable events were the tug-of-war and the barrel roll. We look forward to next year's Goat Day and hope to become more competitive. We wish to thank the IFC and Sue Conrad for making the day most enjoyable.

November 21, 1980

GAMMA PHI BETA

Gamma Phi Beta celebrates our Founder's Day on November 11. We will have a Luncheon on November 15 at 12:00 noon to commemorate this day. Thanks again to Tau Kappa Epsilon for a great mixer last Monday.

TWO NEW SCIENCE ELECTIVES TEXTILE DEPT

What company will you be working for when you graduate from STI? Well, if there is possibility that you might be employed by a textile-related company, you might be interested in taking these courses:

TET 371--Carpent Manufacturing 3 hrs.
(T Th 9-10:30)

TET 393--Textile Industry Safety 3 hrs.
(t Th 9-10:30)

These courses were designed with the non-textile student in mind. Textile Technology and terminology knowledge is not needed. No text is needed. Lectures will be supplemented by presentations by visiting industry experts; plant trips; slides and/or film. Tests will be taken from notes obtained from these sources.

The carpet manufacturing center of the world is Dalton, Georgia, just 55 miles north of Marietta. Ninety percent of all carpet produced in the world is produced within a 50-mile radius of Dalton. The carpet industry is one of the fastest growing industries in the U.S.

SCHEDULING OF MEETING ROOMS IN THE STUDENT CENTER

Every quarter there is shortage of meeting room space in the Student Center on Tuesday's and Thursday between the hours of 12:00 Noon and 1:00 p.m. In order to be fair to all organizations, I am setting up the following guidelines for reserving rooms during the peak period. THESE GUIDELINES ONLY APPLY TO THE ABOVE STATED TIMES!

1) all recognized organizations can reserve Rooms 119 and 120 if they have over 20 members. If their membership less, then they cannot reserve Rooms 119 and 120, and they, should reserve the conference rooms instead.

2) The Student Center Office will take reservations Winter Quarter until December 1, 1980 at 9:00 a.m. At that time the student center secretary will schedule on a first come first serve basis. Mrs. Burr will handle all scheduling, so all requests must be submitted to her in writing. If there are any questions, concerning these guidelines please contact Sue Konrad, Director of Student Activities.

What's happening: County, City

COBB CIVIC CENTER--NOVEMBER SCHEDULE

HUDGINS HALL

November 22	University of Georgia Basketball	6:00 & 8:00 p.m.
November 23	State Conference--Church of Jesus Christ of Latter Day Saints	
November 23	Georgia Championship Wrestling	8:00 p.m.
November 29	The Inspirations Gospel Concert	7:30 p.m.
November 30	Georgia Championship Wrestling	8:00 p.m.

THEATER

November 21-22	"Treehouse"--Cobb Children's Theatre	8:00 p.m.
November 23	"Treehouse"--Cobb Children's Theatre	2:00 p.m.
November 24	Special Talent Show	7:00 p.m.
November 25	Senior Citizen's--Greek Trip Slides	9:00 a.m.

CAMPAIGN MATERIALS BEING DEVELOPED

With the campaign for funds for a new High Museum of Art scheduled to begin in 1981, work is rapidly progressing to complete the advertising and public relations materials that will be used throughout the solicitation of corporations, Museum Membership, and the general public. The Atlanta agency of Burdette Campbell, Inc. is handling advertising and the development of campaign materials, and has assigned its senior creative personnel to the task, according to agency president Ron Scharbo. Going all profit, the agency will not only produce radio, television, and print ads, booklets and brochures, but will aid in asking suppliers, producers, and printers to donate time and services. Public service time and space will also be requested of the Georgia State Office.

MUSEUM SHOP

The Museum Shop has recently added to its wide range of gifts available for Christmas, especially in the area of ethnic clothing.

On display are several old silk kimonos, including a child's silk fairytale kimono. Other oriental items include Japanese Hina dolls, porcelain, and a wonderful assortment of Japanese festival toys.

Blouses, skirts, and dresses from India have recently gone on display, along with a fresh assortment of petal joint boxes and glasses cases.

The Museum Shop is located on the first floor of the Museum, at the south end of the Peachtree entrance lobby. Museum Members receive a 10% discount on purchases and Patron Members may subtract 20%. Credit cards are acceptable.

ATLANTA BALLET TICKETS

Tickets for the Atlanta Ballet's October performances are available at the Fox Theatre Box office and all SEATS outlets. The company will also perform November 7-8, November 21-22, December 19-24 ("The Nutcracker"), March 5-7, March 20-21 and April 17-18. Persons interested in subscribing to the entire season may do so by calling the Ballet office at 873-5811.

GIVE A MEMBERSHIP

The High Museum of Art now has over 11,000 members. But there are many in the community who would enjoy being members who are not. Use the application form and surprise a friend or relative. A gift of membership lasts all year. For further information, call 898-1151.

ATLANTA HONORED AS ONE OF THE NATIONS TWELVE MOST BEAUTIFUL CITIES

When international acclaimed watercolorist Dong Kingman was asked to select twelve cities in the United States to paint for an internationally distributed calendar, he chose Atlanta as one of the ones he most wanted to paint.

This Tuesday, November 17 at 10:30 a.m. the original painting, valued at \$6,000.00 will be presented to Mayor Maynard Jackson, who will accept it on behalf of the city of Atlanta.

The presentation will take place at the beginning of the Mayor's weekly press conference and will be made by the artist, Doug Kingman. The scene chosen by Mr. Kingman to depict the feeling of the new Atlanta was that of the Central City Park and the activities that make it an important part of Atlanta's daily life.

In this time when the nation is pointing to Atlanta's problems, it is nice to know that others have the ability to see the excitement, beauty and uniqueness of this great city. The paint was commissioned by Mr. Rock Aoki, founder of Benihana of Tokyo.

The press is cordially invited to attend this presentation. Photos will be allowed.

For further information contact: Michael Parver Associates, Inc.

SPECIAL POETRY CONTEST

A \$1,000 grand prize will be awarded in the Special Poetry Competition sponsored by World of Poetry, a quarterly newsletter for poets.

Poems of all styles and on any subject are eligible to compete for the grand prize or for 49 other cash or merchandise awards, totaling over \$10,000.

Says Contest Chairman, Joseph Mellon, "We are encouraging poetic talent of every kind, and expect our contest to produce exciting discoveries."

Rules and official entry forms are available from the World of Poetry, 2431 Stockton, Dept. N, Sacramento, California 95817.

THE TENNESSEE TUCKER BAND

In his first appearance as a sole entity, Tennessee Tucker is performing with his band, now featuring Miss Billie Berretta (2nd place winner of WPLO's Search of the South Contest) at Jeryl's. The group offers the latest in country-rock and bluegrass music presented in an energetic format and highlighted by the keyboard-banjo antics of Don Stewart. It is a show you won't want to miss.

Shows are Tuesday through Saturday, offering drink specials all week long. For further information, call Jeryl's at (404) 955-2403.

APPA

The Atlanta Press Photographers Association will be conducting the eighth annual Atlanta Seminar on Photojournalism on Friday, Saturday and Sunday, December 5, 6, 7, 1980 at the Stadium Hotel in Atlanta.

The seminar is open to the general public and high school and college students interested in photojournalism are particularly encouraged to attend. Portfolios for critiquing by speakers are welcomed.

Features include contests, manufacturer's exhibits, workshops on many subjects, portfolio critiques, a hospitality suite and a list of fine speakers.

For more information and registration forms contact:

Al Stephenson
Seminar Director
321 Edgewood Avenue, SE
Atlanta, GA 30312

AAU BODYBUILDING CONTEST

Women's bodybuilding makes its Atlanta debut this month as ladies compete in the Ms. Confederate States Contest. The AAU event will be held in conjunction with Mr. Confederate States Contest at the Center Stage Theatre, 1374 West Peachtree Street, on Saturday, November 22, 1980. Prejudging will begin at 10:00 a.m., and the Evening Show will be at 8:00 p.m.

Athletes will compete in Teenage, Junior and Open Divisions according to height classes--short and tall. Contestants should obtain an AAU card prior to contest time.

For more information, contact Doc Neely at 404/996-3627.

WATER RESOURCES STUDY NEARS COMPLETION

Common sense tells us that like every other natural resource our water supply is not unlimited. If the region hopes to meet the needs of the future generations, planning and conservation efforts should be well underway.

Water resource planning efforts are indeed underway in the Atlanta Region and have been for some time. ARC has been addressing these critical issues for over eight years through its participation in the Metropolitan Atlanta Water Resources Study (MAWRS).

September is landmark month for the eight-year Study because it is during this month that public hearings will begin on the final segment of MAWRS report entitled Draft Final Report on the Long-Range Water Supply Study.

Work on the effort began in March, 1972, when the Senate Public Works Committee directed the U.S. Army Corps of Engineers to work with the Atlanta Regional Commission in conducting a major water resources study for the Atlanta area. The Metropolitan Atlanta Water Resources Study group was formed to carry out this mandate.

The group, currently composed of the Atlanta Regional Commission, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the Environmental Protection Division of Georgia's Department of Natural Resources and the Georgia Mountains Area Planning and Development Commission, took a step-by-step approach to examining the region's water resource needs.

First, MAWRS isolated some of the area's specific water-related problems. For instance, the region is usually graced with abundant rainfall, but unique topographic features tend to offset this abundance.

The area is located on a subcontinental divide. This means that approximately one-third of the region is drained by streams that ultimately flow to the Atlantic Ocean and the rest flow to the Gulf of Mexico. As a result, most of the streams, excluding the Chattahoochee, are small headwater streams having very low flow during dry weather. Combine this with the region's limited ground-water supply and the area is left with streams that are extremely susceptible to pollution problems.

Initial phases of the MAWRS report also examined the region's current and projected water needs. These studies show that every person in the Atlanta Region currently uses 143 gallons of water each day. That's over 250 million gallons for the seven-county area.

Naturally, as the population continues to increase, the amount of water the region consumes will also increase. If per capita consumption were to remain the same, by the year 2000 the region's daily consumption would mushroom to 500 million gallons a day.

But water conservation efforts are expected to reduce per capital consumption to 120 gallons per day by the year 2000 resulting in a total savings of 80 million per day for the region. This savings will be achieved through voluntary efforts of area residents, industrial recycling, and implementation of Georgia's Water Conservation Law.

In 1978, MAWRS submitted a report to Congress which fulfilled the Senate Public Works Committee's original mandate, except for one major unanswered question: What method would be used to make available additional water supply from the Chattahoochee?

The final phase of the MAWRS report being discussed in public hearings this month presents alternative answers to this question. The three alternatives include: constructing a reregulation reservoir downstream from Buford Dam; reallocating storage at Lake Lanier from power to water supply; and dredging Morgan Falls Reservoir, plus reallocation of storage.

The Atlanta Regional Commission has previously expressed its preference for the construction of the reregulation reservoir to meet future water supply needs for the region. Based on a careful review of the Long-Range Water Supply Study and the public hearing record, the MAWRS groups will make the final recommendation in early November. Written comments, considered until October 10, may be made to: Col. Tilford C. Creel, Corps of Engineers, PO Box 889, Savannah, GA 31402.

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IN CONCERT WITH TIM BAYS

On Tuesday of this past week, a small group of Southern Tech students were entertained by folk musician Tim Bays in the cafeteria area of the Student Center. Although the attendance was poor (perhaps 15 people) it was one of the best folk concerts this reporter had been to of late--and it was made even more enjoyable by the fact that no admission was charged.

Tim Bays, a lanky, soft-spoken Michigan transplant, is familiar to those who frequent the Little Five Point Pub or the Harvest Moon Saloon. Bays, who has been compared to David Bromberg and Steve Goodman, fortunately sounds like neither. He has his own sound vocally, making him much more listenable performer than most folkies (many people tire of folksingers with intelligent lyrics and a tired, plaintive delivery of such).

Yet is easy to compare Bays with folk performers of some note. The lyrical content of his music (which is, by the most part, original) is quite witty. His six-string guitar often sounded like Leo Kottke's twelve-string, and his high spirited tunes reminded some of Joni Mitchell's guitar work in an up-mood. And throughout the evening, Tim Bays had great support with his audience giving an excellent performance to the few who showed--a truly professional attitude.

Several times during the show, Bays delivered short, humorous monologues as lead-ins to his songs. The subjects ranged from gentle put-downs of TV "fire and damnation" preaches to hopes an afterlife where all the bad girls go. After a brief break in his performance Tim returned and performed a few requests. After playing some Ry Cooder tunes and a David Bromberg meledy, he did a 1940's croon a'la Leon Redbone. Although seemingly comfortable with this music, he soon returned to his own and delighted his audience further.

All in all, the 2 1/2 hours spent listening to Bays were definitely not wasted. Readers who enjoy modern folk music should plan or attend a Tim Bays performance. He'll stop again at Southern Tech in the not-too-distance future; but, better yet, catch him at the Harvest Moon Saloon, or any other decent Atlanta club or tavern.

Steve Cantrell

MUSEUM INFORMATION

The High Museum of Art now has a special telephone number for information. By dialing 873-4615, callers will get a complete recorded update of Museum current exhibitions and upcoming events.

Classifieds

Classified ads are free to all students faculty and administration personnel.

AIRLINE JOBS--FREE INFORMATION!!!

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CALCULATOR CORNER

by Bill Beebe

And here we are again this week with another installment of the Calculator Corner, with your host Wild Bill. In case certain of our Gentle Readers in the greater wastes of Southern Tech have forgotten our five year mission, Calculator Corner was created for the express purpose of publishing software for use expressly on the handheld programmables. The handheld programmable can be quite a lifesaver with the right programs for the right course, especially towards the end of the quarter when all the profs seem to sprout horns and hand us final projects conceived by minds more than human and written in blood on faded parchment.

In a more serious vein, the handhelds can get you through some rough spots in a course, but

only if your up on whats going on in a course anyway. Having one of the little marvels with all the programs written for that machine and the course is no guarentee of passing the course. If all it took was punching and crunching to get a degree, then you could send your calculator to college to get your degree for you. The programs presented here are not an end unto themselves, but as a means to an end. They are presented as helpful, practice tools.

And the programs can be for as many as who wish ot participate. The reason EE programs have been presented these past two issues is because that is all I have had to work with. ANYONE with a handheld can present this column with a program for publication. I write pro-

grams for the TI 58/59 because I personally own a '59. But any other programs for other machines (HP, Sharp, etc.) are welcome. All that is asked is a clear, concise listing of the programs keystrokes, an explanation of what the program will do in two to three paragraphs, and a comprehensive example problem showing how the program can be used, and as a checkout for the program.

This weeks program will solve three linear equations in three unknowns with complex coefficients. The coefficients can be entered in either polar or rectangular form, with the final answers in rectangular format only. Givne the three equations in the following form;

$$\begin{aligned} 1x + 4y + 7z &= 10 \\ 2x + 5y + 8z &= 11 \\ 3x + 6y + 9z &= 12 \end{aligned}$$

the numbers 1 through 12 represent the complex coefficients and indicate thier order of entry. (Element entry follows the convention established by ML-02 & -03 in the master library).

The program is short enough to run on either the '58C or the '59, requiring only 240 program steps and 30 data registers. The '58C memory partition should be 239.29, while the '59's should be 239.89. There are no special keycodes to watch for, but do pay attention to the merged keystrokes such as ST* (STOre indirect, [STO][2nd][Ind]), RC* (ReCall indirect, [RCL][2nd][Ind]), and EX* (EXchange indirect, [2nd][Exc][2nd][Ind]), and the absolute addresses for the DSZ and SBR commands.

Once keyed in, the program is used in the following manner;

[SBR][CLR]--Initializes the calculator and program for data entry. Clears out all data registers, and sets up counter R01 and pointer R00.

[A]--This key is used to enter the coefficients in rectangular format. First, key in the real part, press [x:t], then key in the imaginary part. Press [A], and the program converts the complex rectangular number to its polar equivalent and stores it in the proper registers. Returns with the magnitude of the converted number in the display.

[B]--This key is used to enter the coefficients in polar format. Key in the magnitude, press [x:t], key in the angle, press [B]. Returns with the magnitude in the display.

[SBR][CE]--In case a mistake is made in the course of element entry, key in the ordinal number of the element to correct and press [SBR][CE]. Program returns with a number in the display corresponding to the first data register occupied by the magnitude. Ignore this and re-enter the element by [A] or [B].

0	76	LBL	055	00	0	110	32	x:t	160	43	RCL	215	21	21
1	18	C'	056	37	37	111	43	RCL	161	11	11	216	97	DSZ
2	85	+	057	76	LBL	112	17	17	162	18	C'	217	02	2
3	01	1	058	71	SBR	113	85	+	163	92	RTN	218	02	2
4	08	8	059	17	B'	114	43	RCL	164	76	LBL	219	06	06
5	00	0	060	43	RCL	115	07	07	165	15	E	220	92	RTN
5	76	LBL	061	02	02	116	85	+	166	06	6	221	76	LBL
7	19	D'	062	42	STO	117	43	RCL	167	85	+	222	25	CLR
8	95	=	063	04	04	118	15	15	168	76	LBL	223	47	CMS
9	37	P/R	064	32	x:t	119	19	D'	169	14	D	224	01	1
0	44	SUM	065	43	RCL	120	43	RCL	170	06	6	225	76	LBL
1	02	02	066	01	01	121	10	10	171	85	+	226	25	CLR
2	32	x:t	067	42	STO	122	65	x	172	76	LBL	227	75	-
3	44	SUM	068	03	03	123	43	RCL	173	13	C	228	01	1
4	01	01	069	92	RTN	124	18	18	174	05	5	229	03	3
5	92	RTN	070	76	LBL	125	10	E'	175	95	=	230	85	+
6	76	LBL	071	17	B'	126	43	RCL	176	42	STO	231	42	STO
7	16	A'	072	25	CLR	127	09	09	177	29	29	232	01	01
8	65	x	073	42	STO	128	85	+	178	71	SBR	233	85	+
9	43	RCL	074	01	01	129	43	RCL	179	01	1	234	02	2
0	20	20	075	43	STO	130	17	17	180	97	97	235	09	9
1	95	=	076	02	02	131	18	C'	181	17	B'	236	95	=
2	32	x:t	077	43	RCL	132	43	RCL	182	36	PGM	237	42	STO
3	43	RCL	078	06	06	133	16	16	183	04	04	238	00	00
4	19	19	079	65	x	134	65	x	184	18	C'	239	91	R/S
5	85	+	080	43	RCL	135	43	RCL	185	48	EXC	LABEL LIST		
6	92	RTN	081	22	22	136	06	06	186	29	29	001	18	C'
7	76	LBL	082	10	E'	137	16	A'	187	71	SBR	007	19	D'
8	10	E'	083	43	RCL	138	43	RCL	188	01	1	017	16	A'
9	65	x	084	05	05	139	15	15	189	97	97	028	10	E'
0	43	RCL	085	85	+	140	85	+	190	01	1	039	11	A
1	14	14	086	43	RCL	141	43	RCL	191	94	+/-	043	12	B
2	95	=	087	21	21	142	05	05	192	49	PRD	058	71	SBR
3	32	x:t	088	19	D'	143	17	C'	193	04	04	071	17	B'
4	43	RCL	089	43	RCL	144	43	RCL	194	43	RCL	165	15	E
5	13	13	090	10	10	145	22	22	195	29	29	169	14	D
6	85	+	091	65	x	146	65	x	196	91	R/S	173	13	C
7	92	RTN	092	43	RCL	147	43	RCL	197	42	STO	222	25	CLR
8	76	LBL	093	12	12	148	08	08	198	00	00	226	24	CE
9	11	A	094	16	A'	149	65	x	199	02	2	DATA REGISTER USE		
0	22	INV	095	43	RCL	150	43	RCL	200	03	3	R00-Storage pointer		
1	37	P/R	096	11	11	151	12	12	201	42	STO	R01-Pointer,used		
2	76	LBL	097	85	+	152	95	=	202	01	01	R02-Counter,used		
3	12	B	098	43	RCL	153	32	x:t	203	06	6	R03-used by ML-04		
4	72	ST*	099	09	09	154	43	RCL	204	42	STO	R04-used by ML-04		
5	00	00	100	19	D'	155	21	21	205	02	02	R05-R28-complex element		
6	69	OP	101	43	RCL	156	85	+	206	73	RC*	storage, even registers		
7	20	20	102	18	18	157	43	RCL	207	01	01	magnitude, odd registers		
8	32	x:t	103	65	x	158	07	07	208	63	EX*	angle.		
9	72	ST*	104	43	RCL	159	85	+	209	00	00	R29-temporary storage		
0	00	00	105	08	08				210	72	ST*			
1	69	OP	106	65	x				211	01	01			
2	20	20	107	43	RCL				212	69	OP			
3	97	DSZ	108	16	16				213	20	20			
4	01	1	109	95	=				214	69	OP			

What's Happening

MARS - - - THE MILITARY AFFILIATE RADIO SYSTEM - - - WHAT IS IT?

MARS, the Military Affiliate Radio System, is over fifty years old. It is a voluntary association of men and women radio amateurs interested in military communications and electronics. Each of the three military services has its own MARS, operating under the overall guidance of the Department of Defense. There are over 14,000 MARS members worldwide.

Army MARS is sponsored by the Department of the Army. It is given specific missions and functions, using assigned frequencies and distinctive call signs. Affiliates (members) of MARS are under no service obligation, but to maintain membership, they are asked to participate in a MARS net or other approved activity for not less than twelve hours each calendar quarter. A report of such activity is required each month. A member may resign at any time without prejudice by written notice to the State MARS Director.

The basic operational unit of the System is the net. All nets are directed by a Net Control or Alternate and meet for one hour for traffic handling, training, and, if time permits, comments by members. Participation in the Georgia Army MARS nets requires equipment capable of operating SSB on at least two of the following frequencies: 4.020 MHz, 4.010 MHz, 4.003 MHz. Several other modes and frequencies are optionally available. In addition to traffic handling, one hour each week is devoted to emergency operation, and a second hour is reserved for training. An Administrative Net, under the control of the State Director, meets once each week to announce matters of interest to members throughout the State.

Each year, usually in the early Fall, the State Director convenes a state-wide one-day conference. All Army MARS members are invited to attend. Other meetings and conferences are announced from time to time. In some areas of Georgia members, their families, and friends meet periodically for informal dinners and discussions of matters of mutual interest. Announcements as to time and place are made during regular net sessions.

In addition to on-the-job training in operation and techniques, MARS also offers excellent correspondence courses in electricity and electronics. These courses are available at no cost and include high-quality manuals that may be retained by the student at the completion of the course.

Requirements for membership in MARS are:

1. Hold a valid FCC amateur license;
2. Be 14 years old or older;
3. Be a citizen of the United States or a resident alien.

Additional information may be secured from any Army MARS member or from

Harry L. Price, AA4LGA, State Army MARS Director
2523 Drew Valley Road, S. E.
Atlanta, Georgia 30319
Phone: (404) 634-9768

AGNES SCOTT WRITERS' FESTIVAL INVITES MANUSCRIPTS FOR ITS POETRY AND FICTION CONTESTS

Prizes of \$100.00 each will be awarded for the best poem and the best story, at this year's festival (April 8, 1981).

1. Contributors must be enrolled in a college or university in Georgia.
2. Works entered must not have been published except in campus newspapers or magazines.
3. Those manuscripts judged best will be published in the Festival issue of AURORA.
4. No more than five (5) typed pages of poetry may be submitted by a contributor.
5. No more than two (2) typed stories of 3,000 words or fewer may be submitted by a contributor.
6. If manuscripts are to be returned, they must be accompanied by a self-addressed, stamped envelope.
7. No contestant may win either prize more than twice.

MAIL ENTRIES TO: Agnes Scott Writers' Festival
Department of English
Box 975
Agnes Scott College
Decatur, GA 30030

NOVEMBER 21, 1980

"CALCULATOR CORNER" from p.15

Once all the elements are entered, (after # 12), the program will automatically calculate the characteristic determinant, delta. Program will stop with the real part of delta in the display and the imaginary in the t-register. If a mistake is made in the entry of element 12, press [R/S] to halt program execution, key 12, then [SBR][CE], then re-enter via [A] or [B]. Program will re-commence with automatic calculation of delta. If delta is zero (real & imaginary) a solution is impossible.

To solve for either of the three unknowns x, y, or z, press [C] to solve for x, [D] to solve for y, or [E] to solve for z. Program will return answer with the real in the display and the imaginary in the t-register.

[SBR][SBR]--If during the setting up of the equations it is discovered that one of the coefficients was incorrectly derived, and if the original elements were entered and still reside in data registers, correct that element per [SBR][CE] and re-enter on [A] or [B]. Then, to set up delta (and the denominator registers R03 & R04) press [SBR][SBR]. Program returns with delta as before.

Due to limitations of space, an example problem can not be conveniently shown here. There will be, however, a copy of the example problem in the library at the desk. In the same folder will also be a copy of an RPN program for finding the value of a complex determinant, which was submitted by EET student Scott Hamilton.

If there are any questions or comments, feel free to drop a line to the Calculator Corner by way of the STING office, or by my P.O. box, 8253. Program submissions should be sent to MY BOX ONLY. All programs submitted should be accompanied with a return address, as all materials, used or not, will be returned to the original author.

ATLANTA SKI CLUB

Not only do Atlantans live in a vibrant and progressive city, but the Atlanta Ski Club offers a unique opportunity to all of us. We have both winter and summer sports within each reach. ASC summer programs are both interesting and exciting, and offer a means of staying in shape. Our own Sawdust Ski School teaches skiing to all levels of skiers, and our extensive program of Local Trips (downhill and cross country) is already in the final planning stages. The areas we'll be going to this year are Sugar Mountain, Beech Mountain, Wolf Laurel and Seven Devils, North Carolina; Snowshoe, West Virginia; and possibly to a new area on the Georgia-North Carolina line, Scaly Mountain.

FOR MORE INFORMATION CONTACT:
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Atlanta, GA 30309