



TODAY

PEOPLE

SEPTEMBER 1987

COMSAT Picnic: Fun, Food, Camaraderie

With the mercury nudging 100 degrees, getting people on the softball field or the tennis court was a hard sell. But, from all appearances, the estimated 1,150 people who attended this year's COMSAT Corporation picnic didn't let the heat get in the way of a good time.

Held August 9 at the Cedar Crest Country Club in Centerville, Va., the picnic drew employees from Clarksburg, the Plaza and Merrifield. They brought along families and friends—and took advantage of a day of fun, food and relaxation. The COMSAT picnic is an annual event that allows employees from across the company's businesses to gather for a day of camaraderie.

Water activities—swimming, paddle boating and canoeing—drew the biggest crowds. Horseback riding, a sport that requires little physical exertion, at least on the part of the rider, was also popular. Reports are that reservations for rides were being made hours in advance.

The heat may have stifled some activities, but eating and drinking were not among them. Officials at the country club reported afterwards that COMSAT picnickers ate 1,200 pounds of ribs, 600 pounds of chicken, 1,800 hamburgers and 700 hotdogs. They drank nine and one-half kegs of beer and an incalculable quantity of soft drinks.

One employee who spent a hard day eating, drinking and walking between the two food pavilions said it was a great time, so great that "when I got home, I went directly to bed."

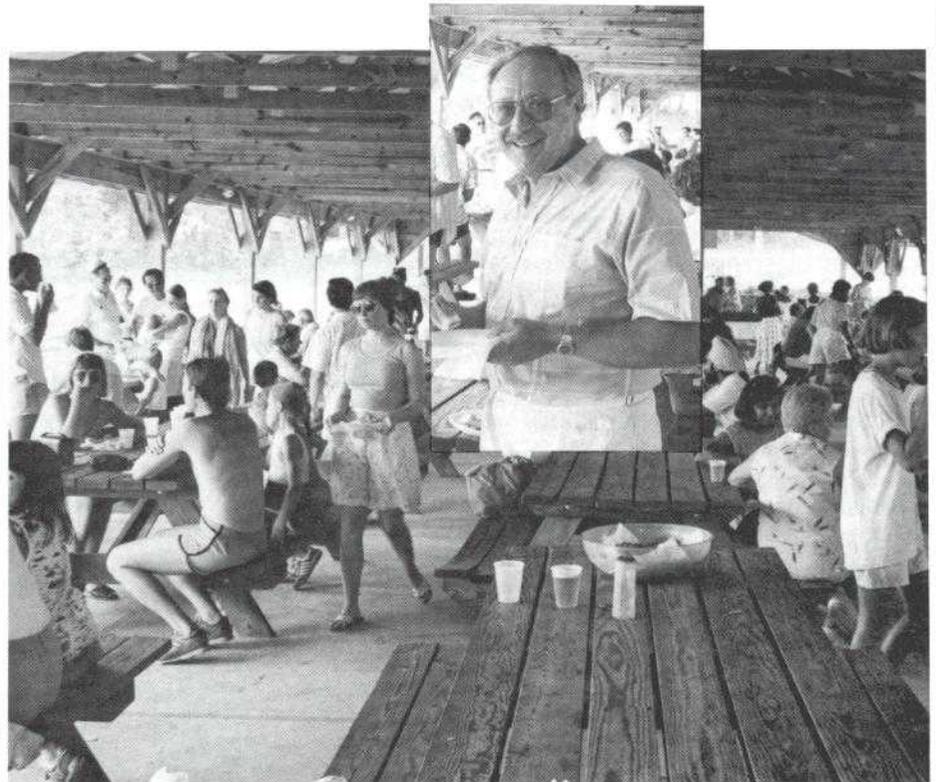


PHOTO: CARROLL HAUGH

Savings and Profit-Sharing Rates of Return Announced by COMSAT

Employees who have invested their savings and profit-sharing funds in Fund B, the equity fund, realized a return of approximately 29 percent during the first half of 1987. Fund B is invested in Vanguard Trustees' Commingled Equity Fund, U.S. Portfolio, a mutual fund listed in financial pages under the Vanguard Group as TCUSA or TCFusa.

Those with funds designated for Fund A, a guaranteed interest fund, realized an approximate 5 percent return for the first six

months. Although the previously guaranteed rate of return of 10.1 percent expired at the end of 1986, this fund is expected to earn between 7.5 and 10.1 percent in 1987. Fund A guarantees the principal amount invested.

Fund C, which is invested in COMSAT stock, registered a 3 percent rate of return.

Comparative information on the performance of the three funds for the past four years is available from the Benefits Department.



Charged Up Over Batteries

Jim Dunlop and Today's State-of-the-Art Battery

On their own, batteries don't tend to grab our attention—at least until the car won't start or the flashlight won't work. And then we usually don't have fond thoughts for them.

But the people who work at COMSAT Labs' Energy Conversion and Storage Department have a different outlook on batteries, a blend of curiosity, understanding and appreciation. In fact, batteries—specifically those used aboard satellites—are the focus of their careers.

Their work has placed COMSAT in the forefront among those concerned with building and operating satellites. Today, thanks largely to the efforts of department manager Jim Dunlop and his staff, COMSAT can claim honors for today's state-of-the-art battery, the one used on every INTELSAT satellite launched since 1983. The nickel hydrogen battery, as it is called, offers both longer life and lighter weight than its forerunner, the nickel cadmium battery.

Satellites are powered primarily by solar energy. But batteries are essential during periods each year when the satellite falls into the earth's shadow.

The Energy Conversion and Storage Department's experience with virtually every type of satellite battery has made it a trusted resource within the industry. Today, when plans to build a satellite are being laid, or when construction is under way, the department is often called for consultation and advice.

People come to COMSAT for consulting support services because "we're good at what we do," Dunlop says. "We've developed a lot of analysis procedures and gained a lot of experience over the years on aerospace batteries. Only a few other labs in the world have our background and experience. Starting with INTELSAT V in 1983, almost all of the telecommunications satellites have been launched with nickel hydrogen batteries aboard. Today, we're involved with virtually every satellite program on a consulting basis."

Dunlop, a 20-year employee of COMSAT who today manages a staff of nine, was program manager on the development of the nickel hydrogen battery, which made

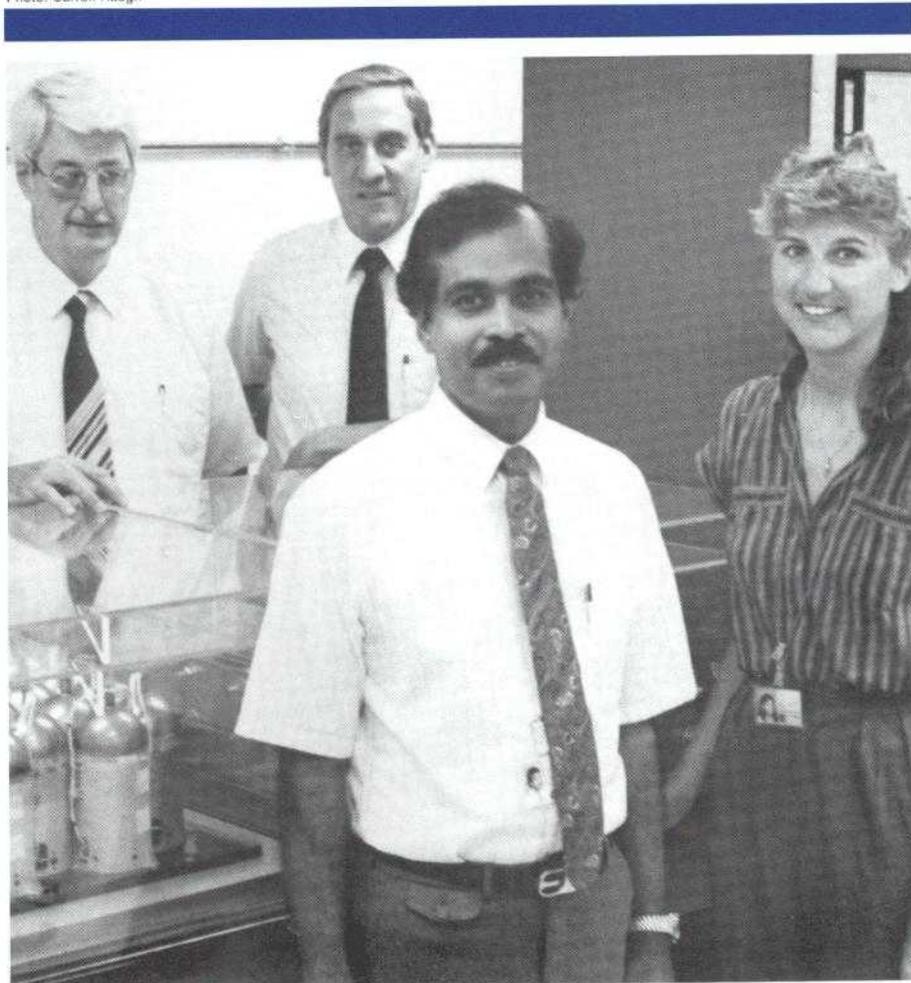
its debut after about a decade of work. The search for a new satellite battery grew out of frustration with the ones used aboard earlier satellites. On the INTELSAT III and IV satellites, batteries were one of the major lifetime limiting subsystems. The nickel hydrogen battery promises to lengthen satellite life to 15 or more years, Dunlop said.

Certainly, for Dunlop and the others who worked on the nickel hydrogen battery,

being part of such a significant development effort was a career highlight. And recently COMSAT has been involved in the latest applications of nickel hydrogen technology. COMSAT and Johnson Controls, Inc. are at work to develop new ways to use it on earth, as well as in space.

Maybe the flashlight you own in the future will be powered by technology developed by COMSAT Labs and Dunlop. Maybe it will work—all the time, every time.

Photo: Carroll Haugh



All charged up: (L to R, front) Hari Vaidyanathan, Kathy Burch; (rear) Jim Dunlop, Marty Earl.

HARI VAIDYANATHAN: Mysteries of Battery Storage and Design

Recent delays in getting satellites into space have added to the list of nagging questions that Hari Vaidyanathan puzzles over in his laboratory each day. Vaidyanathan, senior technical staff member in the Energy Conversion and Storage Department, normally devotes most of his time to research into new designs for batteries on future INTELSAT satellites.

But since the launch crisis grounded many U.S. satellites, Vaidyanathan has spent hours grappling with how satellite batteries might be stored over several years—with their original capacity preserved. The goal of his work: to help satellite owners, with birds awaiting launch, avoid having to replace batteries purchased several years ago. Re-equipping a satellite with necessary batteries can cost upwards of \$1 million.

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Meanwhile, Vaidyanathan continues to look into the future of satellite batteries, exploring new designs that might increase battery lives, decrease their weight and improve their efficiency.

Among his experiments are tests to determine if nickel hydrogen batteries can be used over long periods of time for battery-powered electrical propulsion—a north-south stationkeeping technique which would require satellite batteries to work daily, instead of during the 88 or so days a year they operate currently.

When the INTELSAT VIs begin to be launched and designs for the INTELSAT VIIs are finalized, Vaidyanathan's technical "fingerprints" are sure to be on their batteries.

MARTY EARL: Predicting Battery Life

About this time of year, and again in the spring, satellites orbiting 22,300 miles overhead fall into the earth's shadow for a few minutes each day. With the sun blocked from view, a satellite's primary energy source is cut off. If the satellite is to continue operating, it must rely on a secondary energy source, its on-board batteries.

The batteries are operated under conditions similar to those in space.

With so much riding on the reliability of the batteries, it's no surprise that the Energy Conversion and Storage Department is concerned about how long they will last in space. In fact, the department goes to great lengths to predict battery life.

The lab that Marty Earl, senior technical staff member, presides over is equipped to enable COMSAT to foretell the future of batteries on INTELSAT satellites already in space and those slated for launch in the future. Around the lab, encased in thick plexiglass covers, stand batteries from INTELSAT IV, V and VI satellites.

Inside the covers, the batteries are operated under conditions similar to those in space. Each fall and spring they follow the same cycles as their "twins" in space, charging and discharging about 100 times during the two equinox periods. Battery temperatures are held to about 10 degrees centigrade inside the chambers. Only the differing pull of gravity between space and earth, and the vacuum of space, are not duplicated.

The lab begins its simulation testing a year or two before the satellite is launched, said Earl. Being ahead helps predict what might be expected in space and plan for any changes in advance. With operating batteries on hand, the scientists have something to analyze on the ground if problems occur.

Earl's old-timer in the lab is a battery from an INTELSAT IV satellite, clicking

along now for 12 years. Despite his close work with the batteries, Earl's perspective has remained entirely sane. "No," he asserts, "I don't think of them as my children."

KATHY BURCH: Battery Analyst

As a technician in the Energy Conversion and Storage Department, Kathy Burch doesn't often use her college geology major. But the equipment she uses now to analyze satellite batteries is not unlike that she used in geology to examine rocks. Her know-how with the equipment helped land the job.

She's not sorry her career steered clear of rocks. Chemistry, she said, was her first love—and her work brings new lessons in electrochemistry each day.

"It's a lot of fun."

Those lessons come as Burch analyzes samples of cells that someday may end up in batteries powering INTELSAT, British Aerospace, Aerospatiale, MCI and other satellites. Her tests provide the data for recommendations to satellite owners on whether they should or should not use certain cells in batteries on their spacecraft. Obviously, satellite owners want to make sure batteries are going to perform reliably for many years.

When they first arrive in her laboratory, cells are weighed and checked over, then placed in a machine which electrochemically cycles them through several 24-hour charge and discharge periods. Data from these tests help Burch determine how much capacity the cell contains—and if it's performing up to par.

Burch then performs "destructive physical analysis" on a representative cell, which means she tears it apart and analyzes every component—separators, electrodes, electrolyte. Her analysis determines how much capacity the electrodes will produce and if there are impurities that might limit the cell's performance.

"It's a lot of fun," Burch says. Apparently her work with batteries has been so much fun that Burch has decided to get serious about her love for chemistry and pursue a master's degree.

Earl Main: Man of Discipline—And Steel Muscles

“If you can fill the unforgiving minute with sixty seconds of distance run, then yours is the earth and everything that’s in it, and—which is more—you’ll be a man my son.”

—Rudyard Kipling

Kipling wrote it, but Clarksburg’s Earl Main lives the part. If you want success in life, you have to run.

The way Main describes it, the Heart of Maryland Triathlon last month in Frederick, Md., was a test “to see what my body could take.”

But when he tells the story of his 1987 campaign to get in shape, it’s clear that the Triathlon hardly matched up to one of Main’s everyday workouts. The Triathlon’s quarter-mile swim, 10-mile bike ride and two-mile run took Main over an hour, including the time it took to recover from a crash in the bike race. But as his colleagues at COMSAT Labs know, an hour of exercise is only about a third of Main’s daily routine.

Since January, Main, 37, has been a man of discipline. Up mornings at 5 a.m. and at the Labs’ Fitness Center by 5:30, Main does speed workouts and distance running until about 7:30. He’s back into

“I’ve asked around COMSAT, but I haven’t found any volunteers to go with me,”

his exercise togs again at lunch—working out in the fitness center, running or bicycling. “Usually I take evenings off,” he admits. Between exercise sessions, Main is assistant staff member in COMSAT Labs’ Stability, Telemetry and Command Department. His work has included monitoring satellite construction, exploring artificial intelligence for controlling satellites and satellite simulation.

Main’s madness is driven by a goal—to better his time in running the J.F. Kennedy Ultramarathon—coming up the third Saturday in November. This, Main said,



will be the 10th year in which he has run the 50.2 mile race in western Maryland. He is looking to finish the race in 7½ hours. In previous years, his finishing time has ranged from 8 to 13 hours. (Editor’s note: The U.S. record for the J.F.K. Ultramarathon is five hours, 50 minutes.)

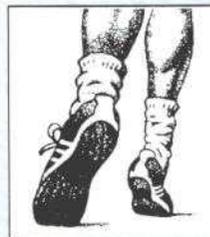
Even in excellent condition, Main knows the run will be grueling. The first three miles are up the South Mountains near Boonsboro, Md., the next 14 are on the Appalachian Trail, the following 26 are on the C&O Canal and the final eight are on back roads. “I’ve asked around COMSAT, but I haven’t found any volunteers to go with me,” Main says.

“I use exercise to remind myself that life is not as bad as I might think it is.”

Main’s motivation for getting into shape comes from within, he says. “I want to see if I can do it.”

But beyond that, he says, he also likes to remind himself that life isn’t as hard as we often let ourselves believe. “After 50 miles, I feel tired and beat. But afterwards, I can go and get in my car. Our ancestors, the pioneers, couldn’t do that. I use exercise to remind myself that life is not as bad as I might think it is.”

Does Main ever dream of bigger contests, such as the Ironman Triathlon in Hawaii? “Sure, if COMSAT wants to send me, I’d get in shape for it. I’ll do anything that’s impossible,” he says.



Calling All COMSAT Runners

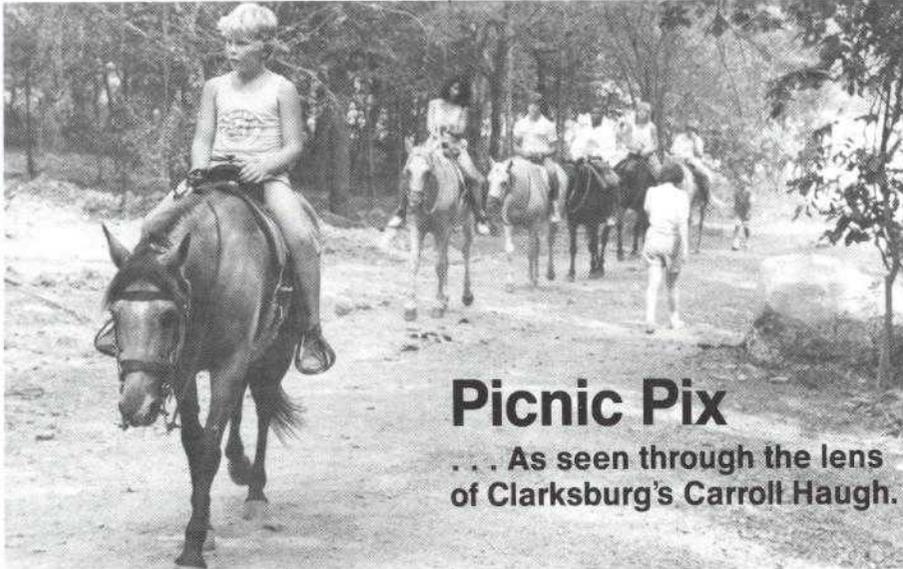
The COMSAT Fitness Centers are calling all runners to join the COMSAT team in the Footlocker 8K Partners Road Race on September 26 at West Potomac Park.

For this event, male and female runners are paired and their times are combined to determine the winner. Runners will be grouped by age as well.

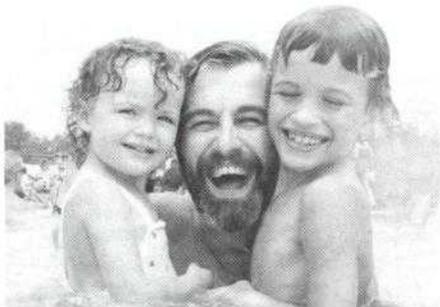
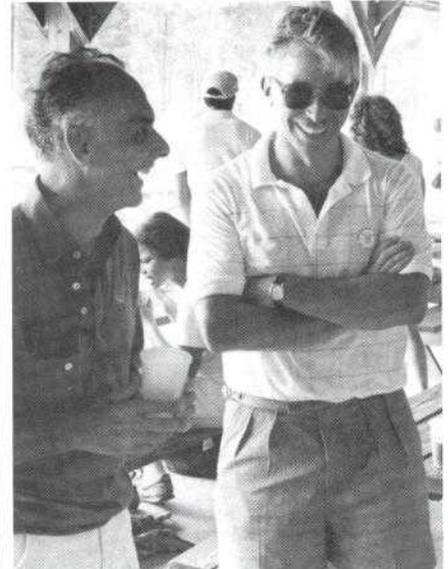
Participants will have a chance to win a trip to the Bahamas in a drawing.

According to Michelle Tennery of the Plaza Fitness Center, this is the first year that this event has had a corporate class. She encourages company runners to participate so that COMSAT can make a good showing.

If you’re interested, contact Tennery (x6700) or Peter Brzybinski (x5135).



Picnic Pix
... As seen through the lens of Clarksburg's Carroll Haugh.



New Faces

CLARKSBURG

W. David Ayers, Senior Business Analyst
World Systems Division

Diane L. Bruchey, Secretary
Information Services Division

Karl L. Buschmann, New Business Analyst
Maritime Services

John R. Durmick, Manager, Contracts/Subcontracts
World Systems Division

Tony G. Hazelwood, Computer Operator Trainee
Information Systems Division

David J. Levy, Senior Business Analyst
World Systems Division

Nancy R. Nolting, Telecommunications Associate
World Systems Division

Sharon Paynter, Senior Accountant
World Systems

Srinivas Pyda, Member of Technical Staff
COMSAT Labs

Gerald B. Shipley, Sales Director, International
World Systems Division

Wayne A. Shore, New Business Analyst
World Systems Division

Karen Swift, Staff Accountant
World Systems Division

PLAZA

Kevin V. Williams, Operating Technicians
COMSAT International

MEMPHIS

Margaret M. Holmes, Secretary II
COMSAT Video Enterprises

Patricia B. Tucker, Secretary
COMSAT Video Enterprises

KOSRAE, MICRONESIA

Abraham C. Phillip, Technician I
COMSAT International

Promotions

CLARKSBURG

Stephen N. Carroll, Vice President
Intelsat Satellite Services

Diane Colberg, Senior Contracts Administrator
Information Systems Division

Paula W. Epifano, Documentation and Information Spec.
Maritime Services

Peggy A. Hvidsdas, Staffing Assistant
Corporate Staff

John Kopinski, Manager, Sales Support
World Systems Division

Joann Lee, Administrative Secretary
Maritime Services

Paulette McClees, Executive Secretary
World Systems Division

Karen Marie Nash, Executive Secretary
World Systems Division

Charles B. Roberts, Production Planner
COMSAT Labs

Geraldean Robinson, Executive Secretary
Maritime Services

Ruth Sigler, General Attorney II
World Systems Division

David E. Walton, MTS Communications Engineer
Maritime Services

Janice A. Wilson, Executive Secretary
Maritime Services

PLAZA

John A. Ansaldo, Account Manager
COMSAT International

Paul Chaconas, Corporate Development Consultant
Corporate Staff

David R. Guggenheim, Manager, Network Engineering
Information Systems Division

Leon C. Hill, Office Services Clerk II
Corporate Staff

Rebecca L. Hilsheimer, Executive Secretary
Information Systems Division

Adria C. Pifer, Consultant/Auditor
Corporate Staff

Yvonne T. Robertson, Security Associate
Corporate Staff

Brenda S. Smith, Staff Accountant
Corporate Staff

Pamela M. Snyder, Administrative Secretary
Maritime Services

Suzanne L. Tobin, Benefits and Comp. Consultant
Corporate Staff

Gregory W. Updike, Budget Analyst
COMSAT International

Richard M. Vaden, Administrator, Prod., Svcs. & Securities
Information Resource Management

Doreen L. Woodland, Executive Staff Secretary
Information Systems Division

Kion Yee Yap, Accountant in Charge
Corporate Staff

MERRIFIELD

Robert M. Denson, Product Support Engineer
COMSAT Technology Products

Addie B. Flanigan, Senior Assembler
COMSAT Technology Products

Karl Eric Schramm, Staff Accountant
COMSAT Technology Products

Seyed M. Shakeri, Test Technician
COMSAT Technology Products

Cheng-Lan Tsai, Systems Test Specialist
COMSAT Technology Products

Thong Xaysana, Assembler
COMSAT Technology Products

ETAM

Jay L. Bolyard, Technician II
COMSAT International

Randy M. Hollier, Senior Technician
COMSAT International