COMSAT NEWS

July 1971

COMSAT Cuts Atlantic Rates 25%, FCC Denies TAT-6 Cable Proposal

A major COMSAT rate reduction of 25 percent went into effect July 1 for leased voice-grade channels between the U. S. and many overseas points in the Atlantic Region.

COMSAT told the Federal Communications Commission that it would apply for a second-step reduction in its rates at the beginning of next year, affecting both Atlantic and Pacific areas, provided traffic growth substantially meets increases forecast by the carriers.

The rate cut followed a series of events involving COMSAT, the carriers and the FCC, and a major policy statement by the FCC concerning the future mix of cable and satellite facilities for overseas communications.

COMSAT's 25 percent rate reductions apply to channels between the U.S. Mainland and Central America in the Atlantic, and between the U.S. Mainland and Hawaii in the Pacific area. + AFRICA, Europe, Middle East

In a filing on June 25, COMSAT said the first-step rate cut would result in savings to carriers, who lease satellite channels from COMSAT, of approximately $6 million for the remaining six months of this year and more than double that amount for the full 12 months of next year.

Earlier Reduction

The rate reduction was the second one made by COMSAT in the Atlantic for leased channels. A smaller cut was made in 1967 following the inauguration of full-time 24-hour satellite service. (Rates for TV service via satellite in the Atlantic have been substantially reduced twice in the past by COMSAT.)

Under the reduction, COMSAT rates for the routes specified were reduced from $3,800 per month to $2,850 per month, or an annual per-channel saving of $11,400. In addition, NASA will realize a saving of about $150,000 for the period July 1 through September 30 under an existing NASA-COMSAT contract.

The corporation said a further reduction of 12.5 percent would be made in its rates for the same Atlantic points "if the carriers realize at least 90 percent of their present forecasts" for increased traffic. COMSAT also said it would make a 20 percent cut at that time on channels between the U. S. Mainland and Central America in the Atlantic, and between the U. S. Mainland and Hawaii in the Pacific area.

Conference Held

On June 17 the FCC held an informal conference to discuss a number of issues involved in its cable-satellite inquiry, specifically, the need for a new 845-circuit transatlantic cable called TAT-6. In this connection, COMSAT President Joseph V. Charyk outlined COMSAT's views on rate reductions in two memoranda transmitted to FCC Chairman Dean Burch prior to the conference.

Speakers in favor of TAT-6 included Richard R. Hough, President-Long Lines Department; Ted Westfall, Executive Vice President of ITT, and Edward Gallagher, President of WUI.

Dr. Charyk questioned whether the TAT-6 is needed at this time and urged that the carriers be required to put greater volumes of traffic on satellites.

"We submit," he said, "that if the objectives of the Communications Satellite Act of 1962 are to be realized or even seriously pursued, the Commission should put its authority behind a policy of expanding the traffic volume on satellites and passing the resultant economies on to the rate paying public. The most opportune time to do that is now, when major improvements in the satellite traffic would have a very dramatic effect in reducing unit costs."

A week later the FCC issued a Statement of Policy in which, among other things, it declined to approve AT&T's application for construction of the TAT-6 cable.

At the same time, however, the FCC said it would accept an application by the carriers for a more advanced cable having an estimated capacity of 3,500 circuits, which AT&T indicated could be ready for service by 1976.

The policy statement said the FCC expected COMSAT to file rate reductions to be effective no later than July 1. In compliance with that policy, COMSAT filed its rate cuts.

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Assistant Vice President
for Public Information

On the Cover

Nyla, 14 months old, is held up by her father, Hasin Hashmi, Finance, for an exciting pony ride at the annual CEA picnic at Smokey Glen Farm, Gaithersburg, Md., on June 13. More photos on Page 4.

In explaining its reasoning, the FCC said, among other things:

". . . we are of the opinion that we should not accept the AT&T proposal for the SF type 845-circuit (TAT-6) cable.

"Instead, we feel that the criteria set forth above indicate that requirements for service across the Atlantic during the first half of this decade can best be met by existing cable and satellite facilities supplemented by two additional INTELSAT IV satellites in orbit, one to be a spare and one operational to handle projected traffic growth, already planned for this time frame.

"A high capacity SG (3,500 circuit) type cable available for service by or before 1976 would be needed so as to supplement then existing cable and satellite facilities to accommodate projected growth in circuit requirements, and to provide the diversity and redundancy needed to assure continuity of service. Accordingly, we are hereby advising the carriers of our readiness to grant now an application for a TAT-6 SG type 3,500 circuits cable. We expect the carriers to file an application for such a cable promptly and to install and make it operational as quickly as possible. . .

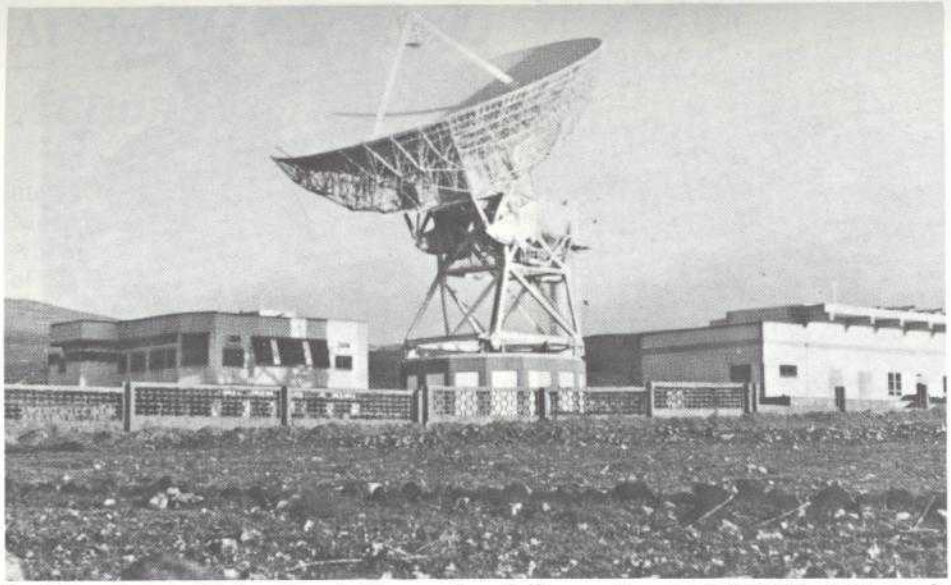
"We believe that this Statement of Policy affords the latitude and flexibility which our (U.S.) carriers require to plan, in association with their foreign correspondents, the transatlantic facilities for the balance of this decade."

New First Aid Class Introduced at Labs

A completely new method of teaching Red Cross first aid has been introduced at the Labs. Known as the "multimedia" technique, it combines three major elements in a fresh approach to teaching fist aid.

Betty Mowen, the Labs nurse and course instructor, explained that the 8-hour session emphasizes that demonstration by film and learning by work book, combined with practice sessions, make the technique the most effective means of teaching first aid yet devised by the Red Cross.

The initial response to this teaching method has been so great that labs employees Bill Magers and Harold Lieberman have completed Red Cross instructor course and are ready to help teach the next class, scheduled for this fall.



Spain's new standard earth station on Grand Canary has contributed to increase in global system TV volume.

Satellite TV Transmissions Increase Sharply as a Result of New Services

In the first six months of 1971, the number of INTELSAT satellite television transmissions has risen to between 140 and 150 a month, compared to about 100 a month last year.

The sharp rise is due largely to two new regularly-scheduled services. Since the inauguration of the Aguimes standard earth station in the Canary Islands, Spanish Television transmits three, and sometimes four, half-hour satellite television news and sports programs a day, seven days a week, to the Spanish television station on the Canary Islands via Buitrago.

According to the Spanish administration, 547 hours of television will be transmitted between Spain and the Canary Islands each year in 1971 and 1972.

Spain is also participating in the Iberoamerican News Exchange which began earlier this year and is presently scheduled daily, Monday through Friday.

Normally, about 10 minutes of news material is transmitted via Buitrago to Lurin (Peru), Choconta (Colombia), Tangua (Brazil), and Camatagua (Venezuela), for the broadcasters in those countries.

Also, there frequently is a transmission scheduled from one of the participating South American countries to Spain and the other South American participants.

The Iberoamerican News Exchange began as an experiment earlier this year, but has proved so successful that it is now scheduled through February, 1972. The transmissions for the Canary Islands and the Iberoamerican News Exchanges are expected to be the forerunners of a number of similar regularly-scheduled transmissions for news and sports syndication and program services.

In the Pacific, CBS now has a syndication service which provides 24 satellite television feeds a year to a number of subscribers. These are not regularly scheduled, but are determined by the importance of news.

Emblem Competition Open to All Employees

All COMSAT employees and members of their immediate families are eligible to participate in a contest to design a corporation emblem which may be used on a COMSAT flag, arm patches or decals.

Final judging will be by majority vote of the employees after a panel screens the entries. First prize will be $50 in Credit Union shares; second prize will be $25 in shares, and third prize will be $10 in shares.

Entries should be submitted to Jim Tallon, Room 5107, Headquarters.

Participants may submit as many entries as they wish. Entries larger than 10 inches in size or smaller than two inches will not be accepted. COMSAT reserves the right to use or not to use the designs submitted, and all entries become the property of the corporation.

The contest ends on September 30, 1971.

Metzger Gives Paper At Meeting in Israel

The Ministry of Communications of Israel sponsored a conference on ground stations for satellite communication in Tel Aviv, May 24-25, 1971. Israel presented plans for, and reviewed construction progress of, its new earth station which is scheduled to begin service with an INTELSAT IV in May 1972. A number of experts from other countries also appeared on the program to discuss various aspects of communications satellite systems and equipment.

Sidney Metzger, Assistant Vice President and Chief Engineer, delivered a paper on "Technical Aspects of the INTELSAT Global Satellite System".

Other COMSAT representatives were Dr. Burton Edelson, assistant director of COMSAT Labs, who spoke on "SPADE System Progress and Applications"; Miles Merians of the Geneva office, who spoke on various international organizational aspects of INTELSAT. Other speakers represented the U.K., Italy and Germany.

Sidney Metzger

Ion Thrusters

COMSAT on behalf of INTELSAT has awarded a contract to Hughes Aircraft Company to fabricate, test, and deliver a mercury ion thruster system. The $24,871 contract is to be completed in four months.

Several low-thrust propulsion systems are under consideration by INTELSAT for use in future satellites. They would emit high-velocity streams of minute ionized particles to propel a spacecraft in a desired direction over a period of time.

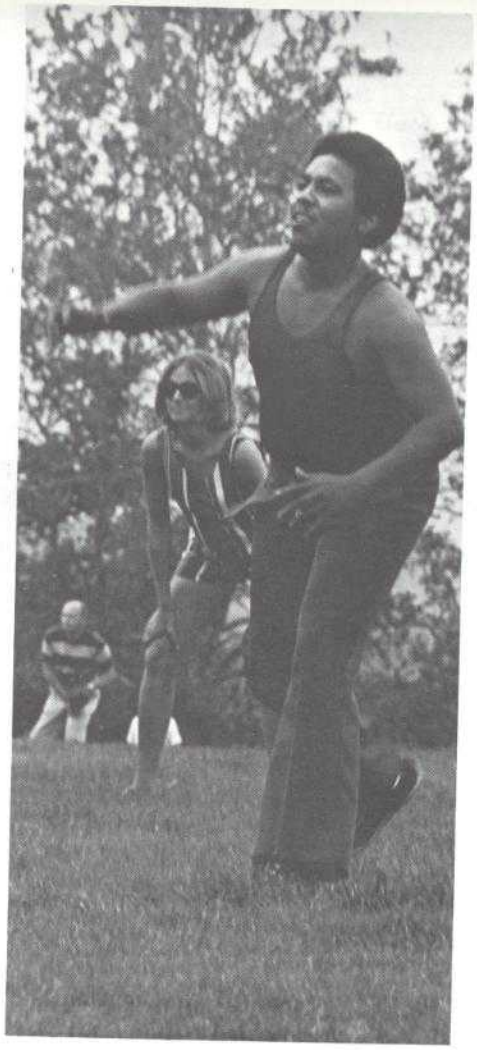
What could be better on a happy summer afternoon than a tandem pony cart ride through a meadow?

1,200 Attend Picnic

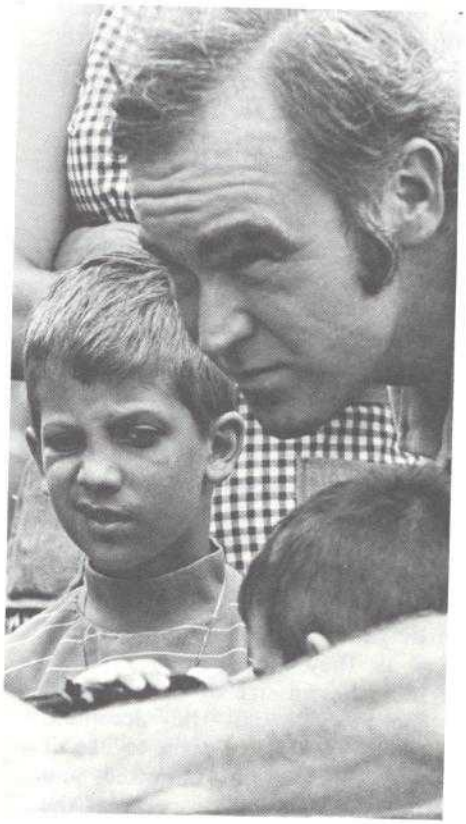
The annual CEA Picnic on Sunday, June 13, at Smokey Glen Farm, Gaithersburg, Md., was once again a huge success. Some 1,200 people attended, the largest ever for a CEA event. Good food and drinks, rides, games, dancing and music were plentiful.

As usual, the many happy children stole the show, as shown by the accompanying photographs.

Even standing in line is fun when it is for good food and exciting rides.



Softball is for the young and supple.



Bob Swensen, Technical, helped improve aim at the shooting gallery.

At 53rd Meeting

Actions of the Interim Committee

The Interim Communications Satellite Committee held its Fifty-third Meeting in Washington, May 24-28. All eighteen members representing 49 of the 79 Signatories were present.

Among its actions, the Committee:

- Authorized COMSAT as Manager to execute an amendment to the INTELSAT IV contract for engineering changes in the remaining unlaunched INTELSAT IV spacecraft at a cost of $669,000.
- Authorized COMSAT as Manager, in the event of failure of the INTELSAT III (F-3), to relocate the III (F-7) over the Indian Ocean; or, in event of a III (F-4) failure, to relocate the III (F-3) over the Pacific Ocean and the III (F-7) over the Indian Ocean. These contingency plans were adopted on the assumption that the INTELSAT IV (F-2) will continue to operate satisfactorily.
- Approved the Manager's recommendation not to exercise the option to terminate procurement of the INTELSAT IV (F-7) and (F-8) spacecraft by August 1.
- Approved a step-by-step procedure recommended by the Manager for disposition of non-flight hardware delivered to COMSAT by TRW under the INTELSAT III contract.
- Referred to the Manager and the ICSC/T a Canadian contribution de the technical compatibility of the proposed Canadian system with the existing and planned INTELSAT system.
- Granted initial approval to standard earth stations in Israel, Democratic Republic of the Congo and Argentina for access to INTELSAT III and IV satellites. Approval for access to the INTELSAT IV satellites was granted to a nonstandard station on Ascension Island. The Committee also granted formal approval to an earth station in Venezuela to operate with INTELSAT IV satellites.
- Approved the appointment of two nominees of the Japanese Signatory, Messrs. Takeshi Shoji and Atsushi Tomozawa, for terms of one year each.
- Approved the COMSAT Labs DICOM terminal for access without charge to an Atlantic Region INTELSAT IV satellite for experiments and demonstrations.
- Welcomed the accessions of the Islamic Republic of Mauritania and the Malagasy Republic, each with a quota of 0.05 percent, bringing the membership of INTELSAT to 79.
- Approved the request of Barbados for a quota of 0.05 percent. The remaining unallocated quota is 1.965 percent.
- Scheduled the Fifty-fourth Meeting to begin July 21 in Washington, D.C.

Graduate Degree

Comsat Information Officer John J. Peterson, Jr., former executive assistant to Alan B. Shepard, Jr., Chief of the Astronaut Office, recently received a master's degree in sociology from the University of Houston. For his thesis, he investigated the attitudes of newsmen toward press-judicial relationships.

At Etam

Picnic Planned For July 17 in West Virginia

By Deloris Goodwin

The first picnic of the season is set for July 17 at Camp Horseshoe Recreation Area, operated by the National Forest Service near Parsons, W. Va. The program includes softball, fishing, hamburgers, beer, and fun, fun, fun.

5-Year Awards

James Silvius, procedures and training supervisor, was awarded his 5-year emblem in May. He began working for COMSAT on May 25, 1966, at Andover. He is the first Etam employee to receive this award.

Paul Helfgott and Rupard Hobbs, operations supervisors, were next to receive 5-year awards. Both Paul and Rupe reported to work for COMSAT on the same day, June 13, 1966, but at different earth stations: Paul at Andover and Rupe at Brewster. Now, we are fortunate to have the benefit of the knowledge and experience of both at Etam.

International Visitors

Dr. and Mrs. A. Youssef, Mr. and Mrs. H. Mougllem from Syria, and A. Bakr from Saudi Arabia, were accompanied by Roman Ulans, International, on a tour of the station. Various members of the operations teams and maintenance staff explained the subsystems and related areas to these

(See ETAM, Page 6.)

Developed by Labs

Andover Monitoring System Installed

Antenna tracking faults, switching of low-noise receivers and high-power amplifiers, faults in earth station multiplexing and demultiplexing equipment can all cause interruptions in satellite communications channels.

While such transmission interruptions in satellite circuits during any one month and in any one earth station generally account for less than a few tenths of one percent of the total time, efforts are constantly being made to reduce the numbers and durations of such transmission outages.

While many of these interruptions last only a few seconds or even less than one second, present manual recording methods are inaccurate or incapable for identifying the source of such short interruptions and recording their precise duration.

The communications processing laboratory at COMSAT Labs, under the management of J. G. Puente, has been investigating this problem. They have now developed a system for automatic monitoring and recording of transmission interruptions. This system was installed at the Andover earth station in May 1971.

The system was developed under the supervision of Helmo Raag, head of the terrestrial interface techniques section, and involves the use of a Varian 520i minicomputer and appropriate detectors and interface circuitry for earth station equipment. Initially about 50 different points in the Andover earth station are being monitored, but the system can be expanded to monitor up to 512 points. The data is recorded on punched paper tape and is further processed by the IBM 360 computer at COMSAT Laboratories.

The requirements for the system were established, and the selection of the initially monitored points was done in cooperation with U. S. systems management (Operations) and systems engineering division (Technical) personnel. S. G. Embrey, manager of the computer division scientific applications department, and T. J. Celi, manager of computer applications branch, directed the required software development for both the IBM 360 and the Varian 520i minicomputer.

Andy Thomson paints Etam Water tank with a long-handled roller.

Richard Dean, Etam utility man, mows the grass in a chic hat.

By 7 Employees

Labs Soldering Course Completed

As part of its ATS-F contract with NASA, COMSAT Laboratories is required to certify or recertify technicians who will be performing soldering operations on satellite flight hardware.

A group of seven technicians recently completed the full 40-hour course and were duly certified by F. Pyott, who is a qualified instructor in this field, employed by Pace, Inc. In addition to the full 40-hour course, three Labs employees, Vivian Mincey, Viola Duckett and Grace Ford, were recertified since they had taken the full course prior to working at the Labs.

Certification requires a thorough understanding, as well as manual ability, of the soldering operations. Several types of connectors are used for model purposes as well as different soldering techniques with those connectors.

It is expected that this Labs group will perform the hundreds of soldering connections required on the ATS-F transponders.

COMSAT Labs technicians Viola Duckett, Grace Ford and Vivian Mincey (left to right) brush up on soldering techniques with Joe Molz before being recertified.

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visitors. They joined us for our Wednesday hamburger cookout.

Two Central American engineers, O. Santizo, Guatemala, and A. Wu-Flores, Honduras, were accompanied by George Hickmott, International, on a recent tour of the station.

Egyptian visitors Dr. M. Zahran, A. Salam and families, visited the station in June. Dr. Zahran was the delegate from the United Arab Republic to the INTELSAT Conference.

Potpourri

Don Gaston is moonlighting by raising chickens and selling eggs after hours to employees at the station. We wonder how he can see to gather the eggs by the light of the moon.

Robert Leard, Jr., son of Mr. and Mrs. Robert Leard, Sr. deserves some worthy mention also. Robert boosted Don's chicken business by building an incubator and hatching some starters.

Evelyn Rector, wife of Lynn Rector, senior technician, was graduated with honors from West Virginia University. She received a degree in medical technology.

John Carroll, son of Mr. and Mrs. William Carroll, graduated from Kingwood High School in June. He is enrolled in West Virginia University where he will major in journalism.

Mr. and Mrs. Victor Molek became the proud parents of a son on June 2. The baby is named Ronald and is the Molek's third child.

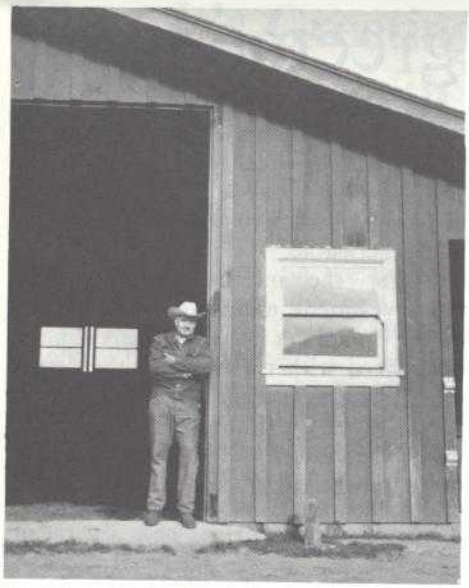
Roger Parsons, station engineer, has assumed his old job again this summer as manager of a Little League baseball team in Oakland, Maryland.

Sam St. Clair recently purchased a piece of property in Arthurdale, near his present home. Sam is in the process of clearing the area and setting up a modular home. A portion of this land, however, will be used as a landing strip for Sam's airplane, a Citabria.

Andy Thomson is now operating on the higher frequencies with an SB-102 and SB-220 combination and a tri-band cubical quad antenna.

A Good Day for Baseball, But—

Some employees recently traveled by chartered bus to Three Rivers Stadium in Pittsburgh to see the game between the New York Mets and the Pittsburgh Pirates. The trip was most enjoyable, except for the "die hard" Pittsburgh fans. The Pirates were clobbered by the Mets.



Robbie Robinson looks out over his Cachagua Valley spread.

A Visit to Sky Ranch

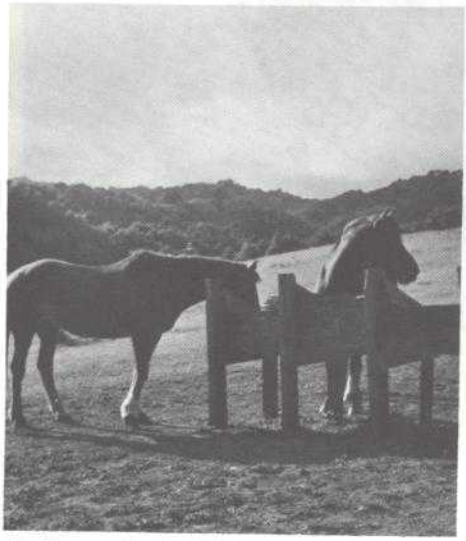
By M. Lee Dorsey

A visit to "Sky Ranch", located in the Cachagua Valley and operated by Walter D. "Robbie" Robinson, facilities engineer, was very informative as to how one of our Jamesburg staff spends his time away from the station.

The Sky Ranch is a working ranch, with cattle grazing on some of the 624 acres. There are also horses, some chickens and many rabbits.

Upon entering Sky Ranch, the beauty of the lovely old oak trees that line the road to the ranch house and the rolling hills beyond is really a serene sight. One can readily understand why Robbie enjoys living there.

Outside the ranch house, Robbie tills his vegetable garden. Like most ranchers in the area, he grows his own fresh vegetables. But Robbie feels sometimes that he plants more for the deer than for himself. The deer love to pay nightly visits to his garden.



Robinson feeds his livestock; the deer help themselves.

Jamesburg to Take Part in Tests For Unattended Antarctic Station

By M. Lee Dorsey

Michael Olsen of Stanford University visited Jamesburg to coordinate plans for testing an unattended Antarctic meteorological station being built by Stanford Center for Radar Astronomy. This small station is to use the Pacific INTELSAT III or IV for tests via Jamesburg in January 1972.

This experiment is a project of the National Science Foundation. Jamesburg is pleased to participate in these tests, which could lead to use of satellite communications for unattended stations at many remote locations.

Vacation Time Again

Station Manager John Scroggs and family will be off to England to visit the Scroggs' daughter and son-in-law who are living in Kew, Surrey, near London. While abroad, the Scroggses plan to tour England, Wales and Scotland.

Patty Blatnik and family plan to go to Lake Tahoe and combine the vacation with a family reunion.

Jack Ramey and family plan a fishing and hunting trip to Oregon.

Jim Harding and wife, Maudie, left for the Dakotas and Wisconsin.

Bob French and family plan to spend their vacation in Florida, visiting the family.

Jack Inman and family plan to drive to Tennessee and visit their family.

Personnel Notes

Kristine Ford, daughter of George Ford, technician, graduated from Carmel High School and will attend the Monterey Peninsula College.

Ruth Jeter, daughter of Vic Jeter, operations supervisor, will graduate from Carmel Middle School and will attend Carmel High School.

Having graduated tenth in her class at North Salinas High School, Susan Jones, daughter of Earl Jones, senior technician, plans to attend the University of New Mexico School of Mines and Technology. She is enrolled in the summer session honors program.

Darlene Inman, oldest daughter of Jack Inman, was married in May to Darrell King in a ceremony at the Inman home.

Senior Technician Don Tucker and family have moved from the Cachagua Valley to the Carmel Valley Village. Don and Eunice have a youngster who will attend school in the fall, and Don felt the bus ride was too long for so young a child.

Jamesburg employees again contributed blood to the Red Cross Bloodmobile, adding 10 more pints of blood to the blood bank account for personnel employed at this station. We now have a credit of 23 pints.

A warm welcome to a new employee, Peter Roberts, utility man, who was previously employed by Jamesburg as a temporary employee. He is now a permanent member of our staff.

Peter is an interesting individual, born in Newcastle, England. He served in the British Royal Army Service Corps during World War II, spending most of the war years in Italy. Ater the war, Peter migrated to Australia, doing many interesting jobs, such as working in a whaling station at Carnarvon and a timber mill in Perth.

Later he moved to Canada where he worked in his brother-in-law's electronics store. But Peter yearned to live in the United States so he contacted his sister, who lives in Carmel Valley, and arranged for a visit.

Well. . .Peter immediately fell in love with Carmel Valley and arranged for a permanent visa. After arriving in the Valley, he worked for the Carmel Valley Outlook Newspaper as a printer's devil, then the White Oaks Theater...and on to COMSAT.

Jimmy L. Clark has been promoted to senior technician, his second promotion since coming to COMSAT.

Jack Ramey, senior technician, attended a week-long course in spectrum analyzer sweep oscillator maintenance at the Hewlett-Packard Company.

Cliff Swallow Invasion

The cliff swallows have invaded Jamesburg, mistaking it for Capistrano. That's the opinion of Jack Inman, station electronics engineer.

The birds persist in nesting in the inaccessible places on the antenna. So in an effort to discourage the swallows, Jack's crew tried experimenting with a sonic system, hoping to find a frequency that would send the birds flying. Unfortunately, they were unable to find a frequency the birds dislike.

With further research, it was learned that the swallows have basically the same audio hearing range as the human ear, so any sonic sounds that would send the birds flying also would send the station personnel flying. So we're working on another solution to the problem.

Definitive Arrangements Agreements To Open on August 20 for Signatures

The new international agreements establishing definitive arrangements for INTELSAT will open for signature at the State Department on August 20, the seventh anniversary of the opening for signature of the interim arrangements under which INTELSAT has operated thus far.

The international conference on definitive arrangements concluded its negotiations on May 21. Seventy-seven of the 79 INTELSAT members participated in the final vote of the conference. There were 73 affirmative votes, no negative votes and four abstentions.

The definitive arrangements are expected to enter into force by the end of next year; until they do, the interim arrangements remain in force.

The definitive arrangements, like the interim agreements, will consist of two separate but interrelated agreements, one among governments (referred to as Parties) and the other among telecommunications entities (referred to as Signatories) designated by their governments: for example, COMSAT in the United States.

Structural Changes

The structure of the organization, however, will undergo considerable change. Under the definitive arrangements, INTELSAT will have an Assembly of Parties, a Meeting of Signatories, a Board of Governors and an Executive Organ responsible to the Board of Governors.

The Assembly of Parties will provide a forum for governments to consider matters which are of concern to them in their sovereign capacities. The Meeting of Signatories will permit the communications entities to consider operational matters and other matters of interest to the investors in INTELSAT. Voting in both the Assembly of Parties and Meeting of Signatories will be on the basis of one member, one vote.

The Board of Governors will have, as does the present Interim Communications Satellite Committee, responsibility for the design, development, construction, establishment, operation and maintenance of the INTELSAT space segment. Representation and voting will be based upon a Signatory's investment in INTELSAT, though there will be a 40 percent limit on the vote of any one member.

Pursuant to the provisions of the Communications Satellite Act of 1962, COMSAT will continue to be the U.S. participant in INTELSAT and as such will be represented in the Board of Governors and the Meeting of Signatories.

Executive Organ

Until December 31, 1976, the Executive Organ will be headed by a Secretary General who will be responsible for administrative and financial services but no technical and operational services. Thereafter the Executive Organ will be headed by a Director General who will have responsibility for all management services.

For the first six years after entry into force of the agreements, COMSAT will provide technical and operational management services under contract. However, INTELSAT thereafter will continue to obtain technical and operational management services through contract to the maximum extent practicable.

Under the interim arrangements, the investment and ownership quotas of the members of INTELSAT have been fixed with reference to their estimated shares of international traffic at the time the interim arrangements were negotiated. As a result, at the present time they are not in line with the current use of the satellite system by the members. This situation will be corrected under the definitive arrangements, which will provide for the frequent periodic adjustments of Signatories' investment and ownership shares to insure that they properly reflect current use.

Bargellini Judges AIAA Competition

Dr. Pier L. Bargellini, senior staff scientist at COMSAT Laboratories, was one of four judges in the recent Middle Atlantic Regional Student Paper Competition of the American Institute of Aeronautics and Astronautics (AIAA). COMSAT was one of several sponsors of the conference.

Held at the Pennsylvania State University, the competition included 25 papers in theoretical and applied physics. Three graduate and three undergraduate papers won prizes.

Pritchard to Direct AIAA Session Here

W. L. Prichard, Assistant Vice President and Director, COMSAT Labs, will serve as general chairman of the American Institute of Aeronautics and Astronautics (AIAA) Communications Satellite Systems Conference to be held at the Mayflower Hotel, Washington, D. C., April 24-26, 1972.

An emphasis at the conference will be placed on total systems applications. Domestic and regional systems, as well as the INTELSAT system, will be discussed from the legal, economic and educational point of view.

Judy Elnicki Named To Shareholder Post

Judy Elnicki has been appointed as Assistant for Shareholders Relations succeeding Karen Jordan who has resigned from the corporation.

Mrs. Elnicki joined COMSAT in August 1968 as secretary to William H. Berman, Assistant Vice President and Associate General Counsel.

Earlier she was administrative assistant to the director for the Commission for Mass Media of the Society of Jesus in Washington, D.C., and a member of the Public Relations Department of the Ford Motor Company at Dearborn, Michigan.

Mrs. Elnicki

Charyk's Greetings Sent by Satellite For Congo Earth Station Dedication

Camera crews from the USIA, using the Operations Center as a backdrop, filmed remarks by COMSAT President Charyk in June on the occasion of the dedication of the new Nsele Earth Station in the Democratic Republic of the Congo.

The filmed greetings by Dr. Charyk formed a segment in a 45-minute program later televised via satellite to the Congo (Kinshasa) station on dedication day. The station is the fourth one in Africa, and the first one in Central Africa. It operates via the Atlantic INTELSAT IV satellite.

Dr. Charyk, speaking in French, extended congratulations and a welcome.

"The peoples of our two countries enjoy close ties of friendship," Charyk said. "I salute you on this occasion. We at COMSAT welcome you to the system and extend best wishes for the future."

The program included a telephone exchange between President Nixon and President Mobutu, Dr. Charyk's remarks, an interview with several astronauts at Cape Kennedy, remarks from Congo's Ambassador Ileka from Washington, filmed profiles of U.S. life and several entertainment segments. The USIA produced the program.

COMSAT made available a number of facilities for the program, including use of the Operations Center for filming, graphic materials, script-writing assistance and an INTELSAT IV satellite model for studio pictures.

Recent COMSAT Patents

COMSAT has registered a number of patents in its name as the result of work done by members of the staff. Often the patent is issued for a particular invention, in which case the inventor is given credit for the patent by having it issued in his name, while the corporation actually owns the patent and therefore retains the rights to it.

Five COMSAT patents have been issued thus far in 1971. Following is a synopsis of these patents:

Inventor	*Patent Title*	*Application*
William G. Schmidt	Probability Error Corrector and Voltage Detector	Relates to a technique at a receiver for selecting the code word corresponding to the message transmitted even if there is an error in the received message.
O. Gene Gabbard	Synchronizer for Time Division Multiple Access Satellite Communications	For use in the TDMA system to permit several transmitting stations to have simultaneous access to the satellite.
John G. Puente Richard B. McClure George D. Dill Eugene R. Cacciamani Andrew M. Walker William G. Schmidt	Local Routing Channel Sharing System and Method for Communications Via Satellite	Commonly referred to as SPADE. Relates to a PCM-FDM demand assignment satellite multiple access system in which participating earth stations in the system share a pool of channels on a demand basis.
Leonard S. Golding	Predictor for Synchronization in a TDM System	Relates to a method of varying burst transmit time in a TDMA system.
Chester J. Wolejsza	Phase Lock Loop with Tangent Function Phase Comparator	Relates to an improved tanlock phase lock loop.

170 Labs Employees Tested for Glaucoma

A glaucoma clinic was conducted for COMSAT employees at the Labs in May in cooperation with the Society for the Prevention of Blindness. Since glaucoma has been discovered in some young people, the Society recommends that all people be tested; however, it is especially important for persons over thirty and for those who have relatives with glaucoma.

Glaucoma is a disease evidenced by increased tension in the eye, which can lead to blindness if not treated. Some danger signals are:

Early morning headaches; glasses which don't help, even when new; blurry or smoky vision which clears up and then gets blurry again; pain around the eyes, especially after being in the dark as at the movies or watching TV; seeing rainbows around lights at night, and a family history of glaucoma.

Nearly 170 employees were tested. Those found to have symptoms were referred for further testing by an ophthalmologist. Follow up care is being done by the staff of the Prevention of Blindness Society.

J. Levatich Is Named To URSI Committee

Julius Levatich, manager of the propagation branch of the systems lab, has recently been elected to membership in the National Committee, Commission II, Radio and Non-ionized Media, of the International Union of Radio Science (URSI).

The national committee of URSI effects participation by U.S. radio scientists and engineers in the International Council of Scientific Union through the National Academy of Sciences—National Research Council.

Mr. Levatich has been active in the radio wave propagation work and system engineering for over 15 years.

Plessy Contract

A contract to develop experimental solid-state millimeter wave sources has been awarded to Plessy Company Ltd. by COMSAT on behalf of INTELSAT.

The best-effort contract is in two phases, development and fabrication. The fixed price for the first phase of the contract is $52,800; if the option is exercised to continue the work, the price for the second phase will be $46,320.

Tyrone Ricks is head of the staff in the print shop.

The Versatile Capabilities of COMSAT's Print Shop

If it is printing that you need, the corporation print shop at the Plaza generally can do it.

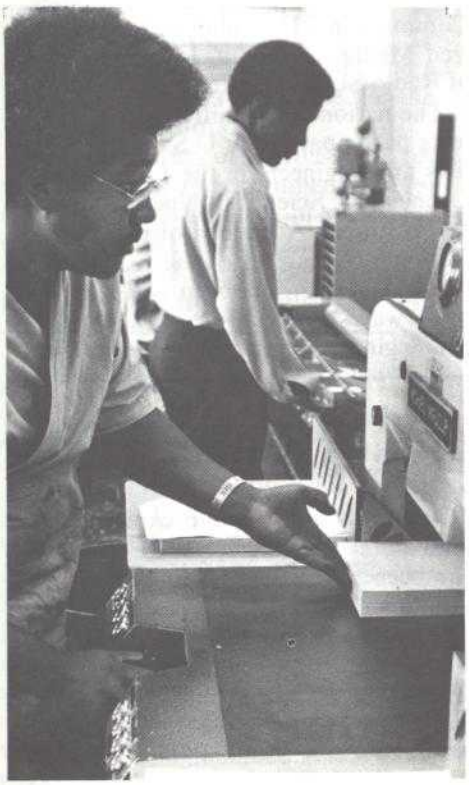
Staffed with six permanent employees, the print shop has recently streamlined its operation to take care of the corporation's increasing in-house printing requirements.

Tyrone Ricks, who came to COMSAT last fall, manages the print shop, which is equipped to print, collate and bind almost any kind of document.

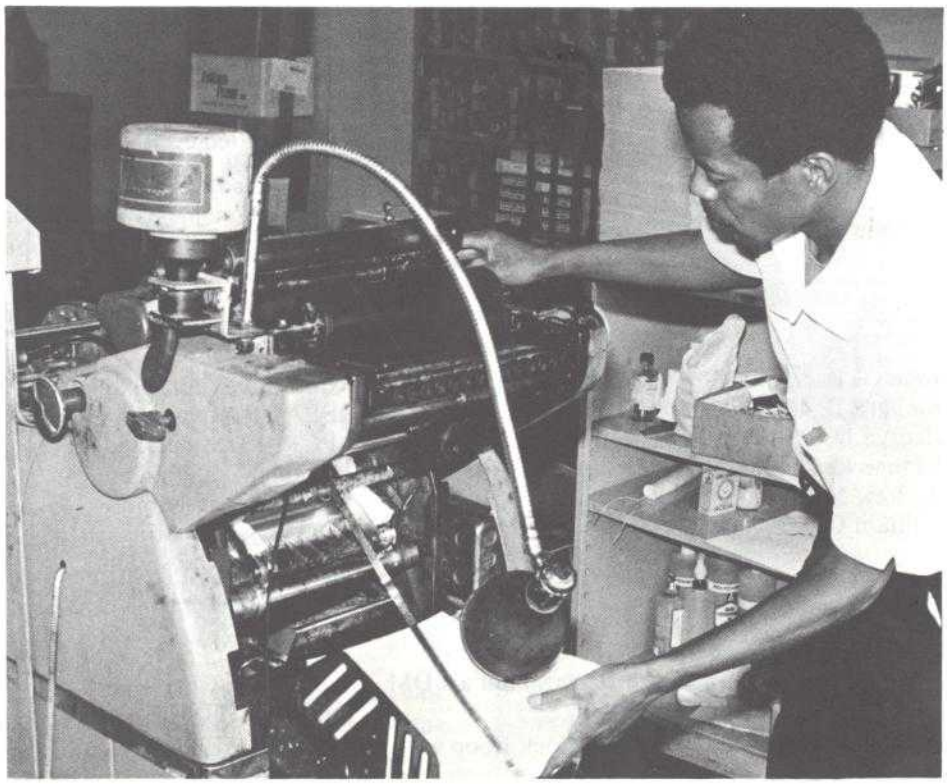
The employees in the shop are expected to know how to do each other's jobs so that they can fill in when necessary or concentrate efforts when a special job needs to be done under rush conditions.

Three offset presses can be operated at any one time, taking care of three jobs simultaneously. Equipment includes a collator, binder and Itek plate maker.

Assisting in the work of the print shop is the photo lab, where Tom Greene, cameraman, is responsible for preparing negatives, plates and Itek camera work.

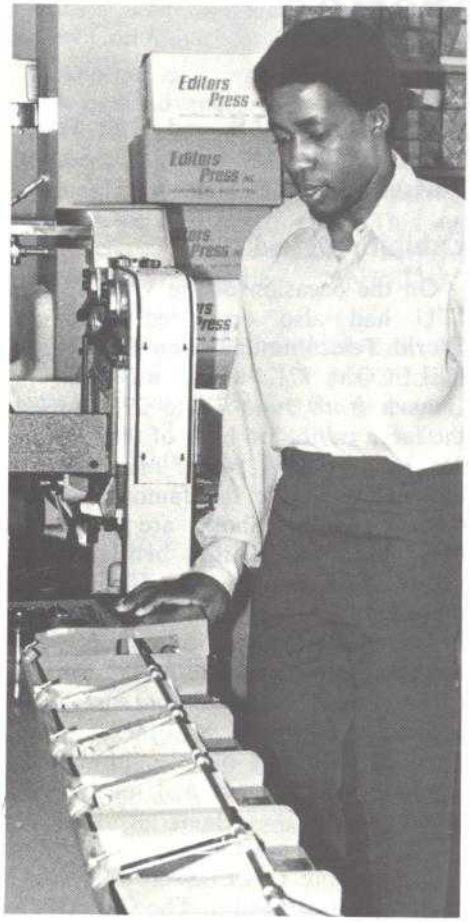


Melvin Harley is working the automatic paper cutter.



John Cotton checks job coming off the multilith.

Tom Greene, lab technician, prepares line negative for the print shop.



John Wiggins supervises the collator.

Joshua A. Hampton operates the Itek platemaker.

Ambassador Keller, Director of the United Nations and Special Agencies in Bern, Switzerland, sends a message around the world via satellite at the INTELSAT exhibit at TELECOM 71. At the left is Allan Galfund, COMSAT senior information officer, who was in charge of the exhibit.

Dr. Joseph V. Charyk, COMSAT President (center), discusses the World Administrative Radio Conference and TELECOM 71 with David Leive (left) of the COMSAT legal staff and Sidney Mellon, director of COMSAT's Geneva office, at a reception sponsored by the city of Geneva.

News From the Geneva Office

Geneva Was Communications Capital Of World During Space Conference

By Miles Merians and Erika Hofmann

International telecommunication calls for a high degree of cooperation among participants, while at the same time it promotes the understanding vital to this cooperation. It is thus a happy example of a "non-vicious" circle.

As early as 1963, an Extraordinary Administrative Radio Conference was held in order to allocate frequency bands for space communications services, whose potential was at that time only dimly appreciated by most people. That conference was an outstanding demonstration of international cooperation to enable widespread benefits to be drawn from a rapidly evolving technology. The frequency allocations agreed upon there, among other things, have enabled the INTELSAT system to grow in an orderly fashion and to provide global commercial telecommunications service today.

New Agreements Needed

But things don't stand still. Developments since 1963 have made it obvious that new agreements are required in order to serve all the radio space services contemplated for the future.

The International Telecommunication Union (ITU) therefore held a World Administrative Radio Conference for Space Telecommunications (WARC) in Geneva from June 7 to July 16, 1971.

Discussed at the conference were technical and administrative aspects of all uses of radio in space, including telecommunications, aeronautical and marine services, radioastronomy, and control and telemetry of scientific or applications missions. It also considered the problems of exclusive frequency allocations, frequency sharing, efficient use of orbital positions, and technical characteristics of transmissions.

The participants at the conference—representatives of most of the 140 countries which are members of the ITU—thus had a complex task before them. Their decisions will be vital in determining the availability and form of space radio services for the foreseeable future.

There were, incidentally, seven COMSAT representatives on the delegations for the U.S. and U.S. Territories, including Dr. Charyk as Senior Advisor to the U.S. Delegation.

Exhibition Held

On the occasion of the WARC, the ITU had also organized the first World Telecommunication Exhibition, TELECOM '71, which was held in Geneva from June 17 to 27. It used the large exhibition halls of the "Palais des Expositions", where many shows and exhibits, like the famous annual Geneva Motor Show, are normally held. This exhibition brought together PTT administrations and the representatives of many industrial firms interested in telecommunications and electronics, as well as international and national organizations which are concerned with the development of all forms of telecommunications, including space and mass communications.

There were more than 200 exhibitors, including INTELSAT which displayed its own exhibit. The COMSAT

(See INTELSAT, Page 13)

TELECOM 71 Exhibit Depicted Global System

"Expanding Satellite Pathways" was the exhibit theme used by INTELSAT at TELECOM 71, the World Telecommunications Exposition, in Geneva June 17-27.

The dominant feature of the INTELSAT exhibit was a full scale, 17-foot tall model of the 5,000-circuit INTELSAT IV satellite.

The exhibit included a "Write Around the World Via Satellite" demonstration which permitted visitors to write a message on an electrowriter and see it return almost simultaneously on an adjacent receiver after a 145,000-mile trip around the world through space and terrestrial facilities.

The three basic units of the INTELSAT exhibit were devoted to the growth and impact of the global satellite system on international communications, present and future. A large eight-square-foot systems map in four-colors, depicting direct lines of communications via satellite among earth stations in 32 countries, was the centerpiece of one of these units, and was accompanied by a two-minute narrated presentation in English, French and Spanish, entitled "The New Communications Era."

Another unit was devoted to technological advances that have emerged from INTELSAT research and development on components and techniques, and satellite development during the past seven years. This unit included a three-minute narrated presentation entitled "INTELSAT R&D Projects."

The theme of the third unit was "Decade of Growth," a projection of international traffic for the global system from 2,000 circuits in 1970 to perhaps 20,000 by 1980.

From Page 12

INTELSAT

European Office helped in the preparations for the INTELSAT Exhibit. Allan Galfund came over to Geneva from the COMSAT information office in Washington in order to supervise the erection of the INTELSAT exhibit, to make all final preparations, and to see that the exhibit ran smoothly from beginning to end. In this he was assisted by John T. Mullen of Marketing and by four charming hostesses, recruited locally.

INTELSAT Exhibit at TELECOM 71 was popular with the 70,000 visitors.

At Paumalu

5-Year COMSAT Veterans Cited

The month of June marked the completion of five years of service with COMSAT for several Paumalu employees. Daniel Geer, assistant station manager; Ken Elder, Al Prevo, and Stan Holt, shift supervisors; Ken Yamashita, TT&C supervisor; and Norman Kato, Tim Kolb, Ronald Miyasato, Eddie Mitatake, Ernest Nakamura, Tom Ota and Jack Vollrath, senior technicians, all came to COMSAT in June 1966.

These men, along with Charlie Ogata, shift supervisor, and Charles Wong, applications engineer, made up part of the 30-men crew who were initially hired to staff the Paumalu station. As the remaining "pioneers" of the station, these employees attained a milestone when they recently completed their first five years of service.

In an interview, Jack Vollrath said "tremendous changes have occurred at Paumalu: Those early days were really hectic. Power outrages and equipment failures were more frequent then and on many occasions hand cranking of the antenna was necessary."

After a few moments of recollection he added, "I remember the first INTELSAT II series satellite when synchronous orbit was not attained because of a malfunction of the apogee motor. The Hawaiian press called it 'Lani Bird,' meaning Heavenly Bird. The station did provide limited commercial service and the first live television program between Hawaii and the U.S. mainland via 'Lani Bird.'

"Then came the successful II, F-2 which began providing the first full-time service over the Pacific. Things were hectic at times, particularly when commercial power failed and the back-up power van didn't believe it was supposed to work.

"Later came INTELSAT III and the second fixed antenna for Paumalu. Everyone marveled at the new ground equipment. The daily operations became almost routine. Outages were few and far between.

"For those assigned to the TT&C operations, the historic event took place a few months ago when all of the equipment located in the transportable van was relocated into the control building. The vans stand empty today, serving as a reminder to those who worked in the crowded spaces of the key role they once played in providing communications service when it was urgently needed."

Personals

Ken Elder, operations supervisor, gave his daughter away in marriage to William Clark in a ceremony held on June 12. A reception followed at the Elder residence in Pupukea.

The ranks of bachelors at Paumalu was thinned again on June 26 when Tim Kolb, senior technician TT&C, and Ruth Sugai were married at the Makiki Christian Church

CEA Headlines

Amateur Radio Club Receives Service Award

By Beverly Nitkowski

The COMSAT Amateur Radio Club has received a public service award from the American Radio Relay League for meritorious work in connection with communications provided after an earthquake struck San Fernando, California, on February 9, 1971.

The certificate was presented to the club in recognition of its contribution to the public service record of radio amateurs and is representative of outstanding work by individual amateurs during communications emergencies, done without hope or expectation of reward.

The weekend of June 26 marked the date of another Annual Field Day, the most popular of all amateur events. The purpose of the outing was to demonstrate the clubs' abilities during emergencies, such as the California earthquake. The clubs must be able to set up equipment and operate on emergency power.

This year several hundred clubs competed in a contest during the field day weekend. The objective of the contest was to see how many clubs each amateur club can contact. CEA's club teamed up with the IBM amateur club against the vast enrollment and scored favorably.

Wally Mercer, a member of the Labs club, is currently working on building a repeater for the next OSCAR amateur satellite.

The Plaza station has frequently been on the air with clubs in Australia and Germany. In connection with the World Administrative Radio Conference, Plaza members have contacted the ITU Headquarters Station in Geneva, Switzerland.

If you have an amateur license and wish to use the facilities at the Labs or Plaza, contact Perry Klein at the Plaza or Cal Cotrer at the Labs. New Club members are welcome.

Solar Array Contract

COMSAT on behalf of INTELSAT has awarded a $200,000 contract to Societe Nationale Industrielle Aerospatiale, Paris, to build a lightweight solar array for extensive testing.

For Your Benefit

COMSAT Benefit Program Offers Aid If Death Occurs

This is the second in a series of articles prepared by the Personnel office to explain COMSAT's benefits program to employees and their families.

Last month's article reviewed the many benefits available through your COMSAT employment. This month's article will discuss "Your benefits, and how they apply in the event of your death."

Potential Benefit Sources

In the event of your death, your dependents and/or beneficiary may be eligible for benefits from a variety of sources including:

- The COMSAT Group Life Insurance Plan
- The COMSAT Thrift/Savings Plan
- Social Security
- Workmen's Compensation—if death is attributable to occupational causes
- Individual personal insurance policies

If death occurs as a result of an accident, there may be additional benefits from:

- The COMSAT Group Accidental Death & Dismemberment Insurance Plan
- The COMSAT Voluntary Accident Insurance Plan
- The COMSAT Business Air Travel Insurance Policy—if death occurs when traveling via air transportation while on Corporation business

Benefit Descriptions

Life and Accidental Death and Dismemberment Insurance: As a rule of thumb, all participating employees are insured for at least twice their basic annual salary under the group life insurance plan. If death is due to accidental causes, the beneficiary will receive a like amount under the Accidental Death and Dismemberment Insurance Plan.

The actual amounts and bi-weekly costs to the employee for both plans can be determined from the schedule below:

Life Insurance and Accidental Death and Dismemberment Insurance

	Amount of Insurance		
	Life	AD&D	Your Cost Every Two Weeks
Basic Annual Earnings Through $4,000	8,000	8,000	$ .60
4,001 To And Including 5,000	10,000	10,000	$ .75
5,001 To And Including 6,000	12,000	12,000	$ .90
6,001 To And Including 7,000	14,000	14,000	$1.05
7,001 To And Including 8,000	16,000	16,000	$1.20
8,001 To And Including 9,000	18,000	18,000	$1.35
9,001 To And Including 10,000	20,000	20,000	$1.50
Each additional $1,000 basic and annual earnings or fraction thereof	$2,000 additional amounts of life and AD&D insurance		$ .15 additional cost

Thrift and Savings Plan

With the employee's death, the full value of the his Thrift and Savings accounts will be paid to his designated beneficiary. If a beneficiary has not been named, the accounts will be paid to the employee's estate.

Social Security

Social Security provides a lump-sum death benefit (current maximum:

(See COMSAT Benefits, Page 15.)

CEA Activities

Redskin Exhibition Tickets Offered at Discount

By Beverly Nitkowski

Once again the CEA will sell tickets to two Redskins exhibition games. One hundred tickets have been obtained for the August 28 Shrine Game between the Redskins and the Colts and 100 tickets for the September 11 Redskins vs. Bengals game. The price of tickets is $7.00 each.

Since there is only a limited supply of tickets, only two tickets per CEA member will be sold on a first-come, first-serve basis. Tickets go on sale the first week of August. Watch for flyers naming ticket sellers.

Boating Club Sails On

Club members are currently enjoying sailing on a scheduled basis. The Club's 17-foot Mobjack, purchased in early May from Congressman O'Hara of Michigan, thus far has been put to good use.

Approximately 30 members of the boating club successfully completed the Potomac River Power Squadron small-boat handling course. Examinations are given in June.

Potpourri

Emersons, Ltd., restaurants are offering discount steak dinners to COMSAT employees with proper identification. For more information, contact Bev Nitkowski, Ext. 6141.

Interested in joining a bowling league this fall? Contact John Maddox now so that CEA can get ahead of the rush on alleys.

Two COMSAT employees have their chess ratings shown in the June 1971 issue of Chess Life and Review published by the U.S. Chess Federation. They are Wilbur Pritchard, 1,671 points; and William Higler, 1,852 points, counts which fall into class "B" and class "A" respectively.

It was also noted that Lubomir Kavalek, who put on a simultaneous demonstration at the Plaza in April, was listed as having 2,571, ranking second behind Bobby Fischer, number one U.S. player, with 2,771 points.

New Activities

Jim Tallon, special arrangements chairman, is organizing an investment club for those of you who wish to talk about stocks, learn about the market or invest on your own.

Telephone Jim on Ext. 6550 if you wish to get in on high finance.

CEA members who previously showed an interest in traveling with the CEA at a reduced rate should note that CEA is working on the possibility of taking a trip to Europe in the spring of 1972. Watch for flyers discussing details. For further information at the present time, see Jim Tallon or Bert Runfola.

Tennis Tournament

The annual Labs-Plaza tennis tournament was scheduled to be played at Hains Point on July 17. Participation was based on ladder ranking from both the men's and women's ladders at the Plaza and the Labs. Alan Kasper at the Plaza and Carl Wenrich at the Labs were in charge of arrangements for the traditionally fierce competition.

Labs All-Stars Top Challengers

The All-Stars (composed of 5 members from 3 Labs softball teams) met the first-half season winners on June 17. The All-Stars won, 9-4. Labs Director W. L. Pritchard umpired behind the plate. A barbeque followed the game.

From Page 14

COMSAT Benefits

$255) and monthly benefits to the surviving family of a qualified employee.

For example, monthly Social Security benefits will be payable for widows with dependent children regardless of the widow's age, to widows without children over a prescribed age, and to surviving dependent children. Benefits may also be payable for dependent aged parents.

Detailed information on Social Security death benefits may be obtained by calling your local Social Security office or contacting the Employee Benefits Department.

Workmen's Compensation

If an employee's death is attributable to occupational causes, death benefits may be provided under state and/or local Workmen's Compensation Laws.

All state compensation acts, except one, provide for payment of burial expenses up to a specified maximum amount. In several states, however, such benefits are restricted to cases where there are no dependents.

Death benefits generally are payable to the widow until remarriage and to children under a specified age. Benefit amounts are prescribed in accordance with state and local laws. A number of laws provide lump sums payable to a widow upon remarriage. If a maximum amount is not specified in the law, the amount payable usually is a percentage of an employee's wages modified by the number of dependents.

For more information on this subject, employees should contact the Employee Benefits Department.

COMSAT Voluntary Accident Insurance Plan

If an employee prior to his death was a participant in the Voluntary Accident Insurance Plan, and his death is attributable to accidental causes, benefits will be available from the Voluntary Accident Insurance Plan. Such benefits will depend on the amount of coverage purchased by the employee. The minimum amount of benefit (principal sum) is $10,000 and the maximum amount is $100,000.

Beneficiaries of the amounts payable are designated by the employee.

Next month's article will answer specific questions on the Corporation's Group Life and Accidental Death & Dismemberment Insurance. If there are specific questions you would like to have answered regarding next month's subject, please send them to the Manager, Employee Benefits.

Solar Cell System

COMSAT on behalf of INTELSAT has awarded a $59,535 contract to the Heliotek Division of Textron, Inc., to develop an optimal solar cell - interconnect system to meet the anticipated demands for electrical power aboard future satellites.

Alvin Ewing (right), COMSAT technical specialist for reliability and quality assurance, checks the thermal structural model built by COMSAT Labs under the ATS-F contract with NASA. Looking on is Archie Harmon, NASA quality assurance representative.

COMSAT Labs Team Delivers Model, Proceeds On ATS-F Contract Work

The COMSAT Laboratories team headed by Jay Levatich, which is working on the ATS-F contract awarded to the Labs by NASA, completed a thermal structural model in early June and delivered it to the prime contractor.

Fairchild Hiller, the prime contractor, will use the thermal structural model to complete the design of the experimental satellite.

Two other major pieces of satellite hardware are included under the contract—a prototype model and a flight model.

The prototype model is scheduled for completion in February 1972 and the flight unit is scheduled for completion in June 1972.

These will be a significant step forward in the development of the Corporation's capability to design and build flight hardware.

The thermal model was built in the COMSAT Labs machine shop under the direction of Ron Kessler, and was environmentally tested in the Labs' ETL under Tony Clark.

Paul Schrantz was responsible for much of the design and assembly. Howard Fleiger was responsible for the thermal design.

COMSAT Labs was awarded the NASA contract on March 26 to provide a millimeter wave propagation experiment for flight aboard the ATS-F satellite which is scheduled for launch in May 1973. COMSAT is to provide all phases of the experiment, including the spacecraft hardware, ground equipment and experiment operation and analysis.

The propagation experiment is designed to gather data on satellite signal attenuation caused by atmospheric hydrometeors for ground stations located in representative climatological areas.

The data from the experiment will permit determination of minimum power margins needed in spacecraft communications systems operating at frequencies above 10 GHz. The experiment will yield statistical distributions of signal attenuation from 24 different locations in the U.S.

It is expected that the duration of the experiment will be sufficiently long to permit a statistical comparison between the measured attenuation at a site and general meteorological parameters that are routinely collected by the weather bureau, such as rainfall rate, number of thunderstorm days, and total precipitation.

The most critical phase of the contract involves the spacecraft hardware, since it must function for at least six months while in synchronous orbit.

Brewster Holds Annual Summer Picnic at Lake

Alta Lake State Park was the scene of the annual Brewster CEA picnic on June 12. The festivites began at 10 a.m. and continued until late evening, during which time over 100 pounds of steak were barbequed; mounds of hamburgers and hot dogs were served with a huge assortment of delectable salads made by the COMSAT ladies. Mouthwatering barbeque sauces were furnished by Dewey Martin and Beverly Tate.

There were fun and games for children and adults under the supervision of Jerry Bowes and J. O. Hart. Egg rolling, sack races, lawn darts, volleyball, swimming, boating and water skiing were among the enjoyed activities. There was an assortment of prizes for all who participated in the games and sore muscles for those first-time water skiiers.

Jacob Bossert, Park Ranger, stopped by and thanked chairman Jack Wohlford for our cooperation in keeping the park clean.

Potpourri

Vacation time is here, and the R. Eliasons recently returned from visiting relatives in Connecticut. Doris Lauterbach joined Wally and Jeff in New York after participating in a bridge tournament in Anchorage, Alaska. They attended Wally's class reunion at West Point, then visited relatives in Orlando, Florida; Mankato, Minnesota; and Twin Falls, Idaho.

David Morgan returned to work for the summer. He attended Wenatchee Valley College last fall and winter and will enroll at Washington State University in September.

There has been a flurry of activity around the CEA incubator and brooder. Thirty-nine pheasant eggs and eight chukar eggs have hatched. We now have a brooder of baby chicks.

At Bartlett

Staffers Enter Raft Race and Flying Fever Spreads

By Jim Shaff and Larry McKenna

Bartlett's CEA is busy planning for the first annual picnic. Our outdoor fling will be held at the Cache Creek campgrounds, weather and mosquitoes permitting.

Summer was rather timid arriving, but came. We thought the snow would never leave. Summer brought beautiful 70-degree temperatures, and the whole countryside was blanketed in shades of green. Everyone at Bartlett Park went outdoors with shovels, getting ready for garden planting. Have you ever seen so many rocks?

Tanana Raft Race

Fred Herron, Mike Vaughan and Errol McElroy entered their raft in the "Fourth Annual Tanana Raft Race" held in May. The race took place on a 65-mile stretch of the Tanana River between Fairbanks and Nenana. There were 372 rafts entered this year. Our crew did very well. Starting in position 300, they finished 59th.

One of the crew reported that they would have done much better, but somehow their shortcut wasn't one. The race is a little unusual in that the first ten rafts to finish are disqualified for "trying", and a raft number 11 is declared the winner, with a winning prize of a case of champagne. It's all in fun, and everyone had a great time.

Flying Fever

Flying fever has taken its toll among Bartlett personnel. Bill Patterson and Dewey Clay have gone all the way and purchased a Cessna 150. They are taking lessons from bush pilot Mike Fisher. On the sideline awaiting their turns are wives Carolyn and Margaret.

Karl Welm, who is already a licensed pilot left for a vacation in Austin, Texas, where he planned to pick up his newly purchased plane and fly it back to Talkeetna.

Pat Sousa, along with several other artists from the Anchorage area, organized and held a very successful art show at the Talkeetna Motel over the Memorial Day weekend. They planned another show for the 4th of July.

Errol McElroy has been promoted to senior technician. This puts Bartlett at 100 percent licensed senior technicians.

The fishing really picked up after the ice went out. One week the McKennas took a trip down to the Ninilchik River, famous for king salmon. They didn't have much luck in the fishing department, but reported the trip was still every bit worth it.

The Clays planned a week's stay down in Homer, Alaska, for a little rest, recreation and fishing.

Nippon Gets Contract For Echo Cancelers

A contract to design and fabricate two digital echo cancelers for laboratory and field tests has been awarded to the Nippon Electric Company of Tokyo, Japan, by COMSAT on behalf of INTELSAT.

These cancellation devices will automatically construct a digital model of incoming speech and subtract it from the signal without interfering with outgoing speech, thereby eliminating voice echo which is often a problem in long-distance telephony.

Under the terms of the $87,000 contract the units are to be delivered in a year.

Stations in Congo And New Zealand Commence Service

Two new earth stations entered the global satellite system during June, one in the Atlantic and one in the Pacific.

The new stations—one in the Democratic Republic of the Congo and one in New Zealand—increased the number of earth station antennas in operation in the global system to 55.

The number of antennas in service by the end of 1971 is expected to be 67.

The Nsele earth station in the Congo (Kinshasa) began service via the Atlantic INTELSAT IV satellite with circuits initially to the United Kingdom and the United States.

The Warkworth earth station in New Zealand, operating with the Pacific INTELSAT III satellite, began operations initially with circuits to Australia. Service to Hong Kong and the United States is planned soon.

The next new earth station scheduled to join the system is the Singapore station in August.

Personality Spotlight

Born and raised in the rambling wheat country of Alberta, Canada, where a portion of his youth was spent attending a one room country school, Phil Matlock remembers that most of his boyhood years were spent helping his father with the chores on the family farm.

Phil later attended high school in Idaho where he took extra courses in shop practices and aircraft engines—his first love.

During World War II, Phil became an aircraft mechanic, and later a flight engineer, flying around the country repairing engines and aircraft. It was at this time that he was first exposed to the wide wonders of Alaska, and later to COMSAT. He joined COMSAT over a year ago as a member of the facilities team.

He met his wife while enrolled at the University of Alaska, and with the exception of two years schooling in California, they have always called Alaska home.

The Matlocks have three boys and a girl, all of whom love Alaska's great outdoors life.

New Test Terminal Planned at Labs

The staff of the modulation techniques branch, communications processing lab, will begin erecting an experimental earth terminal beside the Laboratories building in mid-August. The 15-foot dish will be part of the DICOM (digital communications) project.

The terminal will serve for both experimentation and demonstration purposes, according to Andrew Werth, DICOM project manager. Accessing limited bands in the Atlantic INTELSAT IV, the terminal will test the feasibility of incorporating smaller, less expensive earth stations with no loss of voice or television quality when digital processing techniques, rather than analog, are used to modulate the signal. The terminal will also be used to conduct experiments using pulse code modulation and DELTA modulation in conjunction with forward error coding techniques to improve transmission quality.

Experiments through the terminal are scheduled to begin in September.

This is the Orbita station in Siberia visited by Mr. Briskman.

Broadcasters are Told They Hold Key To Future of CATV Satellite Service

Assistant Vice President John L. Martin, Jr., told cable broadcasters that satellites could well be "a large force in the development of cable TV in the future."

Mr. Martin was one of six panelists at a recent management session sponsored by the National Cable Television Association during its 20th annual convention in Washington. The title of the panel session was: "There's a Domestic Satellite in Your Future."

Mr. Martin said that COMSAT's multipurpose domestic satellite proposal offered a "reliable, a low-cost, a complete service." He pointed out that COMSAT's plan was for a nationwide common carrier operation, open to all, bringing lower overall costs through the sharing of fixed facilities by many customers.

Such a system would provide CATV operators with nationwide interconnection and distribution capability for expanded programming, Martin said. But he added: "The impact of this availability is up to the cable television industry itself; it alone holds the key to what satellites will mean to its business."

Others on the panel included Asher Ende of the Federal Communications Commission, Col. S. A. Lasher of the Office of Telecommunications Policy, A. L. Parker of Collins Radio Company, Carter Page of Western Telecommunications Inc., and Paul Visher of Hughes Aircraft Company.

Col. Lasher said all of the applicants in the domestic satellite case now pending before the FCC "expressed optimism in their filings." He said the OTP, after reviewing all eight major filings, had no desire to change the "open skies" policy which was laid down in January 1970.

Mr. Ende of the FCC's Common Carrier Bureau said there "will be one, probably more, satellite systems in your future." He declined to speculate on when a decision might be issued by the Commission.

Panelists Page and Parker urged an "open ground" policy in which users of domestic satellite service would be able to own their own earth stations.

Mr. Visher of Hughes said there was no scarcity of orbital space or frequencies for satellites serving the U.S. He also commented that domestic satellite services "should not be a monopoly." He argued that there was room for both common carriers, special purpose systems and private systems for domestic service.

FCC Chairman Dean Burch was the main speaker at the closing convention luncheon later that same day. He urged the CATV operators to show enterprise in providing new services.

"If the industry response, typically," he said, "is one of moving broadcast signals around the country in order to make a buck, so be it. We'll draw our own conclusions.

"But if cable takes off from its necessary base of broadcast signals and turns itself into a vehicle of maximum service—if, in other words, it turns that opportunity into substantial performance—then I think you can count on a response (from the FCC) the equal of your own effort."

Technical Staffer Visits Station In Orbita System

A group of Americans including Robert D. Briskman of COMSAT recently toured a Soviet earth station and observed TV reception via satellite from Moscow.

The station, situated in Central Siberia outside of Novosibirsk, is one of about 50 stations in the Soviet's Orbita system operating with Molniya satellites for the transmission of TV to outlying Russian cities.

Briskman, Manager of COMSAT's domestic and special projects office, visited the station in May while in the Soviet Union as a member of the U.S. Delegation to the Popov Society Congress.

The primary purpose of the station at the time of the visit, Briskman reported, was to receive TV via satellite from Moscow, supplementing local programming broadcast by the three TV stations in Novosibirsk.

During his visit, Briskman said, the antenna moved from 75 to 85 degrees elevation angle.

The antenna was approximately 40 feet in diameter and was installed atop a building that served as the antenna foundation, Briskman said. "The mount (of the antenna) is an elevation over azimuth type with a very strong box-constructed type elevation yoke having an enormous counterweight of lead."

The quality of the black and white video signal as shown on the monitor was "very good", Briskman said, and the audio quality sounded "quite good." At the time of this reception, the satellite was near the zenith of its pass over Russia.

"It appeared that the station had roughly eight personnel, one of whom was the station manager with at least three others being engineers," Briskman said. "It was stated that 10-hour operation (or less) a day was normal, and that 24-hour operation was not required."

Barbara Atkins and Cindy Watson discuss the COMSAT 'Write Around the World' exhibit with George Lawler, director of marketing, at the recent AFCEA convention in the Sheraton-Park Hotel, Washington, D.C. The young ladies, employed at Headquarters, served as hostesses at the exhibit.

Write Around World Exhibit Is Popular At Recent Meetings

The opportunity to "Write Around the World Via Satellite" proved to be irresistible to many persons attending two recent national conventions.

COMSAT's demonstration at the International Communications Association Convention in Atlanta, Ga., in May-June, and at the Armed Forces Communications and Electronics Association meeting in Washington, D.C., in June permitted communications men from industry and government to transmit a written message around the world in less than a second.

Through use of Electrowriter equipment provided by the Victor Comptometer Corporation and more than 145,000 miles of circuitry, their messages circled the globe via three INTELSAT satellites in approximately .8 of a second. The sending and receiving Electrowriter units themselves were located on tables only several feet apart.

As a memento of the occasion, attractive COMSAT hostesses mounted the transmitted and received messages in souvenir brochures suitable for framing.

The Music Was Loud, the Dancing Was Mod

The CEA's spring party, held at the Plaza on Friday, May 14, was a festive occasion for all who attended. Refreshments and snacks were served, while the partygoers danced the evening away under the shade of the Plaza's maple trees. The weather was splendid.

In the photograph above, Tyrone Ricks, print shop manager, tries out some new steps with Ruth Peed.

Jim Shreve, internal audit, dances with his wife, Janet, at the Plaza party.

COMSAT Swingers pose in front of the Plaza before a recent game.

COMSAT 'Swingers' Are Gift to Baseball

COMSAT's gift to the baseball world known as "The Swingers", are currently in action every Thursday evening on the Lincoln Memorial grounds. While COMSAT's entry in the D. C. Woman's Softball League has gotten off to a slow start, the future does look bright.

Coached by Mel Harley of the Print Shop, the team has been working towards its first victory, and he reports that the girls are improving with each practice session.

For those interested in seeing a fast brand of softball, all Swinger games are played on Thursday evenings at 6:30 p.m. on the ball diamonds adjacent to the Lincoln Memorial.

Shown in the photograph of the Swingers at the left are:

Front row, left to right—Lu Pete, Renate Pawlik, Mary Rozday, Harriet Biddle, Elaine Stott, Bert Runfola, Janet Royal.

Back row, left to right—Bev Nitkowski, Kitty Stephenson, Ruth Peed, Mel Harley (coach), Peggy Fisher, Sandy Reynolds.

CEA's Spring Mixer

Weisend, Flynn Win Round-Robin

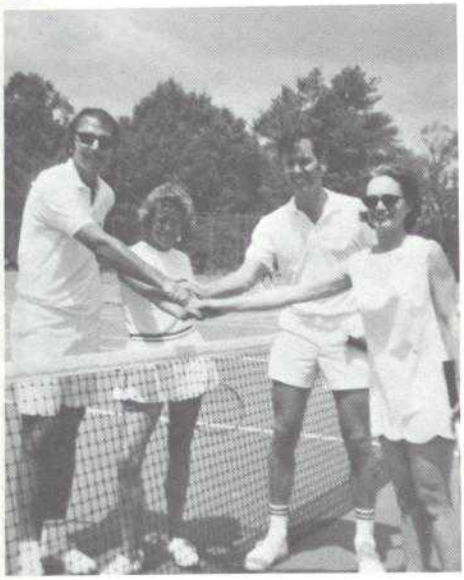
Hains Point was the scene for the recent CEA Spring Tennis Mixer. More than 40 COMSAT players joined in the Round-Robin action with each mixed doubles team playing all other teams to determine the tournament winner.

The final 3-game match pitted Marty Fliesler of Legal and partner Jane Dowler against Dan Flynn of Personnel and Mary Weisend of Corporate Relations. Winning two of three games the Flynn-Weisend team were the victors, each receiving a well-earned trophy.

CEA Offers Volleyball

CEA's special arrangements chairman, Jim Tallon, recently announced that the CEA has obtained a volleyball court for Plaza players. Located just across the street from the entrance to the Lincoln Memorial the court is available from 4:30 P.M. to 8:30 P.M. on Monday evenings throughout the summer.

For additional information, call Jim or Jack Dicks.



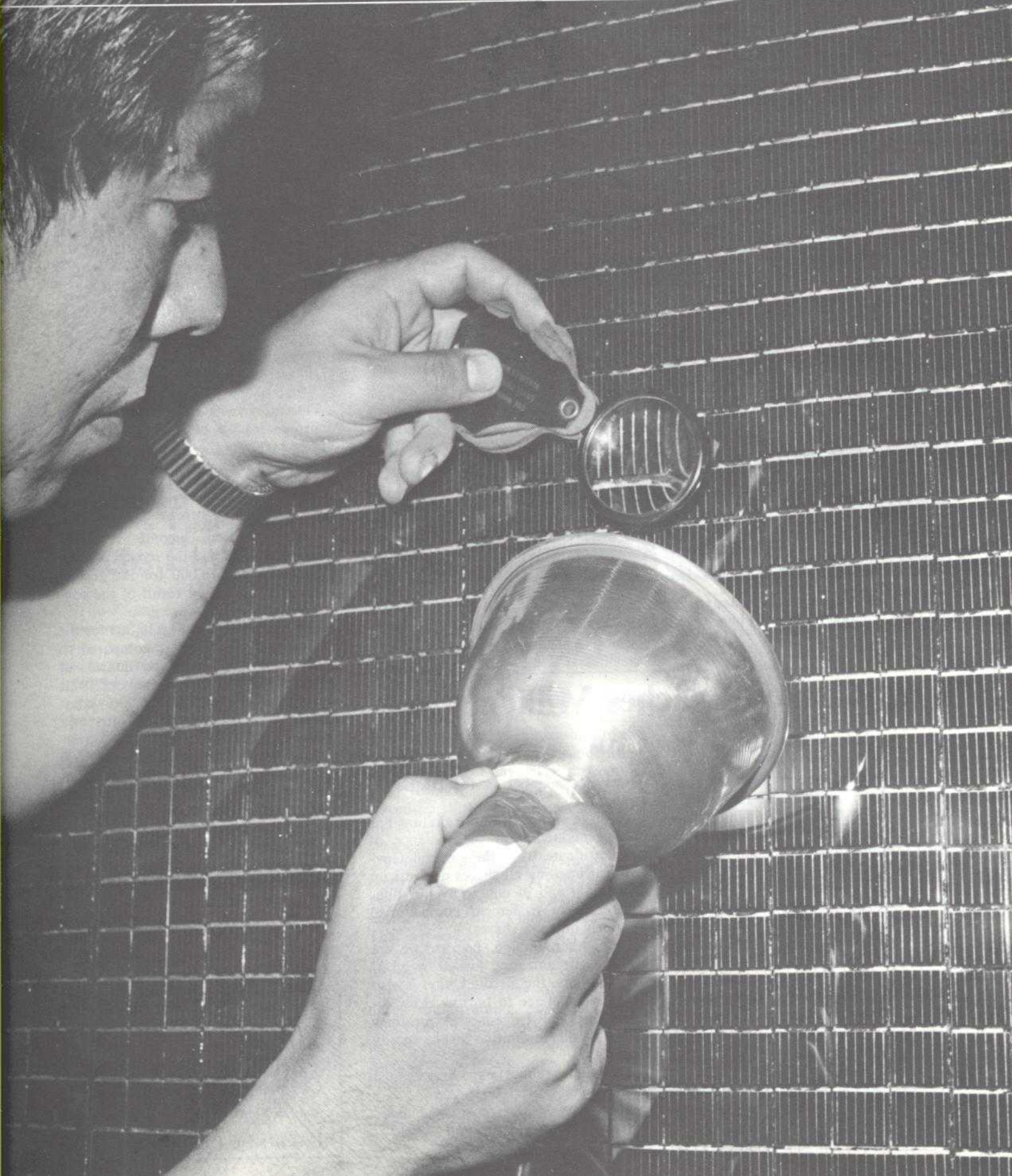
Marty Fliesler and Jane Dowler congratulate the winners.

Dan Flynn guards the net while Mary Weisend prepares to serve.

The winners, Dan Flynn and Mary Weisend with their trophies.

COMSAT NEWS

September, 1971



COMSAT Headquarters beauties (from the left) Emogene Madison, Elaine Luther and Dede Runfola discuss the huge plastic sculpture presently on display at L'Enfant Plaza.

Credit Union Reaches Million Mark

By Paul Rankin

Since the issuance of its charter on June 23, 1967, only four short years ago, COMSAT's Credit Union has grown from an initial $35 shares deposit to more than $1,000,000 in assets as of June 30, 1971.

This outstanding growth has made the Credit Union the fourth largest in assets per member in the District of Columbia.

A large influx of share dollars has been generated with the issuance of our certificate from the Federal Government insuring all shares deposits up to $20,000 and of course by our dividend rate of 6 percent compounded quarterly on these shares.

Remember, though, because we are a mutual organization owned by all of the members, the Credit Union is also an excellent place to borrow. Low interest rates and twice-a-week meetings of the credit committee insure speedy loan action.

To inquire about our services just give us a call on Ext. 6638.

Mr. Rankin is treasurer and general manager of the Credit Union.

On the Cover: Fred Osugi of the Space Segment Implementation Division uses a magnifying glass and a bright light to check each of the more than 45,000 solar cells on the INTELSAT IV, F-3 for damage which might have occurred during shipping or assembling. For more photos and a description of the intensive prelaunch checks made by the COMSAT staff before the launch of a IV, see Page 10.

Net Income Up, Second Quarter Dividend Slated

COMSAT net income increased to $5,454,000 or 55 cents per share for the second quarter of 1971, compared to $3,974,000 or 40 cents per share for the second quarter of 1970. For the first six months of 1971, net income totaled $12,145,000 or $1.21 per share, compared to $7,319,000 or 73 cents per share for the first six months of 1970.

Revenues amounted to $22,229,000 for the second quarter of 1971 and $44,163,000 for the first half of 1971. Last year, revenues totaled $16,793,000 for the second quarter and $32,228,000 for the first half.

The increase in revenues is attributable primarily to the growth in the number of leased full-time equivalent half circuits from 1,657 a year ago to 2,280 at June 30, 1971.

Operating expenses for the second quarter were $18,111,000, compared to $14,369,000 in the second quarter of 1970. Operating expenses for the first six months of 1971 were $35,424,000, compared to $27,954,000 for the first six months of 1970.

Net operating income increased from $2,424,000 for the second quarter of 1970 to $4,118,000 for the second quarter of 1971 as a result of the continued growth of revenues.

Other income was $1,336,000 for the second quarter of 1971, compared to $1,550,000 for the second quarter of 1970. For the first six months of 1971, other income was $3,406,000, compared to $3,045,000 in the first six months of 1970.

A decrease in earnings of $1,237,000 in the second quarter of 1971, from the first quarter of 1971, was attributable to higher depreciation and amortization costs with the placing in service of the first INTELSAT IV satellite, lower income on the Corporation's investment portfolio, and lower interest during construction.

At its monthly meeting on July 23, the COMSAT Board of Directors declared a quarterly dividend of 12.5 cents per share.

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Matthew Gordon, Assistant Vice President for Public Information
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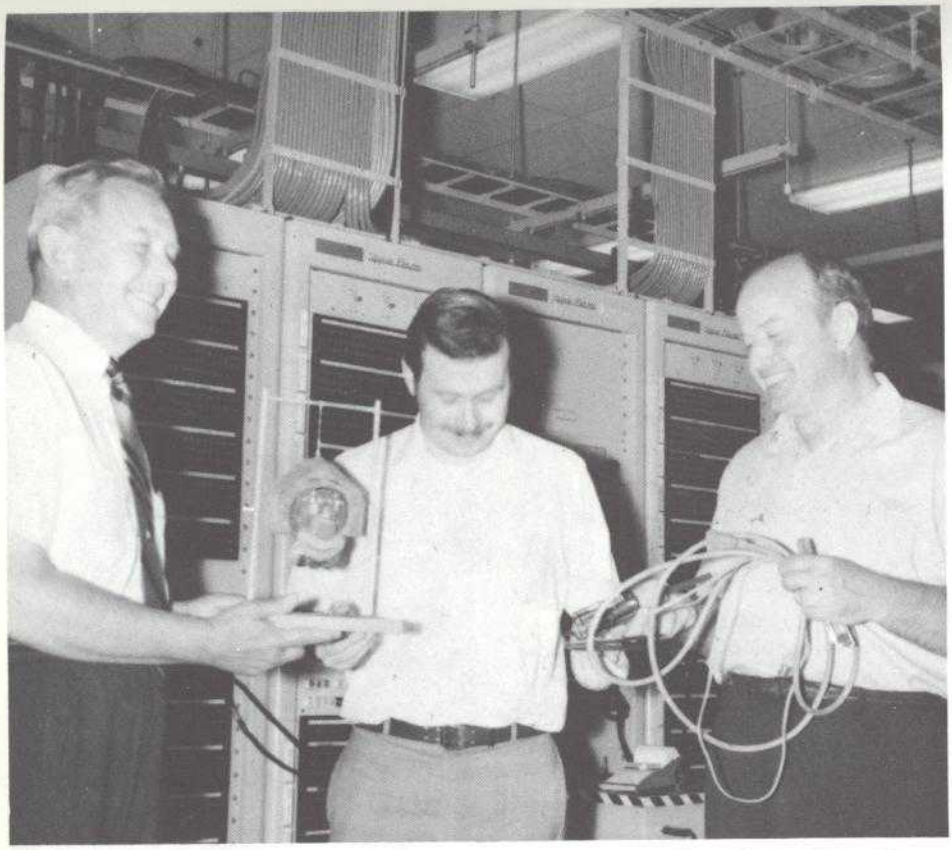


Jerry Reeves (center) receives the "Drazah Ytefas Award" at Etam from Chester Randolph (left). Jerry did not disconnect the soldering iron and left it on the floor by the supergroup distribution frame. Sam St. Clair (right) displays evidence.

New Proficiency Training Program Keeps Etam Operations Up-to-Date

The initial cycle of a Proficiency-Continuation Training Program at Etam was concluded in August. The program was envisioned and developed by the procedures and training supervisor, Jim Silvius. It had become apparent that certain equipment areas were becoming vulnerable to extended outage time due to unfamiliarity arising from infrequent use and little or no failure experience in these areas.

Some of the Operations Team members had little opportunity for in-depth work on some of the equipment. Time itself erodes memory, and many of the internal circuit components had been buttoned up under interlocks and were inaccessible for daily observation and review of job skill knowledge.

With this in mind, Mr. Silvius approached the station manager with a plan that should yield worthwhile results.

One of the main obstacles was how to accomplish the training on working equipment without permitting traffic interruptions to occur. Also, there was the additional problem of how to accomplish the training during working hours, and the task of preparing necessary training material.

Mr. Silvius came up with a schedule that met the requirements and implemented a program in which a dual function of supervisor and technician-trainer resulted.

This was accomplished by removing one operations supervisor from the shift schedule and assigning him to the procedures and training supervisor's position for five days. The procedures and training supervisor was then placed on shift to implement his training program in the assigned area for his speciality.

This gave the supervisor 40 hours to prepare a program in his assigned area, and allowed the normal shift schedule to move ahead one shift. That supervisor then rejoins a different team at the end of the rotation of the shift.

The responsibilities of the procedures and training supervisor were subsequently farmed out to other departments to allow the operations supervisor adequate time to prepare his program.

The operations supervisors' duty of preparing their own training program becomes a good review for them.

The rotation of the operations supervisors through the four teams produces five points of view on the value and skill of each man.

Etam feels that this program is a success, primarily because the people make it work, and believes that similar programs will yield worthwhile results.

Staffer Escapes Injury in Mishap On 747 Flight

Mike O'Hara, an employee assigned to the Etam station for the past eight months, although never having been on station, had quite an experience with Boeing 747s during a recent trip to Japan to test new SPADE equipment.

On takeoff in San Francisco, part of the landing gear struck a runway light and smashed through the fuselage of the plane into the passenger compartment.

The pilot managed to complete the takeoff, and then after circling around a while to dump fuel, he landed at San Francisco under emergency conditions.

Although there were some serious injuries to passengers, Mike escaped unharmed. He was then booked on another 747 later that day, but this plane could not take off because of engine problems.

He eventually made it to Tokyo. But it was rumored he sought a boat ticket for his return, since flying almost involved Mike in a different kind of SPADE project.

Potpourri

Paul Helfgott and Rupard Hobbs were presented their 5-year service pins by William Carroll, station manager, on June 22.

Dennis Hobbs is now spending some time with his parents, Mr. and Mrs. Rupard Hobbs, while home on furlough from the Air Force.

Vacationers at Etam have been many in recent weeks. Mr. and Mrs. John Formella and family visited their home state of Wisconsin; Mr. and Mrs. Jim Evans and family spent 10 days fishing at Lake Buckhorn near Ontario, Canada; Mr. and Mrs. John Goodwin and son, Jeff, visited Niagara Falls and Canada; Mr. and Mrs. Andy Thompson toured some Western states; and Mr. and Mrs. Roger Parsons and family planned to visit some of the Southern states.

Sidney Browne, Director, INTELSAT System Management, reviews an operations document with his secretary, Georgia Jones.

INTELSAT System Management Division

The Complex Duties of Operating the Global System

The responsibilities for operational management, direction and control of the global satellite system are permed by the INTELSAT System Management Division.

The staff of this division is concerned with the complex and demanding responsibilities of around-the-clock operation and maintenance of the system. The division is also responsible for the activities of the Operations Representatives organization through which planning and coordination is effected for the global system, which in six short years has grown into its fourth generation of satellites.

Diana Pontti, secretary, confers on a document correction with Willie Lee, Manager, INTELSAT Operations, and staff members (left to right) Woody First, Larry Adams, George Wootton-Woolley and Al Churchwell.

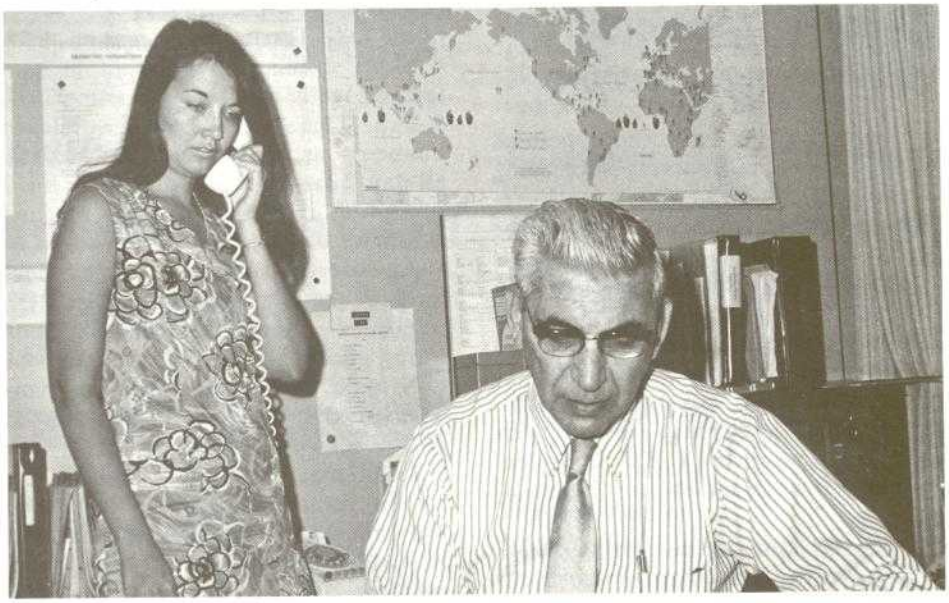
The growing system now includes 56 antennas which provide television and high speed data services in addition to the more than 2,600 full-time high-quality international telephone circuits.

The successful operation and orderly growth of the system is partly a result of the dedication to international cooperation of this division which draws support from many elements of the Corporation's INTELSAT Manager's staff.

In support of the day-to-day operation and planning and coordination activities, other staff members of the divison perform monitoring and evaluation duties to ensure proper operation of the space segment and help realize its maximum utilization. Others support the division by coordinating the many international meetings and documentation required to help meet the needs of the global system.

Dave Burks and Bob Camann, INTELSAT Plans staff members, study the latest circuit utilization figures.

Frank Burkitt, Manager, INTELSAT Plans, dictates a memo to Peg Walker, secretary, as staff member Al Mark looks on.



Mike Waldman, Manager, INTELSAT Support, prepares for a meeting while Priscilla Fuller, secretary, answers the telephone.

Geoff Hall, INTELSAT Plans staff member.

Herb Hanson and Dick Skroban discuss a monitoring problem as Harry Gross, Special Assistant, Monitoring, seeks the answer on the desk top calculator.

Mr. Skinner

Skinner Appointed Accounting Director

George Skinner has been appointed as Director of Accounting succeeding Ronald C. Mitchell, who recently resigned from COMSAT to join the World Bank staff.

Mr. Skinner joined COMSAT in October 1966 as budget manager in the Comptroller's Office.

A veteran of post World War II service with the U. S. Air Force, Skinner attended Lynchburg College, Virginia, and received a B.B.A. in accounting from Southeastern University.

Prior to employment with COMSAT, he held accounting positions with American Viscose Corporation and CEIR, Inc.

COMSAT Staff Participates in Satellite Study

Several COMSAT staff members were selected to participate in a summer study of military satellite communications. The study, organized by D. L. Solomon, Acting Assistant to the Secretary of Defense (Telecommunications) was conducted during August at the new Defense Communications Agency Satellite Engineering Facility, Reston, Virginia. Its objective was to recommend to the Department of Defense a satellite system for the mid-1970s suitable for military requirements. A satellite systems R&D program for the late 1970s and 1980s was also recommended.

More than 60 experts from various operational and technical areas participated. They included military and civilian representatives of the DOD in addition to scientists and engineers from industry and the campus.

Burton I. Edelson, Assistant Director of the COMSAT Labs, was Chairman of the Study. A. M. Churchwell of COMSAT Operations served on the Systems Engineering Panel, as did Samuel F. McNeil. From COMSAT Labs, technical assistance was given by Jay Levatich, manager, Propagation Branch, in use of frequencies above 10 GHz, and by James R. Owens, manager, Positioning and Orientation Branch, in advanced spacecraft technology.

COMSAT Participates

Favorable New Allocations Made For Space Services by WARC

As members of the U.S. delegation to the World Administrative Radio Conference-Space, held in Geneva, Switzerland, from June 7 to July 16, a number of COMSAT personnel participated in the favorable work of the conference.

COMSAT's President, Dr. Joseph V. Charyk, was senior advisor to the delegation while James B. Potts, David W. Lipke, Edward J. Martin, Hans J. Weiss and David M. Leive served as delegates. Sidney Metzger, COMSAT Chief Engineer, was a member of the U.S. Territories delegation.

Many evenings were spent in conference, with one session lasting until 5 a.m. There were, however, relaxed moments as well. These included an all-day boat ride for delegates on a lake, with music, wine, good fun and sunshine.

An overall summary of the conference results indicate that the frequency allocations decided upon were generally consistent with the U.S. recommendations and are favorable to the continued expansion of INTELSAT satellite services.

Additional frequency ranges for use in future domestic systems also were allocated. Other actions included regulatory provisions for proper management of potential orbital congestion, which some persons fear will face users of satellite systems in the next decade.

For COMSAT, the following new allocations for space services are of primary interest:

1. Thin-line small user application: 2 x 35 MHz of bandwidth around 2.5 GHz.

2. INTELSAT services expansion: 2 x 500 MHz bandwidth between 10 and 15 GHz, and 2 x 2.5 GHz of bandwidth at 20 and 30 GHz, respectively.

3. Domestic application: 500 MHz of bandwidth around 7 GHz, and 750 MHz of bandwidth around 12 GHz, in addition to the existing INTELSAT allocations which can also be used in a future domestic system.

4. Aeronautical mobile satellite applications: 2 x 16 MHz bandwidth around 1.6 GHz, and footnote allocations in the aeronautical radio navigation bands: 1.5585-1.6365 GHz (78 MHz), 5.000-5.250 GHz (250 MHz), and 15.4-15.7 GHz (300 MHz).

5. Broadcasting satellite applications: 190 MHz bandwith around 2.5 GHz, and 500 MHz bandwidth around 12 GHz.

Luis Rodriguez's Son Makes All-Star Team

Jose (Tito) Rodriguez, the 16-year-old son of Luis R. Rodriguez, Cayey administrator, was recently named a member of Puerto Rico's all-star volleyball team. Jose is the youngest player ever selected for this honor and helped represent his homeland in the Pan-American Olympics held at Cali, Colombia.

His team then went to Cuba for the Caribbean Regional Tournament where they finished third, losing to teams from the Mainland and Cuba.

Mr. Rodriguez reports that his son, who is over six feet tall, will soon start his junior year at Notre Dame High School in Caguas, Puerto Rico, and has received scholarship offers from two island universities.

Annual Report Awards

The COMSAT 1970 Annual Report to Shareholders recently won merit awards in annual competitions sponsored by the Advertising Club of Washington and by Financial World magazine.

Lee Jondahl, at the head of the table, was joined by a group of his fellow employees at lunch in celebration of his 5th anniversary with COMSAT.

COMSAT Joins In Sponsoring Cayey Concert

By Luis R. Rodriguez

An evening of Puerto Rican folk music jointly sponsored by the Cayey Cultural Center and COMSAT highlighted midsummer activities at Cayey. Local baritone Victor Santini was featured in the concert, the purpose of which was to stimulate interest in this style of music.

5-Year Award

Lee Jondahl, station engineer, received his 5-year pin from Juan Castanera, our manager, at a recent luncheon-meeting attended by a large gathering of Mr. Jondahl's fellow employees. Lee started his COMSAT career at the Andover earth station.

Promotions

Congratulations to Arsenio Reyes and Elfren Castro on their recent promotions. Mr. Reyes became a senior facilities mechanic while Mr. Castro advanced to technician.

News and Notes From Jamesburg

Advance Tests at Jamesburg Pay Off With Top Results for Apollo 15 TV

By M. Lee Dorsey

In order to perfect arrangements for transmitting TV coverage of the Apollo 15 moonwalk and the splashdown, the staff at Jamesburg went through many tests prior to the Apollo 15 liftoff.

Tests for the moonwalk were conducted with the Honeysuckle Creek Station in Australia via Moree, Australia. Tests for the splashdown were conducted with the GE transportable antenna aboard the U.S.S. *Okinawa,* the recovery ship.

The results of these many tests, as seen on TV screens, were excellent.

Jamesburg Apollo 15 Cachet

About 600 envelopes with the Jamesburg cachet commemorating Apollo 15 were sent to stamp collectors. Requests for this cachet have grown considerably since Apollo 12.

Five-Year Award

Station manager John P. Scroggs received his five-year pin on July 11. Mr. Scroggs joined COMSAT on July 11, 1966.

Electrode Study

COMSAT on behalf of INTELSAT has awarded a one-year $74,734 contract to TYCO Laboratories of Waltham, Mass., to perform a design study of fuel cell electrode materials for future use in synchronous satellites.

New JCEA Officers

William M. Hartke, senior technician, is the new president of the employees association. Other officers are: vice president, Donald J. Tucker; vice president, social/athletic, Joseph D. Speek; treasurer, A. Roy Scheiter; secretary, Patricia A. Blatnik. Already, these new officers are busy planning their future events. Watch the bulletin board and the COMSAT News for JCEA activities.

Seminar

Senior technician Larry D. Baley returned from attending a week's seminar at the Hewlett-Packard Company. The seminar was related to new techniques of microwave measurement.

New Stone Barbecue

Because we live in *sunny* California and do much of our eating outdoors, our facilities staff constructed the station a barbecue fireplace almost entirely of Cachagua stones. Cachagua stones are one thing we certainly have plenty of here at Jamesburg. They are so plentiful that some of the local people refer to them as the "Cachagua Potatoes", and they are used frequently to build fences, and even houses.

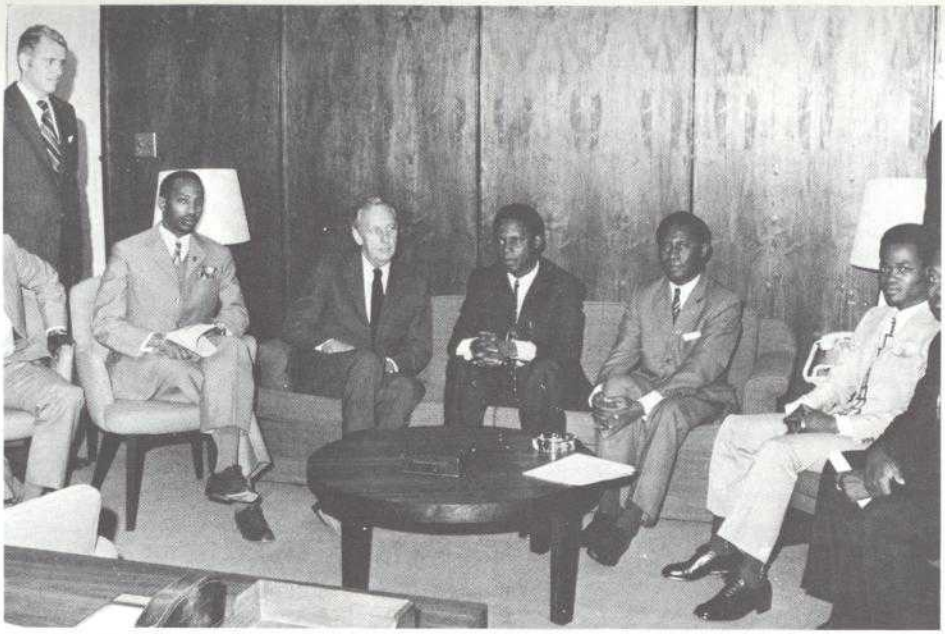
Parties, Parties

The Jamesburg staff was well feted with parties in recent months. Assistant station manager Michael J. Downey and wife, Ruby, entertained staff members with their wives and husbands at a buffet dinner party at their home.

Preceding the dinner party at the Downeys', a no-host cocktail party, planned by the outgoing JCEA social vice president, Larry D. Baley, was held at the Los Laureles Lodge. This was Jamesburg's second quarterly party. Party guests included Messrs. and Mmes. Larry Baley, Laurence Cisneros, Robert Dorsey, Michael Downey, James Harding, William Hartke, Jack Inman, Cecil Jeter, Warren Neu, Wilfred Nubin, A. Roy Scheiter, Joseph Speek, as well as Peter Roberts.

Wedding Bells

A late July wedding was held at the Carmel Valley Community Church for AT&T technician Joseph Wirkkala and the former Naomi Takacs. Joe and Naomi will make their home in the Cachagua Valley.



A delegation from the Democratic Republic of the Congo (Kinshasa) during its recent visit with Lucius D. Battle, Vice President for Corporate Relations, prior to signing the INTELSAT Definitive Agreements. Seated from the left are Mr. Ngirabatiware, Mr. Battle, Minister Mushiete, Ambassador Ileka and Mr. Banguli. Standing is COMSAT's H. A. Bingham.

At 54th Meeting

Actions of the Interim Committee

The Interim Communications Satellite Committee (ICSC) held its 54th meeting July 21-27 in Washington. Seventeen of the 18 members, representing 46 of the 80 signatories, were present.

Among its actions, the Committee:

• Approved the requests of the Republics of Ghana and Gabon for quotas of 0.01 and 0.05 percent, respectively, which reduced the remaining unallocated quota to 1.905 percent.

Subsequently the Republic of Gabon acceded to the Interim Agreements during the meeting on July 23 with a quota of 0.05 percent to become the 80th member of INTELSAT.

• Authorized COMSAT as manager to make arrangements for the launch and initial deployment of the INTELSAT IV, F-3 satellite over the Atlantic region at 19.5 degrees West (340.5° East) longitude.

The Committee also agreed that upon satisfactory commencement of operation of the INTELSAT IV, F-3 satellite, the INTELSAT III, F-7 will be relocated over the Indian Ocean to serve as a co-located spare for the INTELSAT III, F-3. This would allow the INTELSAT III, F-3 to be used more quickly as an emergency spare for the Pacific Ocean area.

• Authorized the manager to approve the allotment requests submitted by COMSAT and the British Post Office for an extension of the NASCOM service arrangements from October 1, 1971, through September 30, 1972, at rates based on the derivation of 50 dB standard circuits, as compared with 44 dB circuits for the arrangements expiring September 30, 1971.

• Approved $5 million as the guideline for planning the 1972 INTELSAT R&D program, with the same approximate level contemplated for 1973 and for 1974.

• Following the Manager's explanation that there would be a delay of 4 to 4½ months in the delivery of system monitoring equipment by a contractor, the Committee authorized the Manager to make certain amendments to the TT&C and system monitoring agreements with Telespazio and the Australian Overseas Telecommunication Commission since both had incurred modification costs in anticipation of providing monitoring services on August 1 as scheduled.

• Adopted the Manager's proposals on financial procedures required as a result of the net capitalization of INTELSAT passing the $200 million level.

• Adopted the recommendation of the ICSC/F to continue the present method by which COMSAT provides working funds to INTELSAT, but with the rate of compensation for 1971 to be determined at a subsequent Committee meeting. At its 52nd meeting, the Committee had agreed to compensate COMSAT at a rate of 6 percent for the full amount of working funds advanced to INTELSAT during the years 1969 and 1970.

• Unanimously agreed to appoint the following seven individuals for terms beginning October 3, 1971, to the panel of legal experts from which presidents of arbitration tribunals will be selected: Ambassador Rafael de la Colina, Mexico; Robert James Ellicott, Australia; Jens Evensen, Norway; Robert H. Knight, United States; Mohammed-Salah Mohammedi, Algeria; Raimundo Perez Hernandez y Moreno, Spain; and Fujio Uchida, Japan.

This panel is the last to be chosen under the terms of the Interim Arrangements, and will continue in office until replaced by a panel appointed by the Assembly of Parties in accordance with provisions of the Definitive Arrangements.

• Approved the Matura Point (Trinidad and Tobago), Barbados and Martinique earth stations for initial access to the INTELSAT III and IV satellites. The Committee also approved the U. S. application for the transportable earth station aboard the *U.S.S. Vanguard*, located in the Atlantic Ocean, for access to INTELSAT IV satellites.

Granted formal approval to the Aguimes (Spain) and Warkworth (New Zealand) earth stations to operate with INTELSAT III satellites.

• Scheduled the 55th meeting to commence September 29 in Buenos Aires, Argentina.

Digital Test System

COMSAT has awarded a $35,260 contract to TAU-TRON, INC. of Lowell, Massachusetts for the fabrication of two digital communications test systems. The work is to be performed for COMSAT Laboratories.

The equipment is to be used to measure the performance of advanced communications equipment now being developed in the COMSAT Laboratories for use in the global satellite communications system.

COMSAT Goes to NCTA

A new exhibit depicting COMSAT's proposed domestic satellite system was displayed at the recent National Cable Television Association Convention held at the Sheraton Park Hotel in Washington, D. C. In the photo above, convention visitors listen to a taped summary at one of the exhibit's three sections.

Emphasizing COMSAT's desire to establish a nationwide network of 132 earth stations to work with the satellites, the exhibit also stressed that the system's 32-foot antennas could provide greater capabilities for cable television.

Gallon Club Members

COMSAT members of the Red Cross Blood Bank Gallon Club are (seated, from the left) Charles Baer, Miss Hazel Durant (COMSAT nurse), Kathleen Wilson, Rock Mattos, and (standing) Jim Malarkey, Nelson Slye, Lou Early and John Welch. Another member is Larry Kopp.

Miss Durant appealed to employees to contribute blood in the fall drive so that COMSAT may maintain its membership in the program. A number of employees have received blood from the bank, and a member of one employee's family received blood for 17 transfusions.

Etam Initiates Burger Heaven At Parking Lot

"Hamburger Heaven" officially opened at Etam and was used for the first time on June 16. This shaded area next to the parking lot was conceived and completed by Bill Adams, senior facilities mechanic. Crawford Booth, facilities maintenance supervisor, also contributed by constructing a picnic table, making the surroundings more inviting for our Wednesday cookouts.

Etam Earth Station was quite busy during the month of July making preparations to support numerous TV programs of the flight of Apollo 15. Over 600 commemorative envelopes were cacheted for this event and mailed to interested space collectors.

On Saturday, August 7, Messrs. Carroll, Parsons, Formella, Bulk, Reeves, Silvius, Randolph and the lone AT&T representative, Ed Doll, met at the Preston Country Club to compete in the Second Annual Operations Golf Tournament.

Visitors at Etam

AT&T Long Lines building engineers, along with Richard McBride of Headquarters, visited Etam on June 15. The group was shown slides on various facets of construction and were briefed about the slides by Mr. McBride.

Dwain Place, Alan Lord and Louis Garrett from Mathematical Commutation Laboratory visited the station. They were interested in uninterruptible power sources.

Maj. Johnson from the Army SATCOM agency at Fort Monmouth, New Jersey, recently visited Etam. His interest was mainly in the Borg-Warner UPS installation.

Gabe Koukkos from Raytheon Company was on station last month to install a new GCE receive rack.

Personnel visiting Etam from Washington included Don Ross, Stan Lupinski, Drew Walker, John Ball, William Young, Ben Williams and Dennis Podgurski.

Four visitors from Israel were scheduled to visit the station in late August. They are: Mr. Davidi, site manager, and Messrs. Nagel, Swartz and Basis, site supervisors. They were to go "on shift" during this period of time.

Upon arrival from the spacecraft contractor's plant, the first COMSAT IV shipping cases are unloaded from an L-100 Super Hercules turboprop plane on the skid strip at Cape Kennedy.

Busy Schedule at the Cape

Intensive Prelaunch Tests Cut Risks

By James Wilde

The steady growth in communications capability of each successive INTELSAT program since the pioneer Early Bird has been accompanied by an increase in spacecraft size and complexity. Each of the INTELSAT IV series spacecraft stands 17½ feet tall and weighs about three quarters of a ton after the apogee motor has been fired, a nearly twenty-fold increase over the weight of Early Bird.

This increase in spacecraft size has resulted in a considerable expansion in the work to be done by COMSAT and contractor personnel at Cape Kennedy before each launch.

While the spacecraft of previous programs were—except for their apogee motors—delivered to the Cape in one piece, the subassemblies of an INTELSAT IV fill eleven separate shipping containers, sufficient to warrant the exclusive charter of an L-100 Super Hercules aircraft from Los Angeles direct to the skid strip runway at Cape Kennedy.

The arrival sets in motion a six-week schedule of spacecraft reassembly and checkout involving Hughes Aircraft Company personnel and approximately 16 COMSAT personnel from the Space Segment Implementation Division led by Deputy Director E. T. Jilg. While some of the 16 are at the Cape throughout the scheduled prelaunch period, others come just to attend to their specialty, "do their thing" and depart.

Mr. Wilde is RF branch manager in the Space Segment Implementation Division.

Test Equipment

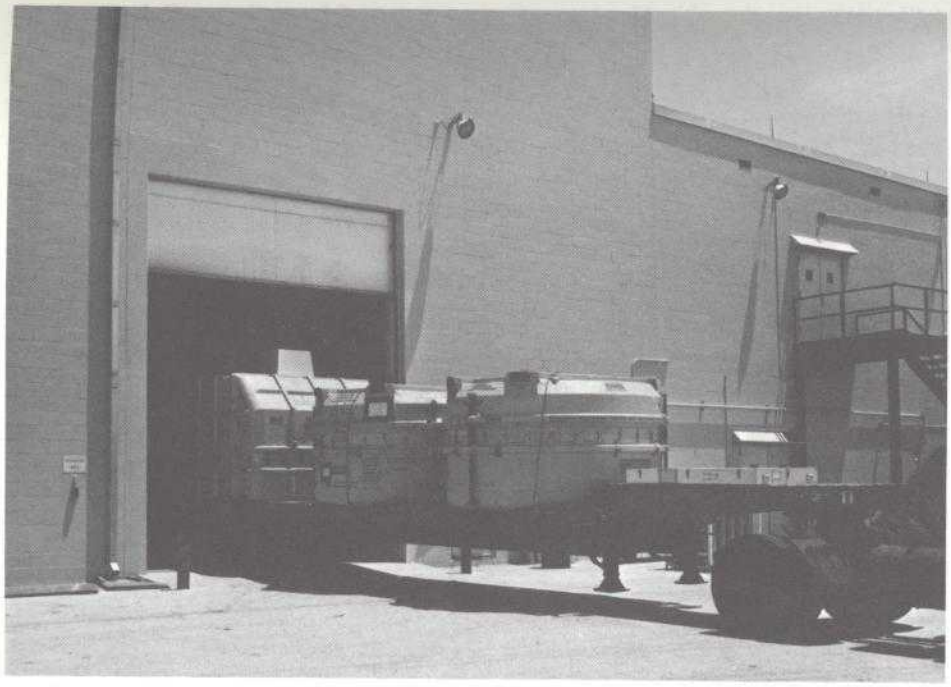
For the forthcoming launch of the INTELSAT IV, F-3, test equipment and fixtures began to arrive at Hangar AM, the center of the prelaunch activity, early in the week of July 19.

Team members then unpacked, assembled, checked out and calibrated the test equipment in readiness for the arrival of the spacecraft containers. These were unloaded by fork-lift from the airplane and convoyed by low-load trucks to the hangar on July 22.

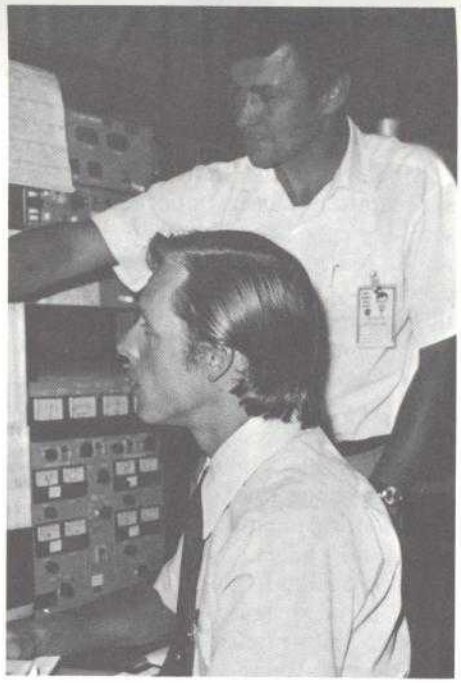
One feature of the Cape work for INTELSAT IV is the use of one of the shipping containers as a portable anechoic chamber for an evaluation of the spacecraft communications system. The despun compartment container, six times the size of the container for a complete INTELSAT III, is lined with microwave absorbent material and is equipped for transmission to and from the spacecraft antennas.

Before the despun compartment is removed from the shipping container, tests are made by the RF technicians to measure the repeater gain and output power, thereby ensuring that no degradation has occurred since the assembly left the Hughes plant in El Segundo, California.

(See Prelaunch, Page 12)

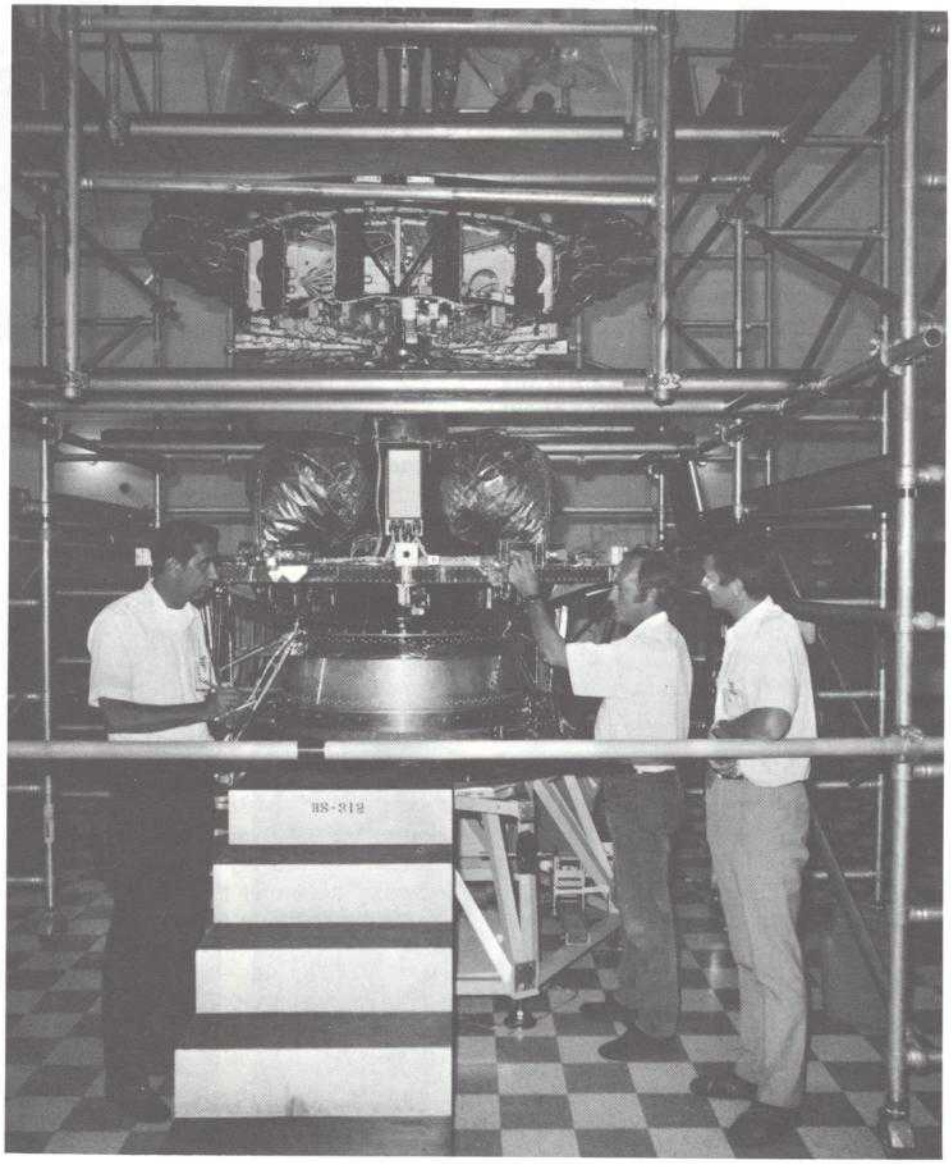


A flatbed truck hauls three of the INTELSAT IV shipping cases into Hangar AM where the spacecraft will be assembled and tested prior to mating with the Atlas Centaur launch vehicle.



Hakan Holm (seated) and Kurt Eriksson monitor spacecraft test results being registered on the test console in Hangar AM.

Jim Wilde climbs an antenna mast on Hangar AM to check the pointing angle of two RF microwave antennas which link the test console in the hangar to the spacecraft during checkout.



Luin Ricks takes notes as Bill Day checks covers on the spacecraft sensors. Kurt Eriksson observes the operation.

From Page 10

Prelaunch Tests

Meanwhile the remainder of the spacecraft has been unpacked and assembly begins, monitored by Bill Day. At an early stage a radioactive leak check of the hydrazine tank and thruster system is conducted by Bob Sackheim, who later dons a yellow plastic protective suit for the loading of the toxic hydrazine propellant into the positioning system.

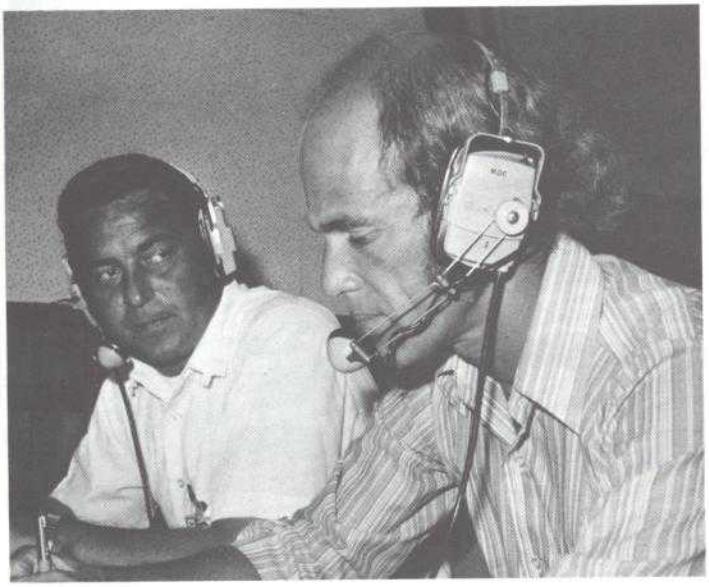
After approximately one week's work the spacecraft has been reassembled, the alignments have been checked, the solar panel integrity has been verified by Fred Osugi, and the spacecraft is once again ready for a full system performance test in which all the spacecraft functions, except those associated with despinning the antenna platform, are verified.

Hakan Holm interprets the copious information generated by the telemetry system which confirms that the various parts of the spacecraft are responding properly to test commands as they are sent.

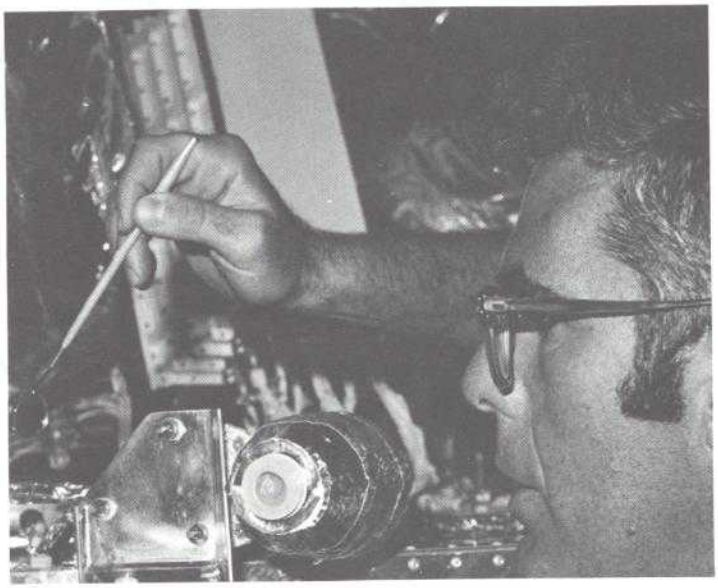
Upon completion of the systems performance test, the spacecraft is transferred to a spin fixture which will drive the spinning portion at a typical 50 rpm. Luin Ricks and Kurt Eriksson then monitor the operation of the subsystems which in space counter-rotate the despun portion of the spacecraft and maintain the antennas accurately pointed towards the earth from synchronous orbit, about

(See Success, Page 13)

A huge protective cover is used to protect the assembled spacecraft during transportation from the test facilities at Hangar AM to the launch pad. The bag is also used to cover the spacecraft in earlier tests to check valves and tubing for hydrazine leaks.



Gene Jilg (right) and Don Campbell check test data in the Mission Control Center.



Bob Sackheim, using a dental magnifying mirror, checks thruster alignment.

Continued From Page 12

Success Is Goal

22,300 miles away.

The bearing and power transfer assembly (BAPTA) clamp is then installed between the two halves of the spacecraft to relieve the stress from the bearings during the launch boost phase.

The spacecraft is then readied for transportation to the explosive safe facility where special precautions are enforced to ensure the safety of personnel during the critical operations of hydrazine loading and mating of the spacecraft with its solid propellant apogee motor, under the watchful eye of Marty Vonnegut.

A large cylindrical bag, air conditioned from a portable unit and supported by a structural cage, is placed over the spacecraft for its trip to the launch pad to protect it from humidity and other environmental conditions.

Once the spacecraft has left the proximity of the system test equipment in Hangar AM, the command, telemetry and repeater check-out facilities are extended to it over radio relay amplifier and antenna systems installed at the locations involved.

Provision of all fixed facilities is coordinated by Don Campbell with members of NASA's Unmanned Launch Operations staff.

Once the hydrazine system has been loaded and pressurized, Neil Lardy and the apogee motor emerge from two weeks work in an underground bunker where he has been monitoring the insulation and instrumentation of the solid motor which will circularize the spacecraft orbit when fired by ground command.

Panels Installed

After the apogee motor has been mated to its flange in the center of the spacecraft, the solar panels are installed, the spacecraft assumes its final appearance and is mounted on a trailer to await its final four-mile trip to Launch Complex 36.

While Al McCaskill and Fred Ormsby continue to work on the Atlas Centaur vehicle, the rest of the COMSAT personnel will return to the West Coast to assist in work on the fourth, fifth and sixth spacecraft of the series. The COMSAT team, augmented by Erland Magnusson to support the heavy telemetry activity involved in operational rehearsals with the Spacecraft Technical Control Center at COMSAT-INTELSAT headquarters, returns to Florida approximately two weeks before launch.

After exhaustive tests are analyzed to ensure that no change has occurred in the spacecraft in the stand-down period, the satellite progresses to encapsulation. This puts the massive fiberglass nose fairing around the spacecraft to protect it from the atmosphere as the booster accelerates after liftoff.

Martin Votaw, Assistant Vice President—Space Segment Implementation, arrives in Florida just before encapsulation to direct the final phase of each operation.

Fairing Transported

One week before launch the 38-foot tall spacecraft fairing assembly is trundled on a huge flat-bed trailer at a walking pace over the four-mile path to the launch pad. Then, with the time subject to vagaries of Florida thunderstorms, it is hauled up by the gantry crane and secured on the top of the Atlas Centaur launch vehicle.

Due to the pre-encapsulation technique, little remains to be done to the spacecraft itself when on the launch vehicle. Final functional tests and reconditioning of the batteries to ensure their peak condition are carried out from the launch complex blockhouse and Hangar AM.

A COMSAT representative and the Hughes spacecraft manager, however, jointly satisfy themselves that the apogee motor is armed shortly before launch.

Unlike INTELSAT III, the present series of spacecraft is launched with its beacons and other functions active. The majority of the COMSAT personnel, therefore, are involved in the Mission Control Center, the blockhouse and Hangar AM in active monitoring and conditioning of the spacecraft right through the terminal countdown. They see the launch only on closed-circuit TV monitors.

After a successful launch, a press conference precedes a dash by corporate jet to the Spacecraft Technical Control Center at Headquarters which becomes the focal point of the transfer orbit maneuvers.

The apogee motor is fired at the appropriate apogee and the spacecraft is then 'erected' so that its spin axis is parallel with that of the earth. Check-out of the communications system then begins so that the spacecraft can go into revenue-providing service as soon as possible.

Jean Lutwin, from Headquarters in Washington, provides secretarial assistance during prelaunch activities at the Cape.

Merit Raises Frozen

In accordance with President Nixon's announced 90-day wage and price freeze, all merit pay increases for COMSAT employees effective *after* August 14, 1971, have been deferred until restrictions are lifted.

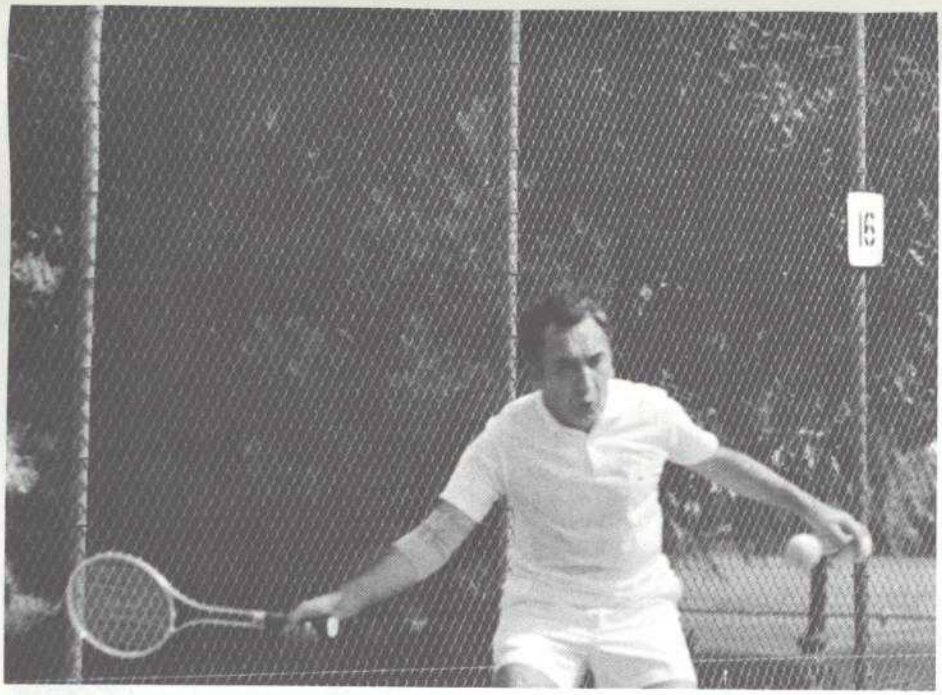
However, under the White House guidelines, the freeze does not apply to pay raises associated with promotions or advancements to vacant, established jobs (exempt or non-exempt) of higher grade and greater responsibility.

David J. Humphreys Killed in Car Crash

David J. Humphreys, 32, Operations Center Controller at Headquarters, was killed in an automobile accident on the Shirley Highway outside of Washington, D. C., on July 26.

Mr. Humphreys joined COMSAT at the Jamesburg Earth Station in April 1968, and was transferred to the Operations Center in November 1969.

He is survived by his wife, Regina, and two children, David and Deanna.



George Szarvas, Labs, shows good form with a strong forehand return.

Herman V. Boley, 76, Succumbs to Typhoid After Trip to Ghana

Herman V. Boley, former executive assistant to the Chairman of COMSAT, died on August 1 in Krefeld, West Germany, of typhoid fever which he contracted on a trip to Ghana in July.

Mr. Boley, 76, was a consultant for Tel Com Corp. of McLean, Virginia.

Mr. Boley was a native of Cleveland, Ohio, and a graduate of Case-Western Reserve University. During the 1950s he was a United Nations representative in Venezuela, Indonesia and England.

At COMSAT Mr. Boley was executive assistant to Leo D. Welch, former Chairman and Chief Executive Officer. Later he worked for John A. Johnson, Vice President-International.

Labs Players Win 7 of 9 Matches

Novgrod Tennis Trophy Stays With COMSAT Labs

For the second consecutive year the Labs defeated Headquarters in COMSAT's Summer Tennis Tournament.

In games played on July 17 at Hains Point, the Labs team rolled to an impressive victory, winning seven of nine matches.

Carl Wenrich, the Labs' singles champion, and Al Kasper, Legal, served as tournament co-directors.

Results of all matches:

Singles

Carl Wenrich, Labs, defeated Lee Battle, Plaza, 6-2, 6-4.

George Szarvas, Labs, defeated Ed Jordan, Plaza, 6-4, 6-4.

Tony Clark, Labs, defeated Al Kasper, Plaza, 6-2, 6-3.

Henry Williams, Labs, defeated Nat Tonelson, Plaza, 6-4, 2-6, 6-4.

Jay Levatich, Labs, defeated John Ball, Plaza, 6-1, 6-0.

Bill Lowe, Labs, defeated Charles Baer, Plaza, 6-1, 6-2.

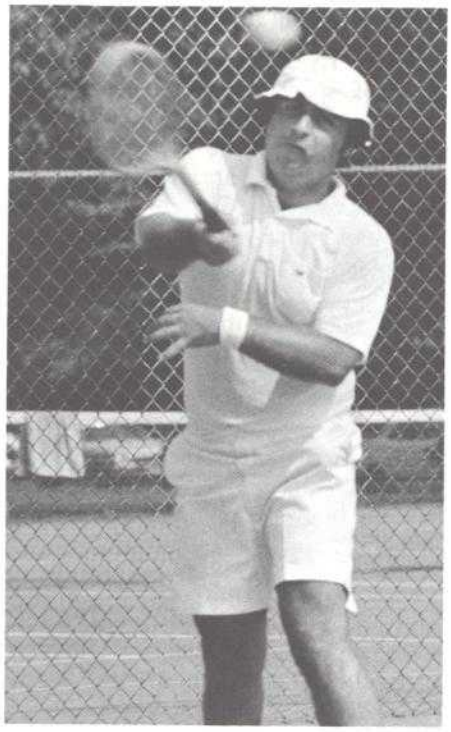
Doubles

Dunlop and Strauss, Labs, defeated McBride and Pocock, Plaza, 9-7, 2-6, 6-2.

Fliesler and Tuttle, Plaza, defeated Patterson and Ramos, Labs, 7-5, 6-4.

Colino and Schachne, Plaza, defeated Dobyns and Kennedy, Labs, 6-0, 6-0.

Rich Colino, Plaza, couldn't return this shot but he went on to win.



Nat Tonelson, Plaza, slams a hard one at his opponent.

Marty Fliesler, Plaza, reaches high for a return.

Al Eleshio takes a breather from his chef's duties.

Under the trees at the JCEA picnic was the most comfortable spot for some.

Jamesburg Holds Its Annual Picnic, 86 Persons Attend for Fun and Sun

By M. Lee Dorsey

The weather was beautiful, swimming was good, and there was a golf course for the golfers. Forty-eight adults and 38 children attended the Jamesburg CEA's fourth annual picnic, held this year at the Bolado Park.

Steaks, hot dogs and lots of other good foods were served by our chef-of-the-day, Al Eleshio. His cooking was, as usual, excellent. Many dishes were brought by the ladies, which made the picnic all the more enjoyable.

Roy Scheiter organized games for all ages. Many prizes were awarded to the youngsters and adults. Jim Clark won the door prize, an onyx desk set. Bob French, Bill Scott and Al Eleshio each won three tickets for the Carmel Valley Little League drawing for $200 worth of meat.

Special thanks are due to JCEA officers who worked to make this a picnic to remember. They include Warren W. Neu, president; Wilfred Nubin, vice president; Larry D. Baley, social vice president; and Roy Scheiter, athletic vice president.

5-Year Awards

The station manager, John P. Scroggs, recently presented 5-year pins to Laurence C. Cisneros, Robert M. French and Melvin M. Stauffer, who are operations supervisors.

Jim Clark displays excellent form as he prepares to swing away.

Roy Scheiter awards a well-deserved prize.

News and Notes From Brewster

Hashberger Represents COMSAT For 5th Time Aboard Recovery Ship

Ramon Hashberger was COMSAT's representative aboard the Apollo 15 recovery ship, *Okinawa*. "Hash" is an old hand at this now, having been aboard ship for Apollo 8, 9, 10 and 13.

Assistant Vice President H. William Wood and Mrs. Wood visited the Brewster Station on July 8.

Stuart Miller, technician, and Marlene Sikes were married on July 12 in the United Methodist Church in Chelan.

The month of June marked the completion of five years of service with COMSAT for five employees at Brewster; Robert Sanderson, electronics maintenance supervisor; Richard Attwood, electronic technician; Darrel Nelson, Ramon Hashberger and Richard Eliason, operations supervisors.

Families enjoying vacations during July and August were the Darold Brownings, Ramon Hashbergers, Harvey Andersens, Jim Erskines, Mel Hofmanns, Mel Tates and Tom Cheesmans. Most of them went camping and fishing in favorite Pacific Northwest vacation spots.

John Gerstner and Liesbeth Bloemen of Oldenzall, Holland, during her visit to COMSAT's Visitors Center.

Foreign students from Belgium, Germany and The Netherlands pose in front of the Plaza antenna during a recent visit to COMSAT.

Story of Satellites Heard by Visiting Foreign Students

John Gerstner, formerly of Marketing and now with the Domestic Project Office, recently gave his "Wonderful World of Satellites" presentation to a group of foreign students from Belgium, Germany and the Netherlands.

Sponsored by the Foreign Study League of Alexandria, Virginia, under the supervision of Mrs. Anne Henes, program coordinator, the students spent a month in the Washington, D. C., area. They attended a series of educational seminars and visited many of the city's outstanding sights.

When asked how he became interested in this particular group, Mr. Gerstner said it all started one evening when his daughter Karen, a senior at Hammond High in Alexandria, requested permission to have one of the visiting students stay with them.

As a result, Liesbeth Bloemen of Oldenzall, Holland, became a temporary member of the Gertsner household and the key to the group's introduction to satellite communications.

Domestic - Aerosat Project Office Staff Members Assigned to Martin

The new Project Office for domestic and aeronautical satellite services, headed by Assistant Vice President John L. Martin, Jr., has been organized and staffed with an initial complement of personnel.

Establishment of the office, known formally as the Domestic and Aeronautical Systems Project Office, was authorized on June 18 in a memorandum from President Joseph V. Charyk.

"This office," Dr. Charyk said, "will be the focal point of the Corporation's effort to establish programs for domestic, aeronautical and maritime communications services."

Mr. Martin and his staff were assigned "the responsibility for the development of all proposals for providing services in these fields and for coordinating participation of all elements of the Corporation in support of these efforts."

In organizing his new staff, Mr. Martin established posts for four directors and 13 managers, plus secretarial positions, and listed an initial group of personnel to staff these positions.

Director of System Requirements—John A. Keyes

Manager for Television Requirements—Irving R. Drill

Manager for Communications Requirements—John F. Gerstner

Director of Domestic Systems—Robert D. Briskman

Manager for Systems Analysis & Design—Kenneth F. Manning

Manager for Space Segment—W. Coleman Guthrie

Manager for Operational Development—Robert D. Swensen

Director of Aeronautical & Maritime Systems—Edward J. Martin

Manager for Requirements Analysis—Thomas O. Calvit

Director of System Financial Planning & Analysis—Gerard R. Engel (effective full-time October 18).

Manager for System Costs & Revenue Requirements—Thomas Gabriszeski

Selection of these men, all from within the Corporation, was made after consultation with supervisors of the functional areas involved, necessary approvals, and acceptances by the individuals. Other assignments will be made and announced later to complete the staffing of the Project Office.

Space for offices was being arranged on the sixth floor, west end, of the Plaza building.

Mr. Martin joined COMSAT in February of 1970 and was named Assistant Vice President for Domestic and Aeronautical Satellite Systems a year later. He retains that title, reporting directly to Dr. Charyk.

Washington CEA News and Notes

120 Employees and Guests See Colts Defeat Redskins

By Beverly Nitkowski

Approximately 120 Washington CEA members and friends saw the Washington Redskins-Baltimore Colts professional football game on August 28 at R. F. Kennedy Stadium.

Another throng of CEA members and guests watched the Redskins-Cincinnati Bengals game on September 11.

Table Tennis Going Strong

For those of you who are firm believers in physical fitness, the TTC of the Labs and Plaza provides lunch time recreation at no cost.

Basketball Season Nears

The Girl's "Long Shots" Basketball Team is currently practicing every Tuesday evening under the direction of Ty Ricks, coach. The girls said that since they got an early start, they feel a "winning streak" coming on. Coach Ty has stated that this will be a new experience, but with morale like that who could possibly lose!

The team this year will mainly consist of the 1970 cagers with the addition of a few rookies. All looks well for a fruitful season.

Volleyball

The "Plaza Villains", an intramural team, has been playing volleyball on Monday nights at a court obtained by CEA through the D.C. Recreation Department. John McManus heads up the team.

Football and Basketball

WANTED: One football coach for Plaza Grid Boys and one basketball coach for Plaza Cagers (men's division).

Anyone who is interested in playing and/or coaching should contact Jack Dicks on Ext. 6864.

Bowling

John Maddox is continuing to organize a bowling league for the fall. Interested? Give him a call on Ext. 6851.

European Holiday

In a recent flyer, the CEA Board of Directors announced plans for a trip to London and Paris in the early spring of 1972. The group price is approximately $450 per person; a minimum of 40 people is needed.

Tentative plans include spending one week each in London and Paris, a sightseeing tour in each city, and discount tickets to theaters. Accommodations will include private bath and continental breakfast. Transportation will be provided between airport and hotel in Europe.

If you desire more information, Jim Smith, Room 5151 at the Plaza, is the man to see. If you already have all the information you need, start saving your money for your two-week European Holiday.

Satellite Jewelry

Need a little something for that distant friend or cousin at Christmas? Beat the holiday rush and get your satellite jewelry now from Pat Lamphear at the Plaza or Dolores Hess at the Labs.

Shady Grove

Discount tickets to Shady Grove Music Fair are available through the CEA. Contact Emogene Madison at the Plaza or Judy Martin at the Labs for tickets and dates and times of performances.

United Buying Service

Want a new carpet, but can't afford the high cost? Call UBS, your one stop discount shopping center for furs, autos, carpets, furniture and appliances. Phone: 657-1920.

Chess Club

Jim Shreve, president of the Chess Club, is looking for new players. If you don't play chess, but would like to learn, give him a call on Ext. 6544.

Photography Club

At a recent meeting, the Photography Club elected new officers. Bob Kotell came out on top of the slate, and Jim Tallon was elected vice president. Carl Sederquist won the office of secretary.

An excellent exhibit was recently displayed on the fourth floor at the Plaza. Jim Tallon said another manifestation will be coming soon for those of you who missed the last one.

The club meets bi-weekly. If interested in teaming up with the camera bugs, contact president-elect Bob Kotell on Ext. 6810.

Boating Club

If the idea of sailing down the Potomac on a colorful autumn day "tickles" your fancy, then you will want to join the Boating Club. Elizabeth Preston, club secretary, has assured us that no one has become contaminated from polluted waters, as yet. See Elizabeth or Norm Schroeder, president, for details on membership.

COMSAT Emblem contest

Have any artistic talent? Want to be the one to say, "I designed that"? Well—get with it! You still have time to get your entry in. If you have any questions or suggestions, contact Jim Tallon at the Plaza. Contest closes September 30.

Social Calendar

Kitty Stephenson and Bob Cool, CEA's social co-chairmen, have announced the schedule for the remaining social events of the year.

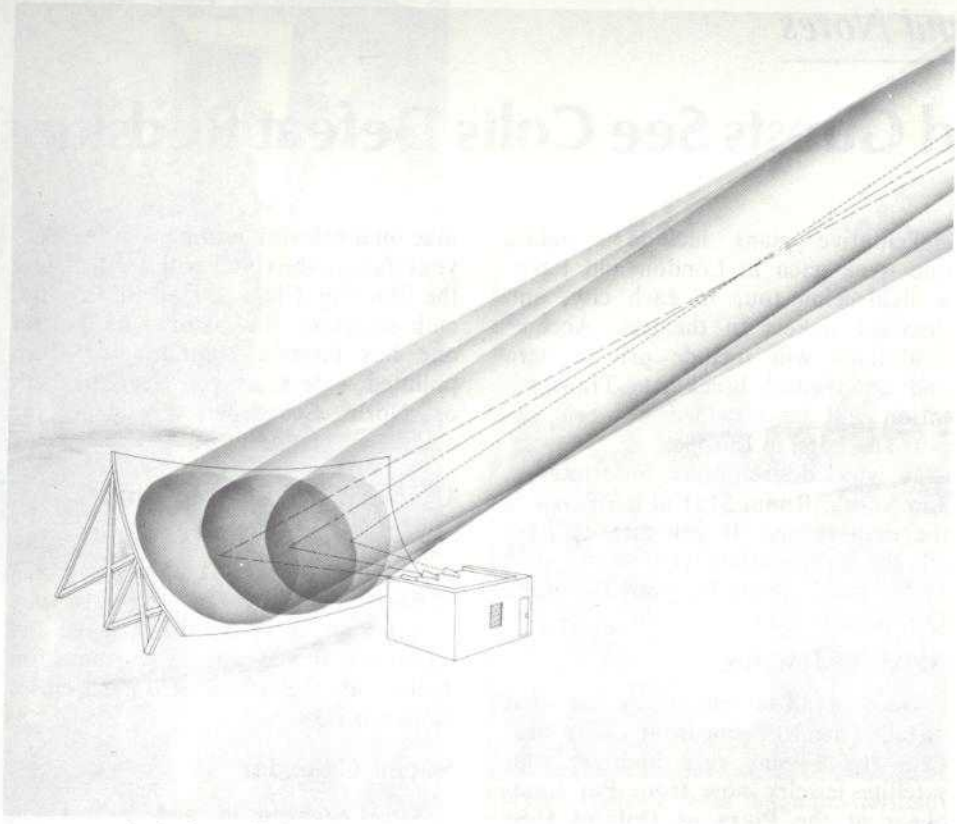
The Fall Cocktail Party has been set for September 24 at COMSAT Labs. The event will be held in the cafeteria dining room and patio. A delicious buffet catered by the Hot Shoppes will consist of cold cuts, cheese varieties, relish trays, potato salad, cole slaw, breads, crackers, coffee and other goodies. Cocktails will be served. A dance band will provide music for all ages. Price of tickets is $1.50 per CEA member and $2.50 for nonmembers. Watch for flyers announcing ticket sellers.

The Children's Christmas Party will take place Saturday, December 11. All members' children under 10 years of age are welcome. Christmas goodies and fun will be plentiful, and of course Santa Claus will be present.

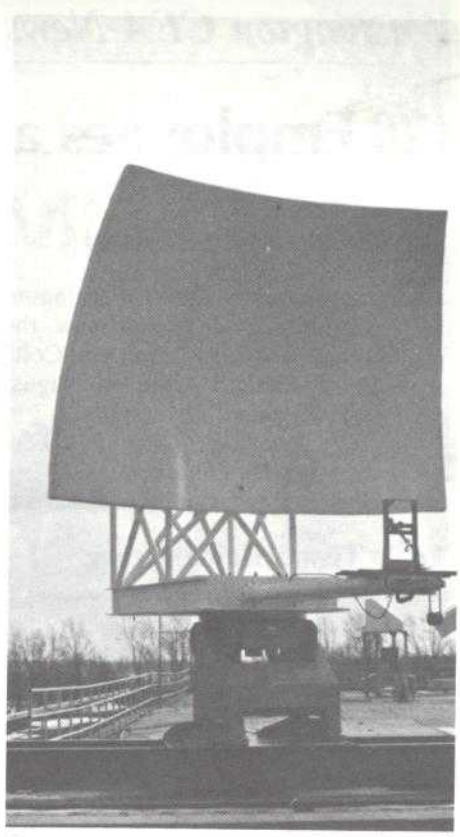
The Annual Dinner Dance, CEA's biggest event of the year, will be held Saturday evening, December 18, 1971, at the Shoreham Ambassador Ballroom. A reception prior to the dance will take place in the Regency Room Lounge. Two bands will provide continuous music throughout the entire affair. Watch for flyers giving details.

Farewell

Since I am leaving COMSAT to complete work on a degree in astronomy at the University of Virginia, I should like to take this opportunity to thank all those who have helped me with these columns for the COMSAT *News*—*Bev Nitkowski.*



Artist's rendition of multi-beam fixed reflection earth terminal.



Experimental toroidal reflector on roof of COMSAT Labs.

Reliable Earth Terminal Program Holds Promise for Future Stations

At the 1970 corporate R&D planning conference a proposal was adopted to begin a long-term program to develop a new kind of reliable earth station. The idea behind the project was: if satellites can be designed to operate unattended in space for seven years or more, why can't we do something similar with earth stations?

Now underway, the Reliable Earth Terminal Program has very specific objectives: a maintenance interval of 90 days; sufficient redundancy to permit uninterrupted operation for at least 48 hours after a failure; a useful life of 10 years or more; centralized control of a number of stations from a regional center; and modular, easily replaceable subsystems. The system model used as a basis for planning was a domestic or regional system employing two satellites and several hundred earth terminals.

The Torus Reflector

The steerable antennas presently used in the INTELSAT system are subject to displacement by gusty winds, and require a complex system of sensors and motors to compensate for the small but significant changes of position. A small angular change of the antenna position can seriously impair transmission to the satellite 22,300 miles away.

It has been recognized for some time that there would not be a need for auto tracking at an earth station in a domestic system. The short arc in space above the equator which would be occupied by U. S. domestic satellites would permit steering the beam along this arc by changing the position of the antenna feed.

One antenna reflector shape which enables this to be done is called a "torus," parabolic in one direction and spherical in the other, so that moving a feed across its face directs the signal beam across the equatorial arc. By using several feeds, it is possible for one earth terminal to work with several satellites at the same time. *(See sketch above.)*

Ongoing Experiments

Visitors to COMSAT Laboratories may see a toroidal reflector on the roof of the Labs building. This experimental antenna is being tested and used to gain experience for future unmanned earth terminals.

An operating experimental earth terminal is planned for construction at the Laboratories during 1972.

From Page 24

Arrangements

States of America in designing, developing and perfecting today's communication satellite network, the United States for its part has been more than aware of the opportunity of accepting many of the technical, economic and political specific requirements set forth by other INTELSAT members."

Importance Stressed

Ambassador Ortona concluded by saying that "we are signing these agreements today in pride and humility and in the awareness that we are enshrining the names of our countries, and our own, in one of the most important pioneering documents in the history of mankind."

The evening preceding the opening of signatures to the Definitive Arrangements, the Corporation hosted an 8th floor reception in L'Enfant Plaza for signatories to the new agreements, government officials and COMSAT directors. During his remarks to the group, which included Arthur C. Clarke, the noted British science writer, Dr. Charyk recalled the remarkable advances made in satellite communications since the Communications Satellite Act of 1962 became law.

COMSAT Joins In New Venture

COMSAT and the Government of Nicaragua have joined in the formation of a new private company known as NICATELSAT to provide expanded international communications services for Nicaragua.

Satellite Communications Corporation of Nicaragua (NICATELSAT) was incorporated August 6 following ceremonies in which the formal corporate charter was signed at the Palacio de Comunicaciones in the capital city of Managua.

A new earth station will be constructed by NICATELSAT outside of Managua to provide international telecommunications services to the Central American Republic. Negotiations with earth station suppliers began in August. The station is expected to be in service before the end of 1972.

In the joint undertaking, COMSAT will own 49 per cent of the stock of the new company and TELCOR, the Nicaragua telecommunications and postal entity, will own 51 per cent. Establishment of the company represents a new venture abroad for COMSAT, its first participation outside of the United States in another communications company.

John A. Johnson, COMSAT Vice President-International, and Col. Florencio Mendoza Guillen, Director General of TELCOR, acted as incorporators of the company. Two COMSAT officers and three Nicaraguan officials were named to the five-member board of directors. They included Mr. Johnson, James J. McTernan, Jr.; COMSAT Vice President-Finance & Administration; Luis Valle Olivares, personal secretary to the President of Nicaragua; Major Alberto Luna Solorzano, head of the Nicaraguan National Radio, and Colonel Mendoza of TELCOR as Chairman of the Board.

Under a management contract COMSAT will provide personnel to supervise the construction of the station and supervisory personnel to operate it once the station goes in service.

To head NICATELSAT, the board named Luis C. Gonzalez Ramirez as General Manager; Donald R. Owen, Director of COMSAT's Technical Advisory Division, was named Assistant General Manager.

Months of legal preparation was handled by William D. English, COMSAT Assistant General Counsel for International Matters.

On behalf of COMSAT, John A Johnson signs the articles of incorporation of NICATELSAT in Managua, Nicaragua, on August 6. Standing (from the left) are Dr. Luis Valle Olivares, James J. McTernan, Jr., and Col. Florencio Mendoza.

The Plaza Scene

Washington Employees Travel Far

By Harriet Biddle

The scene at the Plaza for summer is people "doing things and going places." Many of our staff have been vacationing at the beaches, traveling to far-off places and taking advantage of such local entertainment spots as Shady Grove, Wolf Trap, Carter Barron Amphitheater, Merriweather Post Pavilion, dinner theaters and Watergate concerts. While "beating the heat" is always the predominant summer preoccupation in Washington, many of our more recreationally inclined are "making the scene" at nearby pools, tennis courts, softball diamonds, golf links and parks.

Among our travelers abroad are Marion Timmons, Elizabeth (B.J.) Weir, Matthew Gordon and Allan Galfund. Marion returned from an exciting tour of the southern countries of Europe with a "new outlook on life" and, incidentally, to a new job with Bill Berman, Assistant Vice President and Associate General Counsel. B.J. and her husband, an adventurous twosome, are hitch-hiking their way through Europe. A highlight of Mr. Gordon's trip (which included several European countries as well) was a visit to Israel, where, in Tel Aviv, his family joined their son, Michael, a Colgate student who has been taking a junior semester there.

During their extensive tour of Israel and the Holy Land, they found themselves taking a "salty" dip in the Dead Sea. In Jerusalem, by the Sea of Galilee, they enjoyed several days of living "kibbutz style."

The Gordons then went to France, England and Holland. They commuted to London from a friend's house in Guilford, Surrey, and stayed at a Bo-Tel on the water in Amsterdam.

Allan Galfund flew from Venice to Yugoslavia where he traveled on the Adriatic Highway parallel to the Adri-

(See Plaza Scene, Page 20.)

From Page 19

Plaza Scene

atic Sea from Split south to Dubrovnic.

Ruth O'Donnell and her husband spent a relaxing time by a lake in the mountains of Canada and stopped off in Montreal to see EXPO. Traveling in the U.S.A., Pete Ferrandino returned from a two-week holiday in Sarasota, Florida, and Bill Barr enjoyed a trip to Cape Cod.

June Burton flew to Terre Haute, Indiana, to attend the celebration of her parents' 50th wedding anniversary, Joan Wright lived it up in L.A. for a week, and Artie Castagnola enjoyed visiting her parents in Fort Lauderdale in August.

The M&S Service Center held its Annual Picnic on July 24 at Banner Park on Sugar Loaf Mountain. Great quantities of hot dogs, hamburgers, and beverages were consumed by the employees and their families, who also enjoyed such activities as volleyball, pitching horseshoes, and jumping rope in the rain.

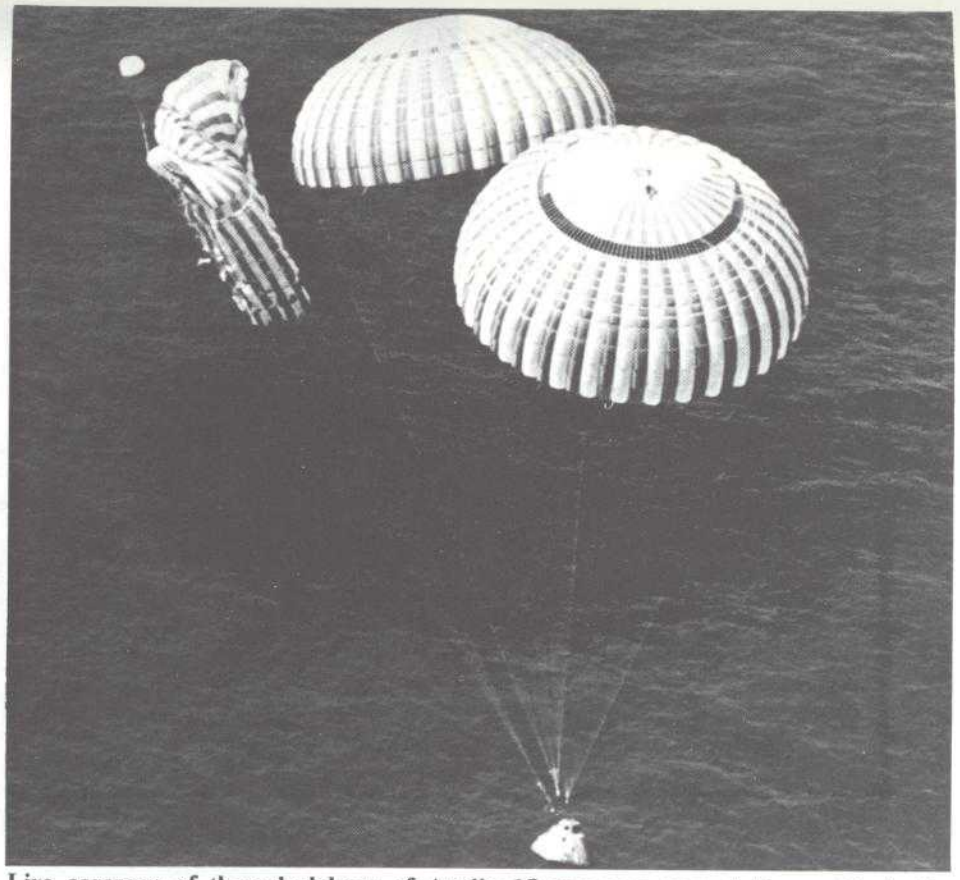
Also in the news at the service center was Irwin Rowe and his wife Shelly, who proudly announced the Bar Mitzvah of their son, Barry, at the B'Nai Israel Synagogue on August 7. The Rowes, Irwin (coach) and Barry (shortstop), are members of the Beltsville Boys' Club Baseball Team which recently won its division championship and is entered in the Prince Georges County Championship Finals.

Congratulations go to Alan Kasper, Legal, who was recently made Counsel for Patent, Data and Trademark Matters. Other news from Legal is that Martin Fliesler is looking forward to the addition of a new baby to his family in February.

Judy Martin at the Labs will be the representative-at-large candidate for Secretary of the CEA Board to replace Beverly Nitowski who is leaving COMSAT to attend the University of Virginia at Charlottesville this fall. We will all miss Bev's vivacious personality around here and wish her great success. As well as can be interpreted, her present ambition is, in brief, "to settle legal problems in outer space" for she will be an astronomy major and plans to go on to law school.

Linda Arnold, a former COMSAT employee, gave birth to a son, William Harry, Jr. on June 22 and will soon be returning to COMSAT.

And that's the scene for now at the Plaza . . .



Live coverage of the splashdown of Apollo 15 was seen around the world via the satellite system.

Widespread Apollo 15 TV Coverage Second Only to Apollo 11 In Volume

The Apollo 15 mission, from lift-off on July 26 to splash-down on August 6, became the second most widely televised space flight. Only Apollo 11, the first manned landing on the moon, resulted in more TV volume.

A comparison of TV channel hours via the satellite system shows the following:

	Transmit Hours	Receive Hours
Apollo 11	104:48	229:26
Apollo 15	69:21	106:10

Preflight tests for Apollo 15 required additional TV service, bringing the total time for all aspects of the mission to 83:04 hours of transmit time and 119:56 hours of receive time.

Before Apollo 15, the second most intensively covered flight had been Apollo 12, which resulted in 41:43 hours of transmit time and 87:12 hours of receive time.

Of the various events in the Apollo 15 mission, the most intensively covered was the first extra-vehicular activity when Astronauts Scott and Irwin deployed the scientific data package and the lunar rover to begin their drive on the moon. For this event, transmit time via the satellite system totaled 17:16 hours and receive time totaled 30:59 hours.

During this event, the number of receiving foreign earth stations reached its peak (10) for the mission. These stations were in Italy, Brazil, Puerto Rico, the Democratic Republic of the Congo, Venezuela, Argentina, Japan, New Zealand, the Republic of Korea and Nigeria.

The Fucino, Italy, station served as the reception and distribution point for Europe, with the European Broadcasting Union sending feeds to the United Kingdom, Ireland, France, Luxembourg, Belgium, the Netherlands, Germany, Austria, Denmark, Sweden, Norway, Finland, Switzerland, Yugoslavia, Tunisia, Spain, Portugal, Greece, and Monaco.

Intervision, the communist-bloc TV service, sent feeds to the Soviet Union, East Germany, Czechoslovakia, Hungary, Rumania, Bulgaria and Poland.

For New Zealand and the Democratic Republic of the Congo, which have the two newest earth stations in the system, reception of Apollo 15 coverage was their first direct participation in live TV of a space flight.

Tony Tolebao, part-time maintenance man at the Paumalu station, expertly accompanies himself on the ukelele while singing a popular island song for the entertainment of employees and guests at the Paumalu picnic. And what is a picnic without a gaggle of women discussing fashions, recipes and women's lib? From the left, they are Winnie Wong, Rita Gray, Betty Ogata and Irene Elder.

News and Notes From Paumalu

Picnic Draws 100 Employees, Guests

The annual Paumalu CEA picnic, the first of two big social events sponsored by the local association for the year, was held on Sunday, August 1. Station employees, their families and guests enjoyed a full day of outdoor games, swimming, and an abundance of food and refreshments.

An avid picnicker, sitting under the shade of a towering ironwood tree and enjoying the scenery with a bottle of primo (local refreshment) in one hand, best described the outing by saying, "this is really island living"—a phrase connoting the recreational and cultural amenities which make living in Hawaii so pleasant.

Ken Yamashita, newly elected president of the Paumalu CEA, chaired the entire day's activities. Assisting Ken in the multitude of chores connected with taking care of approximately 100 picnickers were the following: Charlie Wong, Ken Elder and Eddie Miyatake who handled the food and refreshments; William Osborn, games; and Frank Meyer, facilities.

Summer . . . Vacation . . . Travel

Three Paumalu employees and their families recently packed their suitcases and spent their vacations away from home. Senior techs Charlie Kraft and Rick Senones vacationed on the Mainland, doing some sightseeing and visiting friends and relatives, while Joe Chow, facilities engineer, decided to spend his vacation on the lush neighbor island of Kauai.

Mrs. Thelma Park, station secretary for the past two years, resigned for maternity reasons.

Golf Champs Tee Up

Eight golfers representing Paumalu in this year's Operations Golf Tournament teed off on Sunday, August 15, at the Makalena Golf Course, determined to retain the championship trophy awarded the team in last year's tournament. The two foursomes which made up the station's entries were as follows:

Team 1—Eddie Miyatake, Ronald Miyasato, Gilbert Estores, Robert Thorpe. Team 2—Castor Corpuz (defending champion), Stanley Holt, Leslie Goya and Paul Motoyama.

Castor Corpuz remarked before teeing off that the team trophy, currently adorning the station lobby for all visitors to see, is too beautiful to relinquish, and therefore, all team members would be at their best.

Briskman Will Serve As Session Chairman During EUROCON 71

Robert D. Briskman, Domestic Project Office, will serve as a session chairman for EUROCON 71 to be held in Lausanne, Switzerland, October 18-22, 1971.

Sponsored by the IEEE, the meeting will bring together scientists and engineers from the major countries of Western Europe to discuss a variety of technical subjects including satellite transmission.

Mr. Briskman will be responsible for a session dealing with predicting and optimizing satellite communications performance.

E. R. Cacciamani, COMSAT Labs, is scheduled to present a paper discussing SPADE system transmission of data.

Attenuation Study Contract Awarded

COMSAT on behalf of INTELSAT has awarded a study contract to the British Aircraft Corporation, Ltd., of the United Kingdom, to establish estimates of the effects of weather and various forms of precipitation on communications utilizing the 10 to 40 gigahertz range.

The $39,787 study will provide detailed estimates of the attenuation or weakening of transmitted high frequency signals from satellites to earth stations during seasonal weather variations, such as thunderstorms, rainstorms, hailstorms, etc.

INTELSAT Expands

The Republic of Gabon became the 80th member of INTELSAT on July 23 when Ambassador Bouckat-Bou-Nziengui signed the Special Agreement.

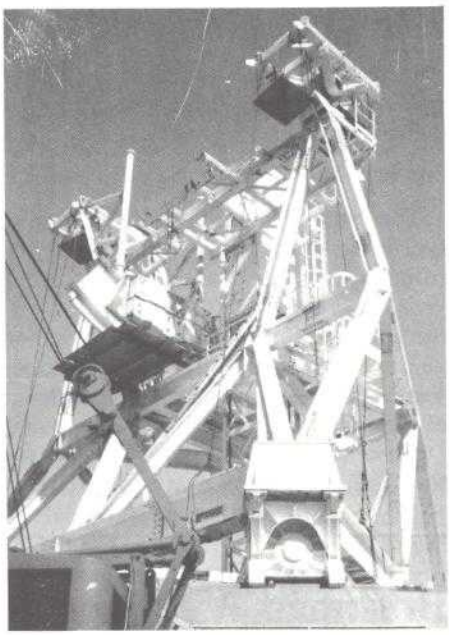
More Changes at Andover . . .

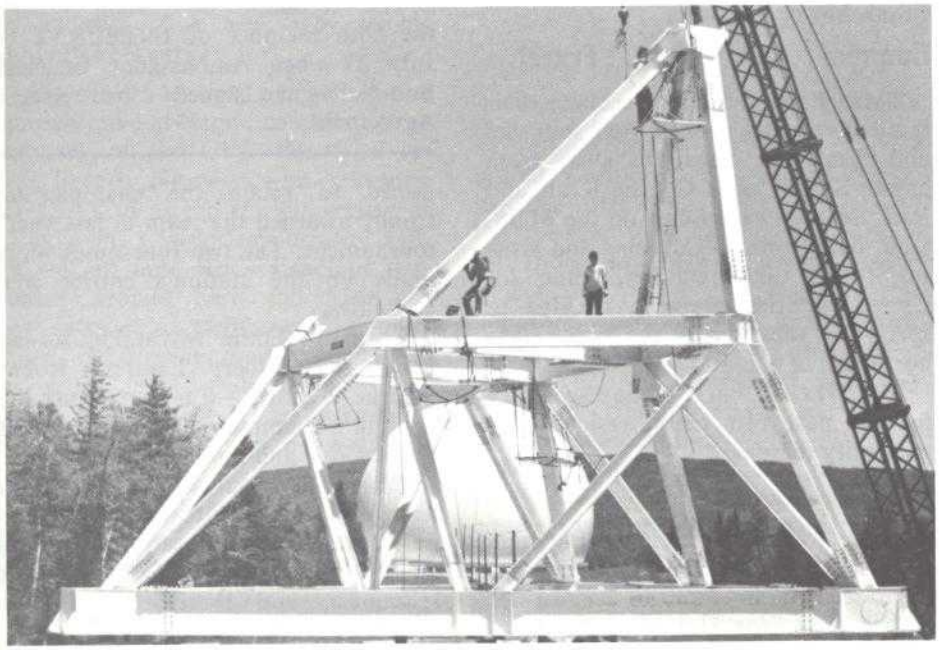
To replace the pioneering horn antenna at the Andover earth station, a large standard dish antenna is under construction, as the accompanying photographs show. The new antenna is expected to be in service by the end of this year.

Other major expansions are planned for U.S. earth stations on the East and West Coasts to provide capacity for higher traffic loads and redundancy for continuity of service.

Second large antennas are planned for construction at both the Andover and Etam stations. At the Brewster station, an expansion of capacity also is planned.

This program will provide capability for full restoration of service in the event of an earth station failure on either Coast. If either the Andover or Etam station should suffer failure, full restoration of U.S. service in the Atlantic region could be provided by the other station.





COMSAT Radio Club Members Hold Field Day

During the weekend of June 26-27 the COMSAT Amateur Radio Club in company with the IBM Gaithersburg Radio Club took part in the annual Amateur Radio Field Day. The purposes were to demonstrate emergency communication potential and enjoy the outdoor life.

Four separate stations under the IBM club call WA3JZR were set up; one on the 50 and 144 MHz VHF bands, one single sideband station and one CW station for 3.5 and 7 MHz, and one station for 14, 21 and 28 MHz.

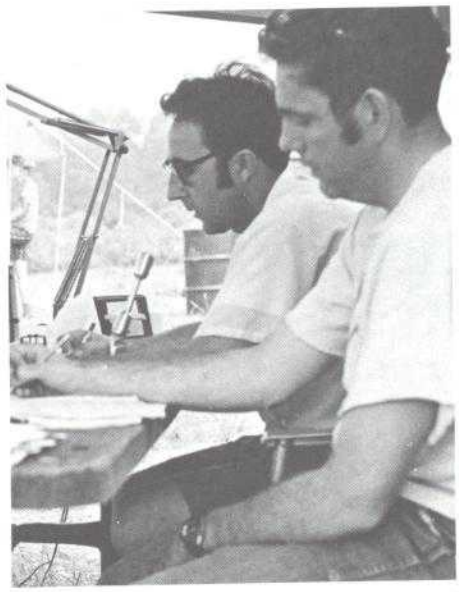
Over 1,200 contacts were made with other similarly situated groups and individual amateurs throughout the world. All electrical power was provided by gasoline engine-driven generators.

The weather couldn't have been better, and in fact, Murphy's Law ("if anything can go wrong, it will") took effect only once during the raising of a beam antenna.

Thanks to Bob Brown of IBM and his wife, all participants were treated to a touch of haute cuisine for Saturday's dinner.

The beam antenna collapses on the amateur radiomen, but it later was erected to stay.

Laurie Gray operates the 3.5 and 7 MHz CW station.



Wilf Maillet, Cal Cotner operate 14 MHz station.

Cal Cotner, Norm Miller, Laurie Gray put up 144 MHz antenna.

From left, Bob Brown (IBM), Wilf Maillet, Junior Cannon (IBM), Mrs. Brown and Norm Miller at gourmet picnic supper.

COMSAT President Dr. Joseph V. Charyk and Secretary of State William P. Rogers sign the new INTELSAT agreements during ceremonies at the State Department in Washington.

New INTELSAT Agreement Signed By 55 Countries at State Department

Definitive arrangements for the International Telecommunications Satellite Consortium (INTELSAT) were formally opened for signature in the International Conference Room of the U.S. State Department on August 20.

The intergovernmental agreement was signed by 55 countries, 52 of which are currently INTELSAT members.

The companion intergovernmental and operating agreements which comprise the Definitive Arrangements will remain open for signature for a period of 18 months, or until February 20, 1973.

At the opening ceremonies, 14 INTELSAT member countries representing 59.49 percent of the investment quotas signed the intergovernmental agreements without need for ratification, acceptance or approval.

Signatures were affixed to the intergovernmental agreements by 38 INTELSAT member countries representing about 22 percent of the investment quotas, subject to ratification, acceptance or approval.

In addition, three countries, Burundi, Costa Rica and Haiti, also signed the intergovernmental agreement, subject to ratification which would result in INTELSAT membership upon entry into force of the agreements.

A total of 28 countries representing about 18 percent of the investment quotas did not sign the new agreements at this time.

Secretary of State William P. Rogers signed the intergovernmental agreement on behalf of the United States.

Dr. Joseph V. Charyk, President of COMSAT, signed the operating agreement on behalf of COMSAT as the designated U.S. telecommunications entity.

The signatures of Secretary Rogers and Dr. Charyk carry full powers since they were authorized by Executive Order of the President of the United States.

Two-Thirds Required

Signatures to both agreements (not subject to ratification, acceptance or approval) are required by two-thirds of the INTELSAT membership (at least 54 countries as of August 20) which also hold two-thirds of the investment quotas.

The agreements will enter into force 60 days after the required signatures have been obtained, but no earlier than eight months or later than 18 months after August 20, 1971, the opening date.

In his opening remarks, Secretary Rogers introduced Mrs. Mamie Eisenhower and recalled that "the first voice beamed to earth from a communications satellite was that of President Eisenhower" in December 1958.

Mr. Rogers noted that the representatives of 79 nations had hammered out the two lengthy and complicated agreements. "To me," he said, "this demonstrates convincingly that despite differences in language, culture, national philosophy, economic status and technological development, nations can agree on practical and peaceful scientific breakthroughs for their mutual benefit."

"What enormous implications this holds," he added, "for the future in terms of promoting the climate for peace, extending education to all corners of the world, and eliminating misunderstanding."

Mr. Rogers said that he had a particular appreciation for one use of the global system when he, in Washington, and Foreign Minister Aichi, in Tokyo, simultaneously signed the Ryukus Treaty by satellite.

Satellite Diplomacy

"We watched each other on our television monitors, while millions of citizens of our countries watched the event on their television sets. This was but the first, I am sure, of such examples of 'satellite diplomacy' in the future."

He closed by saying that "long after most of the issues and conflicts that concern us so deeply today are consigned to the history books, this remarkable system of global communications will be part of the daily lives of billions of citizens of this planet, informing them continuously and—we may all hope—bringing them closer together in mutual understanding."

Speaking on behalf of other signatories to the agreements, the Italian Ambassador to the United States, Egido Ortona, said:

"In the course of the lengthy Conference which brought about the Definitive INTELSAT Arrangements, it is only natural that all of us at one time or another would have differences of opinion and interest. These have finally been compromised and composed in the spirit of mutual respect and consideration, in a truly democratic process of finding solutions acceptable to all."

"This has meant in practice," he added, "that, while every member has been ready to recognize and respect the needs which were inherent to the tremendous scientific, technical, and financial contribution of the United

(See Arrangements, Page 18.)

COMSAT NEWS

October 1971

COMSAT Seeks Authority for 2 More Antennas

Communications Satellite Corporation has applied for authority to construct two new antennas and associated equipment to provide full U. S. earth station backup facilities for Atlantic Region satellite communications.

The proposed new facilities, to cost an estimated total of $7 million would be located at existing earth station sites, one at the Andover, Maine station complex and one at the Etam, West Virginia site.

The applications, filed before the Federal Communications Commission, were submitted by COMSAT as Manager on behalf of the joint owners of the existing stations: itself, American Telephone & Telegraph Co., ITT World Communications, RCA Global Communications and Western Union International.

The new large antennas and related facilities would provide full restoration capability in the event of a catastrophic failure of either the Andover or Etam station, thus enhancing service reliability and flexibility.

In 1973, when the new antennas would first become available, traffic plans indicate that two INTELSAT IV satellites will be operational over the Atlantic, requiring the use of two East Coast earth station antennas for U. S. service. The restoral program would permit either station, Andover or Etam, to fully backup the other if a failure should occur at either station.

The facilities would include large antennas 97 feet in diameter or larger, transmit and receive amplifiers, ground communications equipment, multiplex-demultiplex equipment, power sources, buildings and necessary civil works. The antennas would be a wheel-and-track design, similar to the fourth-generation Bartlett Earth Station in Alaska and also similar to a new antenna now being installed at Andover. They would be connected to, and remotely operated from, existing control buildings at each site.

October 1971—Year 6, Number 7

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Largest of Its Kind

Earth Station Seminar In Washington Draws From Over Thirty Countries

Delegates from more than 30 countries gathered in Washington to attend a five-day Earth Station Performance Seminar to discuss common operational problems and ways of improving system reliability.

Sessions of the October 11-15 meeting, sponsored by INTELSAT and hosted by COMSAT, were held in the Galleries Room of the Statler-Hilton Hotel. Simultaneous French, Spanish and English interpretations were provided.

The focus was on methods of reducing short-term outages to improve system reliability and performance.

It was the largest meeting of its kind to be held to discuss operational matters covering all three regions—Atlantic, Pacific and Indian Ocean areas. In May 1966 an Earth Station Seminar held at the State Department was conducted largely by manufacturers and emphasized station technology and equipment. There were only five earth stations in commercial service then, and services via Early Bird provided the only operational experience.

The current performance seminar was designed to take advantage of the operational knowledge gained in the past 5½ years in the global INTELSAT system, and provide an open forum to discuss ways of further improving system performance.

More than 45 individual papers were prepared for the seminar; more than half by non-U.S. participants, the others by COMSAT authors. The agenda included papers dealing with effects and measurement of short outages, earth station equipment, station organization and O&M, new developments and on the final, fifth day, discussion of general earth station problems.

Titles of papers included:

"Monitoring of Short Outages," "Antenna Autotrack/Drive Unlocking Circuit" (Philippine paper), "Qualitative Maintenance" (Australian paper), "Reliable Transmitters" (COMSAT paper) and "Digital Process Control System for Earth Station Applications" (German paper).

The meeting included a visit for delegates to COMSAT Laboratories.

Reiger Contributions Cited in AIAA Award

The American Institute of Aeronautics and Astronautics recently announced that its 1971 Aerospace Communications Award will be awarded posthumously to Siegfried H. Reiger.

The award cites Mr. Reiger's "personal contributions over a 10-year period, in analytical work evolving basic concepts and in the organization and implementation of the INTELSAT program which led to the establishment of the present worldwide communications satellite network".

The award will be presented to his widow, Mrs. Irma Reiger, on October 28, 1971, at the honors banquet, which concludes the AIAA 8th Annual Meeting.

Mr. Reiger served as COMSAT's Vice President-Technical from May 1964 until his death in July 1970.

First Service Planned For 5 New Stations

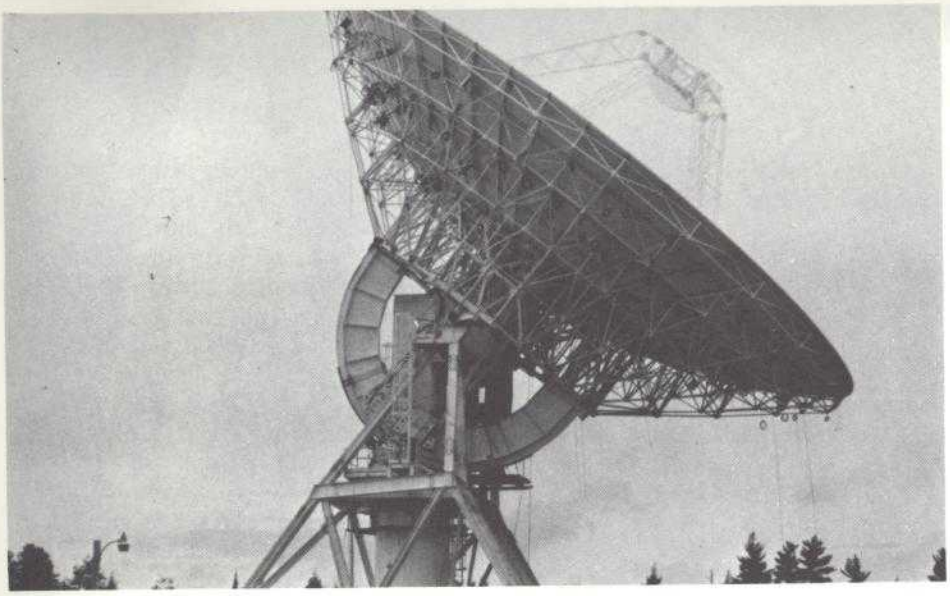
Five new earth station antennas were scheduled to enter service in October. They included Prospect Pen, Jamaica; Matura Point, Trinidad, and Balcarce, Argentina (second antennas), all for Atlantic services; Ibaraki, Japan, (new antenna) for Pacific service, and Hong Kong (new antenna) for Indian Ocean service.

They will increase the world wide boxscore to 61 antennas at 49 stations administered by 37 countries.

A new antenna scheduled to start service soon at Andover is a replacement and not an additional antenna in the system.

On the Cover

This helicopter view of the Air Force's Eastern Test Range at Cape Kennedy shows Complex 36 in the immediate foreground. Complex 36 consists of Pads A and B, which are used for INTELSAT launches. Both of them contained stages of Atlas Centaur vehicles when this photograph was taken in early October. On the right is the Atlantic Ocean. Far to the north and barely visible in this photograph is NASA's Manned Space Center.



The new antenna at Andover nears completion.

4th Generation Antenna at Andover Scheduled for Atlantic Service Soon

The new antenna at Andover will soon take over the commercial chores which have been handled by the venerable "horn" antenna.

The new $1.5 million installation is being checked out, tested and should be ready soon for commercial operation in the Atlantic region.

It features a wheel-and-track design with a 97-foot diameter antenna, similar to the Bartlett Earth Station antenna, representing the "fourth generation" in the evolution of earth station design. A corridor connects the base of the antenna structure to the central control building.

Electric de-icing equipment mounted on the back of the reflector face will keep the antenna free of ice and snow. Similar equipment is in use at Etam in West Virginia and Bartlett in Alaska.

The largest contractual share for the project, approximately $1.3 million, was awarded to Philco-Ford's Western Development Labs for the antenna. COMSAT's Earth Station Implementation Division at Headquarters was responsible for installation of other electronic equipment and integration of all components.

The new structure, a modern addition to an old site, will greatly improve the performance and reliability of the Andover complex. However, the stark steel girders of the new installation contrast vividly with the "bubble" radome housing the horn antenna.

The later facility was built by AT&T in 1961-62 as part of the Telstar experimental program. The big enclosed antenna was updated by COMSAT for commercial service and operated as the only North American station with Early Bird in 1965.

Recently, COMSAT asked the Federal Communications Commission for authority to retain the horn antenna on a caretaker status to provide limited contingency restoration capability for the Etam and new Andover antennas.

COMSAT also has announced plans for construction of second antennas and related sytem electronic equipment at Andover and Etam for operation in 1973 to provide a complete traffic restoration capability for U.S. Mainland satellite communications in the Atlantic Ocean region.

The operational date for the new antenna depends on the result of spacecraft tests and on spacecraft performance of the INTELSAT IV, F-3 satellite.

The new antenna could be put into commercial service before the end of November, handling all the traffic now being carried by the horn antenna via INTELSAT III, F-7. At present, that amounts to some 500 circuits between the U.S. and England, France, Morocco and Greece.

Floating Holiday

The Personnel office has announced that the Corporation's 1971 floating holiday will be observed on Friday, November 26, following the regular Thanksgiving Day holiday.

Most regular full-time employees at the Plaza and the Labs will thus be able to enjoy a four-day weekend.

Atlas Centaur Guidance Test Delays Launch

The second launch in the INTELSAT IV satellite series is planned for the near future at Cape Kennedy, Florida. The launch was scheduled to take place in mid-October. But when a problem was encountered during qualification testing of a launch vehicle guidance component, NASA postponed the launch to permit further analysis and evaluation.

The next satellite is intended for service over the Atlantic Ocean to supplement the first INTELSAT IV series satellite, which was launched last January. With two INTELSAT IV series satellites in service over the Atlantic, providing an average capacity of 5,000 telephone circuits each, the INTELSAT III satellite now in service there would become available for transfer to the Indian Ocean to augment service in that region.

Depending on the date and results of the second IV launch and the operational condition of the IVs then in orbit, a third launch is planned for this winter; the third satellite is presently intended for Pacific Ocean service.

Visits to 7 Nations

Imperial Tour Generates Heavy Satellite Demand

Foreign visits by the Emperor and Empress of Japan accounted for 22:53 half-channel hours of global television service during September. The royal couple visited 7 nations from which television coverage was transmitted via satellite to Japan.

Their visits were the highlight of global television service during September. For the entire month of September, global television service amounted to 139:49 half-channel hours of transmit time and 169:50 half-channel hours of receive time. This increased the 1971 total through September to 980:33 half-channel hours of transmit time and 1354:44 half-channel hours of receive time.

Full-time circuit-utilization of the satellite system by all users amounted to 5,415 equivalent half-circuits at the end of September. COMSAT utilization was 2,287 equivalent half-circuits.

The nose fairing is secured around the spacecraft.

The spacecraft assembly is moved to the launch complex.

To Assure Optimum Flight-worthiness

Atlas Centaur Subjected to Extensive Preflight Tests

By Allan M. McCaskill and Frederick Ormsby

The Atlas Centaur launch vehicle used for the INTELSAT IV launches is produced for NASA by General Dynamics, Convair Aerospace Division, in San Diego. About 2½ months before a scheduled launch it is shipped to Cape Kennedy, the Centaur stage going by air, and the remainder of the launch vehicle by truck.

The launch vehicle is as close to flight configuration as practical when delivered to Cape Kennedy. Upon arrival the Atlas (first-stage) and Centaur (second-stage) vehicles are given initial receiving inspections in Hangar J. Inspection consists of visual checks for transportation damage, corrosion, and overall completeness, and a brief electrical inspection. Similar receiving inspections are performed on the interstage adapter, nose fairing, insulation panels, and conical adapter.

(Mr. McCaskill is manager, launch vehicle systems, and Mr. Ormsby is a member of the launch vehicle systems department)

Following inspection, the first stage is moved to Complex 36 and erected on the launch pad. The interstage adapter is then moved to the launch complex and mated to the first stage and is followed shortly by mating of the Centaur. The conical adapter and nose fairing are transferred to the explosive safe facility (ESF) for cleaning and subsequent spacecraft encapsulation. The remaining items are moved directly to the launch complex and mated to the vehicle at appropriate times in preparation for subsequent multiple system tests.

Following erection, the Atlas ground support equipment (GSE) is connected to the first stage, and vehicle/GSE compatibility checks are performed. Concurrent with Atlas systems-level checkout, Centaur GSE is connected, and vehicle/GSE compatibility checks are performed. Checkout of all Atlas and Centaur vehicleborne systems and instrumentation is then initiated to verify proper functional performance in preparation for subsequent multiple systems tests.

The first major integrated test, the terminal countdown demonstration (TCD) normally takes place approximately 3 weeks prior to launch. The terminal countdown demonstration generally duplicates the launch countdown, including loading of propellants, followed by an integrated guidance and autopilot (GAP) test simulating the Atlas Centaur flight sequence. The GAP test, starting at T-O is performed with cryogenic propellants on board and exercises the complete guidance and autopilot command sequence from liftoff to Centaur mission completion. A test fairing is used in lieu of the flight fairing and spacecraft during this test.

Tiger Team

Following the terminal countdown demonstration the Centaur Tiger Team convenes. The Tiger Team consists of Convair systems engineers and program office personnel and their counterparts from NASA's Lewis Research

See Atlas Centaur, Page 5

From Page 4

Atlas Centaur

Center which manages the Centaur program. The Tiger Team reviews the data from the Terminal Countdown Demonstration and previous tests, reviews the histories of controlled components, and physically examines the launch vehicle hardware. The systems engineers present the results to the program managers and personally certify that their systems are flight-ready. This activity takes about five days.

During the Tiger Team review the flight acceptance composite test (FACT) is run. During the FACT, electrical and electronic systems are operated through an abbreviated countdown simulating launch preparation of these systems. At the end of the countdown the vehicle is switched to internal power, the range safety command systems and autopilot programmer armed, and a simulated engine start sequence initiated. An automatic terminal count sequence to launch release is performed, followed by ejection of all electrical umbilicals and automatic initiation of the flight programmed sequence. The data from this test are also reviewed by the Tiger Team.

Mating Preparation

Following completion of the FACT, the test fairing is removed from the Centaur in preparation for mating of the flight nose fairing and the INTELSAT IV spacecraft. The spacecraft has been joined to the Centaur conical adapter and the nose fairing secured around them in the explosive safe facility. The entire assembly is transported to the launch complex on a flat-bed truck where it is lifted up by a crane in the mobile service structure (gantry) and mated to the launch vehicle.

The composite readiness test (CRT) is performed about a week before launch and provides a launch readiness verification of the Atlas Centaur ground and airborne electrical systems after re-connection of the ground umbilicals and after mating of the flight spacecraft assembly for launch. The Centaur-to-spacecraft interface signal for separation is checked using squib simulators. The CRT is the last major systems test performed prior to entering the countdown.

A three-day countdown begins after the CRT. On F-2 day the tasks accomplished include loading of the

See Atlas Centaur, Page 6

The Centaur stage as it moves into place to be mated to the Atlas booster.

Fred Ormsby (left) and Allan McCaskill monitor a vehicle test at Complex 36.

From Page 5

Atlas Centaur

Centaur stage peroxide system, tanking of the Atlas fuel, and installation of flight batteries in both stages. On F-1 day numerous system readiness tests and calibrations are performed, a spacecraft functional test is accomplished and, finally, all the launch vehicle pyrotechnics are mechanically and electrically connected.

On F-O day the launch countdown commences about 10 hours prior to the scheduled lift-off time. While a spacecraft functional test is being performed, warmup of the Centaur guidance system begins. A guidance and autopilot test is then run and the data carefully reviewed. The launch vehicle access doors are sealed and, about three hours before launch, the mobile service structure is rolled back away from the vehicle.

Eighty minutes before launch the launch crew is sealed in the blockhouse and loading of liquid oxygen into the Centaur and Atlas stages begins. This is followed some 30 minutes later by the loading of Centaur's liquid hydrogen fuel. There are then some final checks of critical launch vehicle and range safety command systems. The launch vehicle is switched to internal power and, 10 seconds before liftoff, an automatic sequence begins leading to ignition and thrust-buildup of the Atlas stage's three engines and, finally, liftoff.

Shortly after liftoff, the four TT&C stations, under the direction of the Spacecraft Technical Control Center at Headquarters, begin tracking the newly launched satellite in its transfer orbit.

After necessary corrections to the transfer orbit, the satellite's apogee motor is fired at an appropriate apogee placing the satellite in a near-synchronous orbit, which is then refined in preparation for commercial service.

TRW Conducts Tests

TRW Systems of Redondo Beach, California, has been awarded a contract by COMSAT on behalf of INTELSAT for the preflight qualifications of a hydrazine azide-hydrazine blend as a monopropellant. The $19,900 contract is to be completed within eight months.

Hydrazine azide (HA) when used as an additive to hydrazine decreases the freezing point and increases the density and specific impulse, which might alleviate thermal control problems without the use of heaters.

For Your Benefit

Broad COMSAT Program Includes Group Life and Accident Insurance

This is the third in a series of articles prepared by the Personnel office to explain COMSAT's benefits program to employees and their families.

The second article in this series reviewed the benefits available in event of your death. This month's article discusses "Group Life and Accidental Death and Dismemberment Insurance".

Who may be insured?

All regular full-time employees who elect to participate in the plan may be insured.

When does coverage begin?

Enrollment in the plan normally takes place at time of employment. When this is the case, the employee is insured immediately.

If enrollment is accomplished within 31 days after employment commences, the effective date of insurance is the date of actual enrollment. If enrollment occurs more than 31 days after employment commences, evidence of insurability satisfactory to the insurance company is required before the insurance becomes effective. Insurance then becomes effective on the date the insurance company indicates its satisfaction in the insurability of the employee.

If the employee is not actively at work on the day the insurance would otherwise become effective, the effective date is deferred until the date the employee returns to active work.

When does insurance terminate?

In general, insurance terminates when the employee ceases to be a regular full-time employee.

May group insurance be converted?

Yes. The employee must, however, exercise the "conversion privilege" within 31 days after employment termination. The "conversion privilege" entitles the employee to have issued without evidence of insurability, an individual policy in an amount which does not exceed the total amount of the life insurance in effect immediately prior to the employee's termination of employment.

Who is the beneficiary of your group insurance?

The employee names the beneficiary of his or her Group Life and Accidental Death and Dismemberment Insurance. The employee may change the beneficiary by notifying the employee benefits department and completing the appropriate forms..

How is insurance payment made?

Any amount of insurance payable under the Group Life Insurance plan because of the death of the employee shall be paid either in one lump-sum amount or in accordance with the terms of the settlement option which has been agreed to and acknowledged by the insurer.

A settlement option may be elected by the employee while insured and may be changed or revoked by the employee at any time.

If a settlement option elected by the employee is not in effect at the time of the employee's death, the beneficiary may elect a settlement option after the employee's death. Settlement options are not available for insurance proceeds payable to an executor, administrator, trustee, corporation, partnership, or association.

May benefits be assigned?

Recent income tax rulings provide an opportunity for savings of Federal estate taxes through assignment of group life insurance policies.

The Internal Revenue Service has ruled that group life insurance proceeds will not be subject to the Federal estate tax upon the death of the insured individual,

See COMSAT Benefits, Page 7

Mr. Stamminger

Stamminger Appointed To Director's Position

Reinhard Stamminger was appointed in early August to the position of Director, Systems Engineering, reporting to Sidney Metzger, Assistant Vice-President and Chief Engineer.

Mr. Stamminger joined COMSAT in January 1964 and has worked on communications systems design since the days of Early Bird.

A native of Austria, he received his BSEE in Vienna. Prior to joining COMSAT, he held engineering positions with RCA, Canada, and General Dynamics.

Pritchard Elected As Fellow of AIAA

The American Institute of Aeronautics and Astronautics recently announced that Wilbur L. Pritchard, Assistant Vice-President and Director, COMSAT Labs, has been elected a Fellow of that organization.

The election was in recognition of "his many outstanding contributions and acknowledged leadership in the professional aerospace community."

Mr. Pritchard joined COMSAT in May 1967 as the first director of COMSAT Labs. He was named Assistant Vice-President in October 1969.

Fluid Film Bearing

COMSAT on behalf of INTELSAT has awarded a contract to Sperry Flight Systems Division of Phoenix, Arizona, for the design, development, fabrication, testing and delivery of an engineering model of a fluid film bearing momentum wheel including associated electronics. The $96,000 contract is to be completed within 13 months.

From Page 6

COMSAT Benefits Program

if during his lifetime he has assigned his entire interest in the policy to someone else (such as his spouse). The interest which must be assigned includes the right to name the beneficiary and the right to exercise any conversion privilege. The assignment must be irrevocable.

To be subject to the Federal estate tax, ordinarily the estate of a married individual leaving at least one half of his gross estate to his spouse must exceed $120,000. (The amount is $60,000 for a married individual who leaves his estate in a different fashion, or for an unmarried individual).

Forms for assigning interests in the COMSAT group policy are available in the employee benefits department of the Personnel office. Neither the Corporation nor the insurance company guarantees the effect of the assignment; and the Personnel and General Counsel offices will not advise individual employees with respect to assignment of their interests. Therefore it is recommended that any employee considering an assignment consult with his own attorney.

What About recent changes?

COMSAT changed its group life insurance program at the beginning of the year in view of the more liberal terms offered in Maryland. Covered employees earning up to $25,000 will no longer be required to pay income taxes on the premiums paid by the Corporation, and taxes for those earning over $25,000 will be reduced. This change will save COMSAT employees a minimum of $12,000 of additional taxable income in 1972.

What about benefits after retirement?

Life insurance coverage continues during your retirement years, provided you were covered by life insurance in the COMSAT Group Insurance Benefits Program at the date of your retirement. This life insurance, paid for entirely by the Corporation commencing with your retirement, will be in effect for the rest of your life in accordance with the following table:

Principal Sum

1st year of retirement	100% of your final salary at retirement*
2nd year of retirement	90% of final salary
3rd year of retirement	80% of final salary
4th year of retirement	70% of final salary
5th year of retirement	60% of final salary
6th year of retirement	50% of final salary
Thereafter	25% of final salary but not to exceed $10,000 nor to be less than $2,000

*Rounded upward to the next $1,000 where applicable.

Assume, for example, that your annual salary when you retire is $11,500. For retirement insurance purposes, this figure will first be rounded upward to $12,000. Then your retirement insurance coverage would be:

1st year of retirement	$12,000
2nd year of retirement	10,800
3rd year of retirement	9,600
4th year of retirement	8,400
5th year of retirement	7,200
6th year of retirement	6,000
Thereafter	3,000

This insurance is payable to any beneficiary or beneficiaries that you designate.

The next article in this series will discuss the Corporation's "Other Death Benefits."

If there are specific questions you would like to have answered on these topics, please direct them to the Manager, Employee Benefits.

Plessey System Study

A contract for a system study of interface techniques between analog, digital or mixed terrestrial systems has been awarded by COMSAT on behalf of INTELSAT to Plessey Telecommunications Research Limited.

COMSAT'S Technical Advisory Group

Provides Worldwide Earth Station Design Services

For the past five years COMSAT has been actively engaged in a program offering technical assistance to foreign entities about to build an earth station.

The services include professional advice in the selection of a station site, the drafting of technical specifications and the testing of the performance of a completed station.

Representing the Corporation in every major area of the world, staff members have traveled in excess of 3 million miles to insure that all new earth stations are designed and configured on the basis of the most up-to-date information.

The professional effort expended on a typical advisory program has varied from 15 to 36 man-months depending upon individual country participation.

To date, the Corporation has entered into technical advisory contacts with 21 different countries. The first on-location work began in 1966 in Thailand. The group's most recent program has focused on the new earth station under way for NICATELSAT, the private company jointly owned by COMSAT and the Government of Nicaragua.

There is no doubt that the services provided by this vital arm of International have been instrumental in bringing the price of foreign earth stations within reach of many of the world's emerging nations.

Bill Ferguson, staff member reviews a technical assistance document.

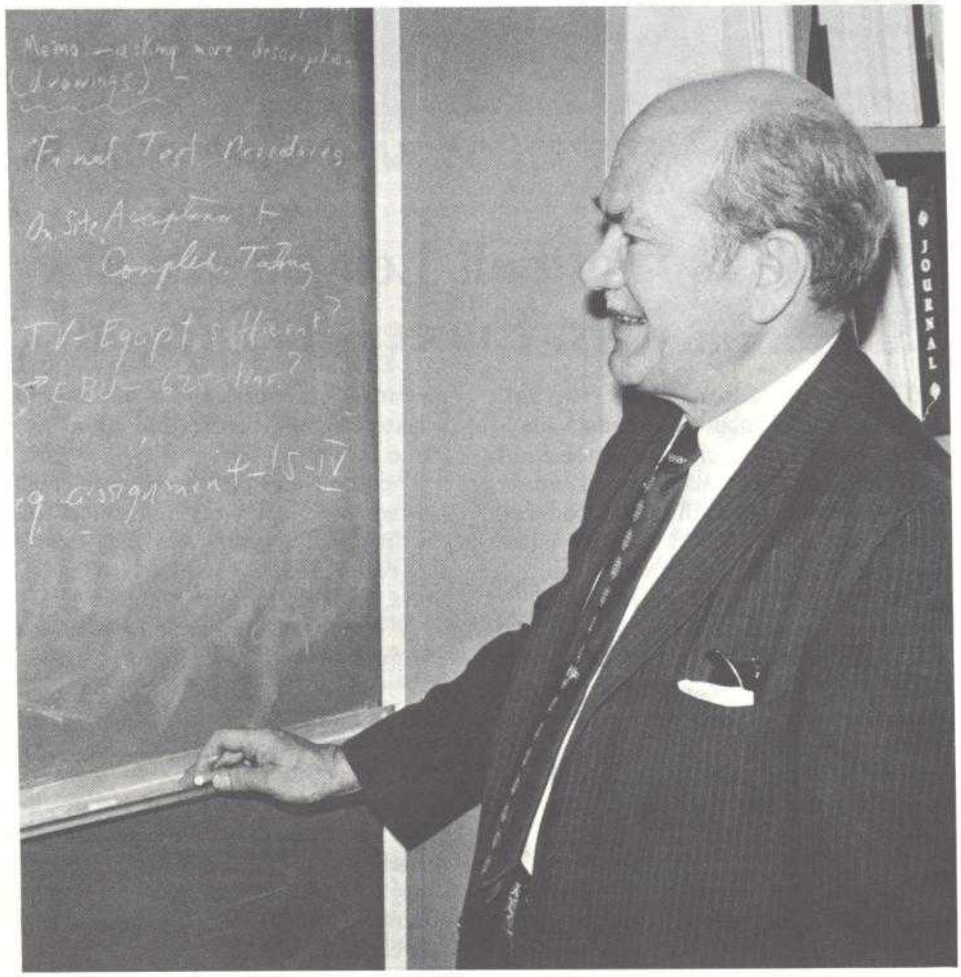
Bill Hudgins is a member of the staff.

Don Owen, Director, Technical Advisory, discusses technical assistance program.

Wanda Latta, secretary, reviews travel arrangements for a staff member's trip.

John Jenkins, Assistant Director, discusses a proposal with Gay Coletto, secretary.

V. N. Sawant, staff member, at the blackboard.



John Loutit, staff member, reviews frequency assignments for use in a proposal.

Blaine Shatzer swings as catcher Carl Maag and ump Tony Buige watch.

John Husted slides into home.

New Field Used

Slow-Pitch Softball League at Labs Completes First Successful Season

The Labs Slow-Pitch Softball League, made up of four teams playing 12 games each, christened the Labs new softball field this past summer with a showing of skills that produced everything from a 22-21 opening game to a 2-0 championship game.

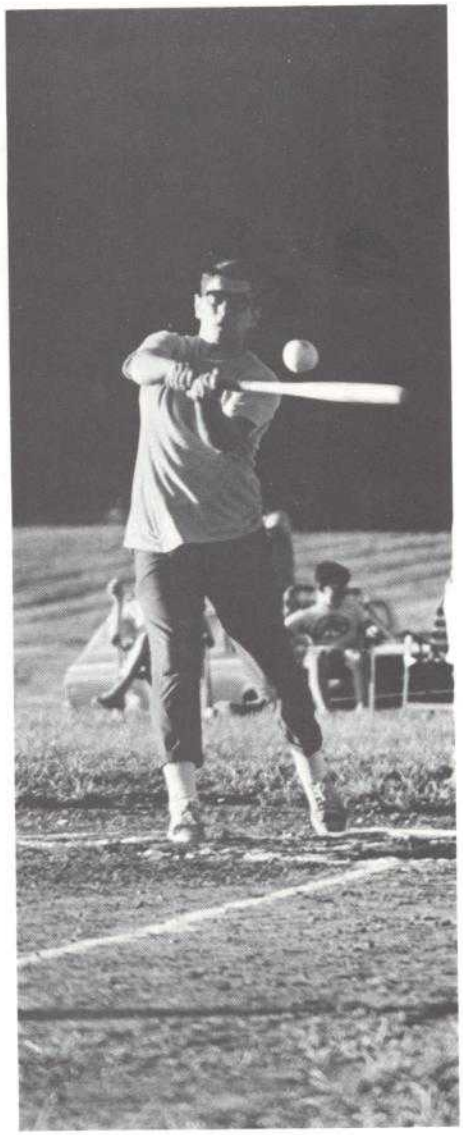
Each team adopted the name of its manager (Burch, Cool, Lewis and Shatzer). Modified slow-pitch rules were used which required all participants to play a minimum of two innings including one time at bat. The ladies were encouraged to join in and made a good showing with 12 participants.

Burch's team, winner of the first half with a 6-0 record, brought a degree of seriousness to the otherwise jovial competition by insisting upon such unheard of techniques as team meetings, practices, and a ban on carbonated drinks before and after each game.

The mid-season break was highlighted by a play-off game between the first half winners and the "best of the rest", loosely referred to as All Stars, with the latter winning 13-8.

A one team "run-away" was avoided during the second half as Shatzer's club did a complete about-face and won five of its six games, thus earning the right to meet Burch's team for the championship.

In the first meeting to determine the Lab's best, darkness forced the teams to settle for a 2-2 tie after eight innings. A second test was set for the following week. After six innings of scoreless baseball, Shatzer's team managed a two-run seventh and a shutout victory to become the champs.



Paul Schrantz slams a base hit.

Elizabeth Preston, library manager, reviews a new title with Bob Gillespie, scholarship winner.

COMSAT Employee Wins Scholarship

Robert C. Gillespie, uniform file clerk in General Services, has been awarded a four-year scholarship in library science at Kansas State University, Manhattan, Kansas. The scholarship becomes effective next January.

He is the son of Mr. and Mrs. Henry Gillespie of Greensboro, North Carolina, and previously attended school at North Carolina Agricultural and Technical State University in Greensboro. While there, he became interested in library science and worked in the university library.

During the seven months he has been with the Corporation he has received two promotions. Beginning as a messenger, he was promoted to a service center operator, then, to his present position of uniform file clerk.

Metzger Appointed To Advisory Council

Sidney Metzger, Assistant Vice President and Chief Engineer, has been appointed a member of the Joint Technical Advisory Council. A COMSAT employee since June 1963, Mr. Metzger is a Fellow of the IEEE and an Associate Fellow of the AIAA.

The Council is sponsored by the Institute of Electrical & Electronics Engineers and the Electronic Industries Association. It was established to obtain and evaluate information of a technical or engineering nature relating to the radio art for the purpose of advising government bodies and other professional and industrial groups.

Its members are selected on the basis of professional standing and competence without regard to the organizations with which they are associated.

Dr. Charyk Named to The Conference Board

Dr. Joseph V. Charyk, COMSAT President, was recently elected as a member of The Conference Board for a two-year term.

The Conference Board is an independent and nonprofit business and economic research organization. Founded in 1916, its work is supported by representatives of industry, government, colleges and universities.

The Board members are leading business executives. Elected at the same time as Dr. Charyk was Katherine Graham, President of The Washington Post Company.

Scrimping on $10

George D. Dill, COMSAT Labs, is shown exchanging dollars for yen during a recent trip to Tokyo, Japan.

This photograph appeared on the front page of a Tokyo newspaper shortly after President Nixon's announcement that the U.S. dollar would be "floated" in the international money market.

Mr. Dill was in Japan conducting in-plant acceptance tests for Etam SPADE terminal equipment which is being built by Nippon Electric Company.

As a result of the President's announcement. Mr. Dill's hotel imposed an exchange limit of $10 per person per day. He had trouble living on that in Tokyo, he reported.

News and Notes from Bartlett

Governor W. A. Egan Visits Station, Considers Tour As Most Informative

By Jim Shaff and Patti McKenna

Governor William A. Egan and a party of 16 visited the station on September 20. After the tour, the party adjourned to the Talkeetna Motel for a luncheon. In a speech following the meal, the Governor stated that his visit was most enlightening and informative.

Live TV—A "First"

Bartlett provided live TV coverage of the meeting between President Nixon and Emperor Hirohito as it took place in Anchorage. We even had our own representatives in the persons of Merle and Rose Anne Albert, who made a personal trip to Anchorage to see the ceremonies.

Elections

Our annual election of officers for the Bartlett CEA produced the following results: president, George Furford; vice-president, Al Sousa; vice-president/social, Fred Herron, and secretary-treasurer, Patti McKenna.

The new slate of officers has held its first meeting to talk over social activities for the coming year. On the agenda were a November snow machine party, Christmas parties for both the children and adults and a spring picnic.

Bags a Moose

Al Sousa and Larry McKenna hit the trail to the high country in search of that ever elusive quarry—moose. They spent five days climbing hills and sighted nary a moose.

Soon afterward Larry's wife, Patti, spotted a moose on the Talkeetna highway. She stopped the car and dispatched the beast with two shots at 150 yards. She then called Larry and Al to come do the dirty work. Larry still hasn't made much comment on the subject.

Makes Solo Flight

Bartlett's flying aces are still on the wing. Larry McKenna recently made his first solo flight. He reports he was a little nervous up there without his instructor. The plane is still in one piece though so it looks like we have a brand new pilot now. No one has been able to catch Larry yet to cut off his shirttail, an old flying custom on your first solo flight.

Potpourri

Summer is gone even though the temperatures are still mild during the day. The temperature is beginning to get down in the 20s during the evenings. The frost on car windshields in the morning is a sign that snow is around the corner. The days are getting shorter by seven to eight minutes every 24 hours.

Dewey and Margaret Clay celebrated their ninth wedding anniversary on September 11. "Evil" Alice hosted dinner for them while our "postmaster", Emory Kunkle, provided champagne for the toasts.

The McKennas have moved into their new Bartlett Park home and are planning a house warming Halloween masquerade party around the end of the month.

5-Year Award

Congratulations to Dewey Clay on his fifth service anniversary.

COMSAT Staffer Coordinates Show

George V. Videll, assistant manager for graphics in General Services, acted as the exhibit coordinator for "Recognition 71". This exhibit, sponsored by the National Association of Industrial Artists, was held in the L'Enfant Plaza shopping concourse September 25 to October 9.

In his capacity as coordinator, Mr. Videll was responsible for cataloging and displaying all entries.

Highlighting the best in commercial and technical art, these entries were received from 28 States and three Canadian provinces.

Seven examples of COMSAT art were submitted. Individual awards in the industrial photography category were made to Allan W. Galfund and James T. McKenna of the Information office. Mr. Galfund's entry, a color picture of the Cayey earth station. at dusk won third prize, while Mr. McKenna's picture, an aerial view of the new John F. Kennedy Memorial Center, won honorable mention.

2 at Brewster Campaign for Public Offices

Employees at Brewster are contributing their talents to civic affairs in the communities in which they live. John Banister is a member of the Riverside School Board. Mel Hofmann is running unopposed for a seat on the Pateros School Board. Darold Browning is seeking a seat on the Brewster Town Council.

Bob Sanderson is the ex-officio mayor of Malott. His title comes about as a result of his successful bid for an old manor house situated on 16 acres in Malott. Built at the turn of the century, it was at one time the area's show place. Bob and his wife, Dottie, are experts at restoration and intend to have the home look exactly like it did when it was built.

Visitors

The George Sharrocks were recent house guests of Mr. and Mrs. W. M. Lauterbach. George has just retired. Pauline and he are touring the lower 48 in their new motor home deciding where they want to settle down. We hope its the great Pacific Northwest.

George is the former mayor of Anchorage, who was in office at the time of the Alaska earthquake. He is also a former State Secretary of Commerce under Governor Hickel and more recently was appointed by President Nixon as Chairman of the Federal Field Committee in Alaska.

Fall Vacations

Those vacationing within the past few weeks were Jerald Bowes and family, who visited relatives in South Dakota. Jack Wohlford and his family visited relatives in California. Charles Wyrick and his wife recently returned from a trip to California and Nevada. Their daughter, Cathy, who has been attending school in California returned to Brewster with them and will attend high school here.

Potpourri

Imogene Cook, station administrator, was recently presented her five-year service award by W. M. Lauterbach, station manager. She joined COMSAT on September 6, 1966.

Wayne Colpitts and his wife, Bonnie, recently moved from Bridgeport to Brewster. They are remodeling an older home which they have purchased in Brewster.

News & Notes from Jamesburg

Jamesburg Selected as Test Station For Hughes Antenna Used in Iran

By M. Lee Dorsey

Jamesburg was selected as a test station for a Hughes transportable earth station before it was airlifted to Iran for use during the Persian Empire 25th Centennial celebration.

Moves, Moves

Jamesburg staff members are on the move again. Senior facilities mechanic Roy Scheiter and his family started by moving out of Cachagua to Carmel Valley Village. Then this writer and his family moved from our log cabin in the Cachagua to the Village. Facilities engineer Walter D. "Robbie" Robinson plans to leave the Sky Ranch in Cachagua for the "Lyon's Den" log cabin (formerly occupied by the Dorsey family). Finally, storekeepter Albert Eleshio and his family will move from the Lambert Ranch to the Sky Ranch.

Off to Hawaii

Administrator Warren Neu and his wife, Thelma, are off to Hawaii for their vacation this year. The Monterey Elks Club arranged a special tour for the Elks members and wives with Pan Am.

HPA Training at Jamesburg

Paul Winchester of the COMSAT Labs M & S Service Center recently visited us and instructed our technical staff on power systems. The training included the low voltage switchgear (LVS) and uninterrupted power supply (UPS).

Promotions

Cecil V. Jeter, Jr., operations supervisor was promoted to operations center controller and transferred to COMSAT Headquarters.

A grand send-off party was held in his honor at the Los Laureles Lodge. JCEA vice president, Donald Tucker, presented him with a framed color photograph of our earth station.

We will miss Vic and his wife, Estelle, but know they will enjoy their new assignment and new home.

William M. "Bill" Hartke, senior technician, has been promoted to operations supervisor. Bill will supervise Team "A", replacing Vic Jeter.

Bill has just returned from a Hewlett-Packard seminar relating to microwave measurement techniques.

New Sergeant-of-the-Guard

David Ostrander is Jamesburg's new guard sergeant, replacing Joe Jodoin. Mr. Jodoin and his wife, Eunice, plan a two-year tour of the United States, Canada and possibly Mexico.

Third Quarter Dividend Slated, Net Income Up

Comsat reported net income for the third quarter of $4,978,000 or 50 cents per share, compared to $4,271,000 or 43 cents per share for the third quarter of last year. For the first nine months of 1971, net income amounted to $17,123,000 or $1.71 per share, compared to $11,590,000 or $1.16 per share for the first nine months of 1970.

Revenues amounted to $21,276,000 for the third quarter, compared to $17,709,000 for the third quarter of last year. For the first nine months of this year, revenues were $65,439,000, compared to $49,937,000 for the first nine months of last year.

Operating expenses for the third quarter increased to $17,710,000, compared to $15,165,000 a year ago. For the first nine months, operating expenses totaled $53,134,000, compared to $43,119,000 a year ago.

Net operating income for the third quarter increased to $3,566,000, compared to $2,544,000 a year ago. Net operating income for the first nine months increased to $12,305,000, compared to $6,818,000 a year ago.

Third quarter net income was $476,000 less than net income for the second quarter of 1971. This was due primarily to the 25 percent satellite rate reduction for certain Atlantic services which went into effect as of July 1, 1971.

At its monthly meeting on October 15, 1971 the Board of Directors declared the regular quarterly dividend of 12.5 cents per share.

Dr. Charyk Names Equal Opportunities Group

An Equal Opportunity Committee has been established by Dr. Joseph V. Charyk, COMSAT President, to assure equal opportunities in employment, transfer and promotion without regard to race, color, sex, religion or national origin.

Dr. Charyk appointed George P. Sampson, Vice-President-Operations, as chairman of the committee.

Other members are Lucius D. Battle, Vice President-Corporate Relations; James J. McTernan, Jr., Vice President-Finance and Administration; William H. Berman, Assistant Vice President and Associate General Counsel; Richard R. Colino, Assistant Vice President-International; Sidney Metzger, Assistant Vice President and Chief Engineer, and Wilbur L. Pritchard, Assistant Vice President and Director of COMSAT Laboratories.

The executive secretary of the committee will be Thomas W. Harrington Jr., Director of Personnel.

Dr. Charyk instructed the committee to:

■ Review COMSAT's present employment, transfer and promotion standards to insure that unnecessary qualifications are not imposed.

■ Make a monthly analysis of minority employment and trends.

■ Devlop short-range goals for minority group representation at all levels of the staff.

■ Examine and develop practical actions to encourage and enlarge minority group representation at all levels of the staff.

Finalist Entries Chosen in COMSAT Emblem Contest

More than 100 employees and members of their families, submitted entries in the CEA-sponsored competition for the design of a COMSAT emblem.

A panel of judges picked the 11 finalist designs, which are shown on this and the facing page. Employees now are invited to vote on the one they like best. The judges were Louis B. Early, Corporate Relations; Paul D. Eckley, General Services; James P. Tallon, Finance and Administration, and James H. Kilcoyne, Jr., Information office.

Many of the entries were carefully drawn by the persons who submitted them and showed obvious art or drafting talents. Some of them were in attractive color, which is not reflected in the reproductions on these pages.

After reviewing the submissions, the judges and the CEA expressed thanks to all who took the time and trouble to submit an entry.

One or more of the winning entries may be used by elements of the Corporation for various purposes, including such things as armbands, service awards, pocket patches, and cap emblems, the CEA said when it announced the competition.

All employees wherever they are stationed are invited by the CEA to vote for the design they like best. A few simple rules have been established for the voting:

- Only one vote per employee.
- All votes must be signed.
- Vote for only the one you like best, indicating it by the letter printed beneath it.
- COMSAT reserves the right to use or not to use the winning design.

To vote in the contest, simply send a note, or mail a letter or postcard, to Jim Tallon, Room 5107, the Plaza, postmarked by midnight November 24. Winners will be determined by the votes thus cast.

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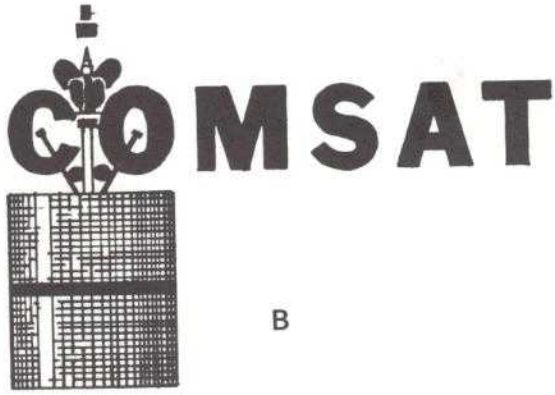

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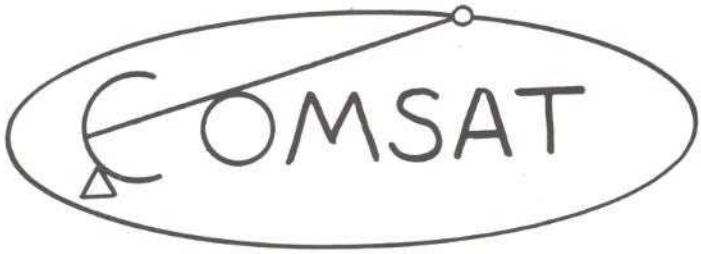

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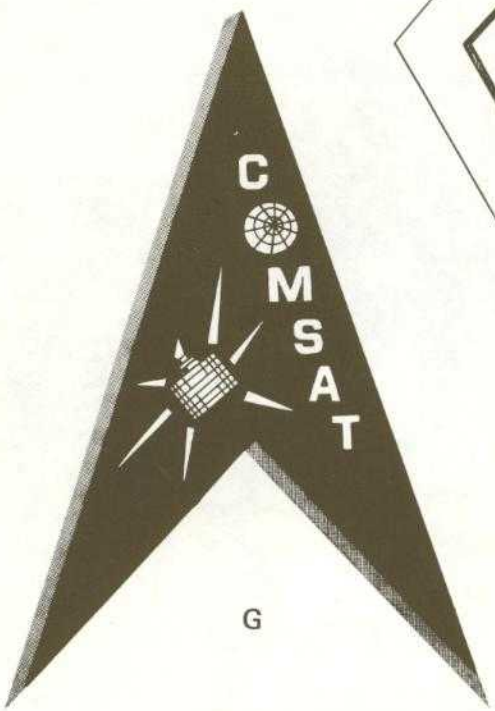
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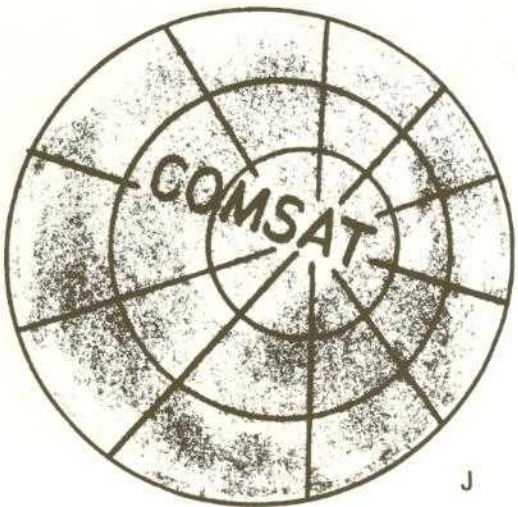
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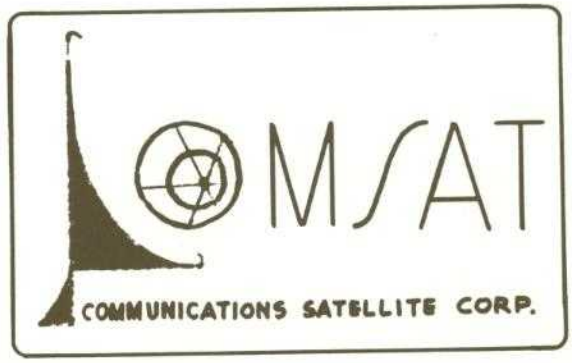
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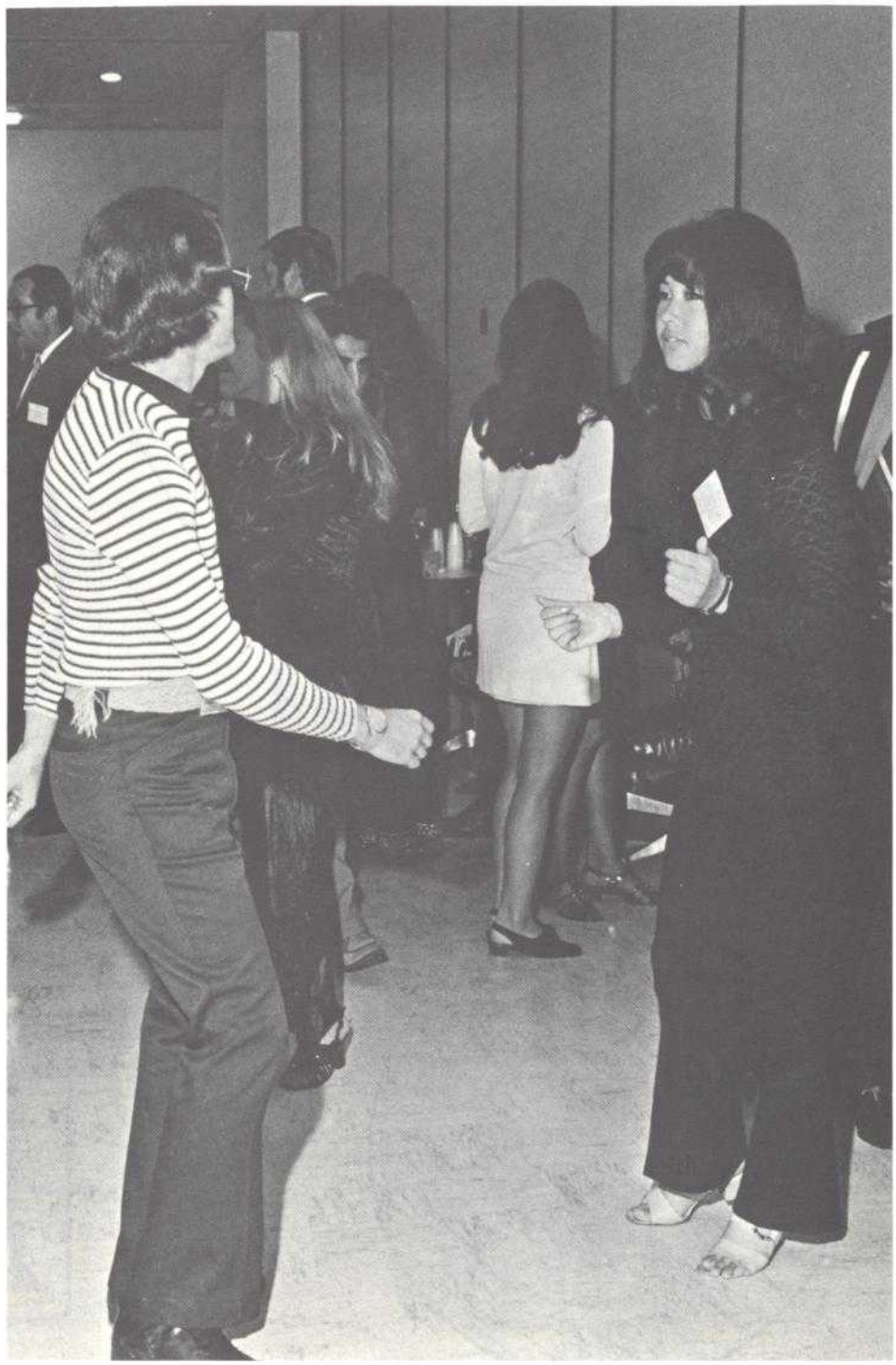
Cocktail Party a Huge Success

Several hundred CEA members and guests danced to Jim Peddicord's 4-piece combo, "Just Us", Friday evening, September 24, at the Annual Fall Cocktail Party at COMSAT Labs.

Under clear skies, the crowd enjoyed an excellent buffet as the busy bartenders added to the evening's relaxation.



Delegates attending the ICSC/T meeting in Tokyo in September.

People and Places at COMSAT Labs

By Betty Mowen

Ali Abu-Taha's wife, Greta, gave birth to a 7-pound, 5-ounce baby boy on September 16.

Tony Friedman recently returned to work after a six week tour of Europe.

Three of the Labs' First-Aiders, Larry Pearre, Bill Magers, and Harry Lieberman, recently visited the Montgomery County Heart Mobile unit at Holy Cross Hospital, Silver Spring, Md., with Betty Mowen, Labs nurse, for a day of orientation. The group discussed procedures with the mobile unit staff and observed their equipment.

Betty Linthicum, our cashier, left us on October 1, to stay home and await the arrival of a son.

Best wishes to Eli Wachsberg, who was married to Micky Epzion on August 29 in Israel. Micky arrived in the States on September 13, and the couple will make their home in Silver Spring.

It was nice to see Mike Sansbury around again for a few days. Mike has taken an educational leave of absence for six months and will return to us after Christmas.

Bill Magers, office services, spent a "hair-raising" week in preparation for the annual Montgomery County Fireman's Convention. The convention was held at Hyattstown (up the road from Clarksburg) this year. Bill, a volunteer fireman, served as parade chairman and also on the convention committee.

All who attended the cocktail party at the Labs on September 25, enjoyed the music of Jim Peddicord, drafting department, and his group, "Just Us."

Anne Bernstein toured Europe, and went to Amsterdam to visit with Luke Engel, former exchange student at the Labs.

The COMSAT Labs Medical Facility in co-operation with the Montgomery County Heart Association presented Dr. Louis Gillespie who talked with the employees on September 28, 1971. Dr. Gillespie discussed conditions that cause heart attacks, and how they may be avoided.

The Labs are wishing good luck to Judy and Bruce Martin, who are leaving for California. Bruce will enter a Veterans Administration hospital-training program in Los Angles.

KDD Is Host

ICSC/T Studies Later Satellites And Switching

The 41st meeting of INTELSAT's Advisory Subcommittee on Technical Matters (ICSC/T) was held at the Takanawa Prince Hotel in Tokyo, Japan. This meeting was held in Tokyo, September 8-14, at the invitation of Kokusai Denshin Denwa Company, Ltd., (KDD), which represents Japan on the ICSC/T.

The subject of primary concern at the 41st meeting was the design of INTELSAT IV follow-on satellite systems. One of the principal agreements reached on this subject at this meeting was the desirability of developing a new technique called Time Division Multiple Access/Satellite Switching/Space Division Multiple Access for successor satellites to the INTELSAT IV series.

At the opening session, Mr. M. Itano, Executive Vice-President of KDD, gave a welcoming address. Later, near the close of the meeting Mr. Y. Kanno, the new President of KDD hosted a party for the representatives.

Mr. E. O. Dietrich of Germany served as Chairman of the meeting and Mr. J. P. Houssin, of France, served as Vice-Chairman. The host members from Japan were Dr. K. Miya and Mr. N. Ohyama from KDD. Other members of the Technical Subcommittee in attendance were:

Mr. J. D. Robertson of Australia, Mr. A. H. Costa of Brazil, Mr. J. D. Dorey of Canada, Mr. G. Payet of France, Mr. H. Herr of Germany, Mr. G. Quaglione of Italy, Mr. H. Hermsen who represents the Netherlands, Belgium and Luxembourg, Messrs. L. Hansson and L. Ackzell who represent Denmark, Norway and Sweden, Messrs. D. J. Withers, J. G. Walker and D. Wikinson who represent the United Kingdom and Northern Ireland, and Messrs. W. L. Pritchard and E. N. Wright who represent the United States.

Also in attendance were Messrs. C. L. Blackwell, Mr. E. Podraczky, and R. Stamminger representing the Manager. Mr. J. N. Pelton from COMSAT served as Secretary to the group. Additional staff assistance was provided by Miss Ebeltoft and Miss Tingley, also of COMSAT.

Walker, Bowser, O'Donnell Winners In CEA-Sponsored Fall Golf Outing

Long-driving Drew Walker, Labs, shot a low gross 82 over the Washingtonian Country Club national course on October 6 to win the CEA fall golf tournament.

The low-net trophy was won by Marv Bowser, Operations, with an 83-12—71.

Seventy-seven players, including a foursome of ladies, from Headquarters and the Labs participated in the tournament, played on a beautiful, breezy fall day. Ruth O'Donnell, Dr. Charyk's secretary, was the low scorer among the ladies.

Other winners of prizes, provided by the CEA, were:

First flight: Larry Weekley, Information, 84-11—73; George P. Sampson, Vice President-Operations, 88-14—74.

Second Flight: Tom Tuttle, Legal; Gene Gabbard, Labs.

Third Flight: Pradman Kaul, Labs; Howard Flieger, Labs.

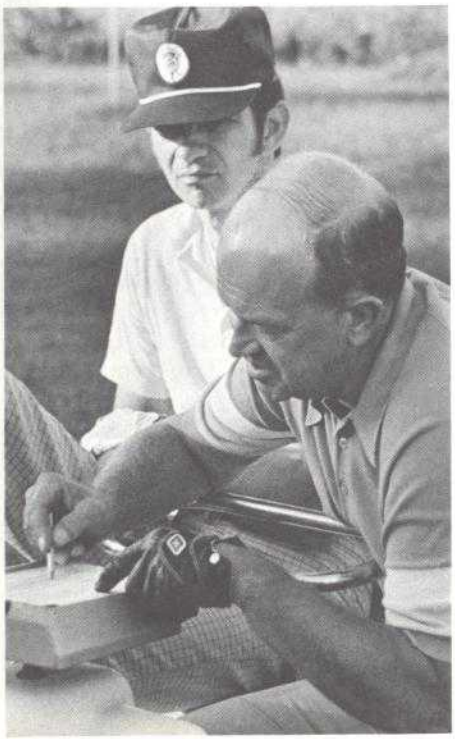
Fourth Flight: Ronald Schofield, Labs; Bernard Free, Labs.

Closest to the pin on the 160-yard eighth hole: Ken Remington, Operations, whose shot was 18 inches from the hole.

Longest drive on the tough 12th hole: Leo Gwinn, a paid guest of Len Smith, Labs. Gwinn smacked his drive more than 260 yards straight down the alley.

Prizes were awarded to the winners by Gen. Sampson, standing in for Dr. Charyk who was unable to participate because of the press of business, and by Don Greer, Headquarters Executive Officer.

Arrangements for the successful outing were handled by Paul Fleming, Labs, and Jack Dicks, Technical.



COMSAT Thrift and Savings Plan Investment Now Near Million Mark

After 11 months of operation of the Thrift and Savings Plan, investments by COMSAT employees and contributions by the Corporation amounted to more than $862,000. Of the total, employees invested $575,000 through payroll deductions, and the Corporation contributed the remainder.

The plan was begun in November 1970 with 742 employees participating of out of a total of 1,167 eligible employees. The purpose of the Thrift and Savings Plan is to provide an investment medium to enable the employees to meet long-term financial requirements. Employees may invest up to 6 percent of their base salary in the plan with the Corporation matching the contribution by 50 percent.

As of October 1, 1971, 67.5 percent of the participating employees elected to take the maximum deduction. The breakdown for the remaining participants is as follows: 8.8 percent contribute 5 percent of their salary; 4.2 percent contribute 4 percent; 10.4 percent contribute 3 percent; 5.1 percent contribute 2 percent; and 4 percent contribute 1 percent. On the basis of these figures, the average employee contributes 5.11 percent of his salary.

In addition to determining the amount he desires to invest (up to 6 percent), the employee can choose how his investment and the related Corporation contributions are to be invested. He may decide whether his investment and the Corporation contributions are to be invested primarily in fixed income securities (Fund A), or in common stocks (Fund B), or in certain combinations thereof.

As of October 1, 1971, 34.2 percent of the participants were investing solely in Fund B, while 16.8 percent had their total investment in Fund A. The remainder of the participants had their deductions and the related Corporation contributions invested as follows: 29.9 percent split the investment 50 percent into Fund A and 50 percent into Fund B; 10.5 percent had 75 percent of the investment in Fund A and the balance in Fund B. Finally, 8.6 percent of the employees had 25 percent of the investment in Fund A and 75 percent in Fund B.

The trustee under the plan is the Chase Manhattan Bank which currently is utilizing, for the COMSAT plan, commingled trust funds it maintains for the collective investment of employee benefit plans of various corporations.

COMSAT bears all the administrative costs of the plan; the funds, however, bear the cost of buying and selling the securities. The plan is administered by a Thrift and Savings Plan Committee appointed by the COMSAT Board of Directors.

As in most investment plans, there is neither a guarantee of gain nor a guarantee against loss.

Investment results under the plan will depend largely on the state of the economy and of the securities market. If an employee is interested primarily in protecting his investment, he may prefer Fund A which consists of securities with a fixed rate of return, such as U. S. Treasury Bonds and Notes and corporate obligations.

If an employee wishes to take a greater risk with the possibility of proportionately greater rewards, he may prefer Fund B which consists of more diversified securities, primarily common stocks.

Each participating employee will receive a statement early in 1972 showing the value of his total investment and the corresponding COMSAT contributions.

TRW to Perform Tests

COMSAT, on behalf of INTELSAT, has awarded a contract to TRW Systems Group, Redondo Beach, California, to perform auxiliary electric thruster tests.

Rick checks his engine prior to takeoff.

Rick as he prepares to solo.

Lab Electrician's Son

Youth Solos Three Types of Aircraft

Rick Coffey, son of F. X. Coffey, chief electrician at COMSAT Labs successfully soloed three different kinds of light aircraft on October 8, 1971, five days after his 16th birthday.

Having flown since childhood, Rick now has approximately 30 hours of dual flight training to his credit.

His first flight instructor, a retired Air Force pilot, recorded the initial entry in his log book when Rick was 12 years old.

Rick's father recalls that in those days Rick had to sit on three cushions just to see over the instrument panel. Today at six-feet-two Rick sometimes has difficulty getting in and out of cockpits.

In preparation for his achievement Rich worked last summer at the Frederick Airport. He jokes about cutting grass, painting and washing airplanes all day for enough money to earn an hour's air time.

Federal Aviation Administration regulations require a person to be at least 16 before soloing and to be 17 before being eligible for a private pilot's license.

Rick will graduate from Brunswick, Md., High School in 1973. By that time he hopes to have both his license and an appointment to the Air Force Academy.

Bill Adams, senior facilities mechanic at Etam, displays copperhead which he killed beneath antenna ladder.

Beverly Budd receives a $5.00 check for suggesting that "Open Slowly" signs be placed at Control Room doors.

News and Notes from Etam

SPADE Terminal Checkout Begins As Nippon Electric Team Arrives

By Deloris Goodwin

A three-man team from Nippon Electric Company arrived at Etam on September 17 to begin installation of the SPADE equipment. A. H. Donahoe and William Surber of Headquarters also were on station to discuss plans for the SPADE installation. Mr. Surber will remain here during most of the installation and checkout.

Potpourri

Anything is possible at Etam. For example, on September 7 as Roger Parsons, station engineer, was descending to the ground from the second level of the antenna he spotted a snake lying beneath the bottom step. Bill Adams, facilities mechanic, disposed of the snake with a long stick. It was determined that it was a copperhead, approximately 20 inches long.

On September 16 the large hickory tree behind the guardhouse blew over during a severe storm. As the tree fell, it brought down both the power lines feeding the Green Valley area, and the telephone wires as well.

The fallen wires were stretched across our access road, thus making it impossible for vehicles to enter or leave the site. The trouble was reported immediately to both the power company and the telephone company. The power company quickly sent a crew to lift their lines. The telephone company crew arrived the next day. In the meantime, station personnel lifted the wires to allow cars to pass. It was the next day before things were completely back to normal again.

The new car buying fever has hit Etam, and many new models are appearing on our parking lot each day. Roger Parsons and S. T. St. Clair are receiving many barbs about the older vintage cars that they are using for transportation.

Personnel Notes

William B. Carroll, station manager, has returned from a two-week vacation. He toured Tennessee, Georgia, Florida and Alabama.

The annual Buckwheat Festival in Kingwood was held in September. Children of COMSAT employees participating in the parade included: Mark Everly, son of Mr. and Mrs. S. K. Everly; Debra and Deanna Evans, daughters of Mr. and Mrs. J. E. Evans; Beth, Dennis and Timmy Silvius, children of Mr. and Mrs. J. R. Silvius; and Diane Parsons, daughter of Mr. and Mrs. Roger Parsons.

Visitors

Jose Sussely, communications engineer and lecturer at the University of Chile, visited the station during September. He was accompanied by J. P. Giafaglione of Headquarters. Mr. Sussely is in our country on an ITU Fellowship. He also visited the AT&T microwave station and terminal equipment.

Dr. R. C. Barthle, Director, U.S. Systems Management, made his annual visit early in September. It was indeed a pleasure to make him a most welcomed visitor.

Representatives from the Domain Instruments Company, accompanied by F. J. Jones and B. J. Williams of Headquarters demonstrated a new type of baseband measurement test set being offered by the Domain Company.

William Hanson and J. A. Bulko of Headquarters spent two weeks with us while they developed an accurate station configuration and documentation manual.

N. Groenberg of Sweden also visited us. He is involved in the construction of the Scandinavian earth station.

Contracts Are Awarded For Nicaraguan Station

Earth station construction and equipment contracts amounting to $2.3 million were awarded in September by NICATELSAT, the communications company formed jointly by COMSAT and the Government of Nicaragua. The two fixed-price contracts were awarded to Mitsui & Co. and Mitsubishi Shoju Kaisha, Ltd., both of Tokyo.

All of Nicaragua's international communications, except those with other Central American countries and Panama and Mexico, will be provided by the new company.

In the undertaking, COMSAT owns 49 percent of the common stock, and TELCOR, Nicaragua's telecommunications and postal entity, owns 51 percent. COMSAT will provide most of the capital for the joint venture. For its investment COMSAT will receive 12 percent cumulative preferred, nonvoting stock and will hold 12 percent mortgage bonds to be issued by NICATELSAT. Two COMSAT officials and three Nicaraguan officials have been named to the five-member board of directors.

Under a management contract with NICATELSAT, COMSAT will provide certain personnel to supervise the construction of the NICATELSAT earth station near Managua and to supervise operations when the station enters into service, which is scheduled for the fall of 1972.

5-Year Awards At Andover

Eleven Andover employees, the largest group there to receive 5-year pins in a single month, are shown above. In the picture at the left are (left to right) M. A. Bartlett, D. A. Verril, H. A. Sauret, S. R. Arness, K. M. Dixon and R. E. Summerton. In the picture at the right are (left to right) D. B. Smith, A. A. Briggs, W. D. Hamilton, A. D. Haseltone and P. R. DeShong.

Dr. Charyk (right) is joined by members of COMSAT's winning COGS team: D. E. Greer, J. L. Martin, J. J. McTernan, Jr., with trophy, L. C. Meyer and H. W. Wood (left to right).

COMSAT Team Wins In Annual COGS Golf

The TIGER team has done it again. Playing in the 6th annual COGS golf outing at the Washingtonian Country Club, a five-man COMSAT team won the tournament's rotating trophy.

Winning low gross team honors was COMSAT's entry made up of L. C. Meyer, H. W. Wood, D. E. Greer, J. L. Martin and J. J. McTernan, Jr., won first place honors, edging out second-place Page Communications, Inc.

This was the second time COMSAT has won the award since COGS began in 1966. With a third victory, the trophy would remain permanently with COMSAT.

Previous other winners include Page Communications, Western Union, Defense Communications Agency and National Communications System.

Sperry Designs System

The Sperry Flight Systems Division of Phoenix, Arizona, has been awarded a contract by COMSAT on behalf of INTELSAT to design, develop, fabricate, test, and deliver an engineering model of a communications satellite stabilizing gimbal system. The $73,000 contract is to be completed within one year.

Receiving Terminals

COMSAT on behalf of INTELSAT has awarded a contract to Empresa Brasilera de Telecommunicacoes, Rio de Janeiro, for the operation of receiving terminals for the collection of scintillation data. The $12,664 contract will cover a period not to exceed four months and four additional optional periods of one month each.

Service Awards

Because the recipients of Five-Year Service Awards have become so numerous, the COMSAT News will be unable to publish pictures of such recipients or presentations after this issue. However, we plan to continue to publish the name of persons receiving service awards, and we will welcome such contributions from our correspondents.—*The Editor.*

Facilities Personnel Responsible For Overall Station Maintenance

Responsibility for the maintenance of all electrical and mechanical equipment and systems at the Paumalu station, as well as responsibility for the station's water and sanitary systems, buildings, roads and grounds, rests with the Facilities Maintenance Team.

At Paumalu, seven men comprise this team, which is headed by the facilities engineer, Joe M. Chow.

Facilities personnel with varied background and skills are required to maintain the electrical and mechanical equipment in good working condition. Bob Manske, senior facilities mechanic, aided by facilities mechanics Harvey Fujimoto and Frank Meyer, performs the varied maintenance and repair work.

One of the most critical responsibilities assigned to the team is to insure 100 percent station power reliability. This requires constant maintenance and regular testing of the auxilary power equipment.

The proximity of the site to the ocean creates corrosion problems. To counter this, Castor Corpuz, painter, is assigned full-time to such things as painting, rust prevention, and corrosion control.

Maintenance of the approach road and 15 acres of land (located on a 248-acre tract on a rolling plateau overlooking the Pacific) keeps the yard maintenanceman, Eddie Clarke, busy mowing the spacious lawn and cutting shrubs.

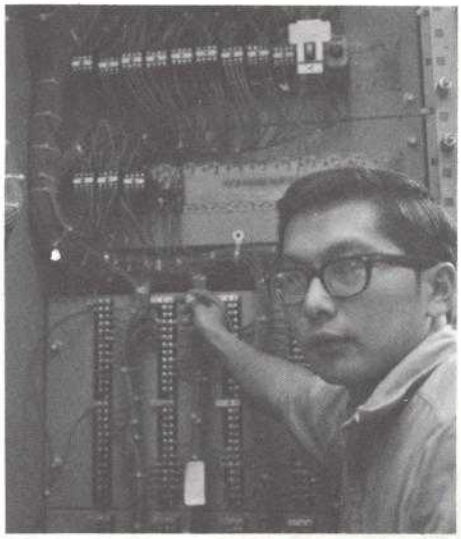
Interior cleanliness of the two antenna buildings and three major buildings are the responsibility of Howard Bunch, janitor.

The man on top of these varied activities assigned to the facilities team is Joe Chow. He joined the Paumalu station in March 1967 following seven years with Hawaiian Telephone Company.

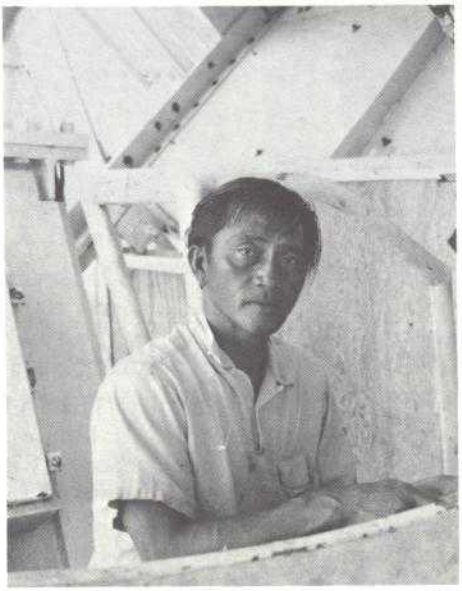
His job knowledge, gained through educational background in electrical engineering and earlier work experience with Bell Telephone Company of Canada and the U.S. Air Force, has contributed greatly to the success of the Paumalu facilities team.

Rain or shine, high winds or calm, the team is ready to render facility support, insuring continuity of communications for which Paumalu is responsible.

Facilities engineer Joe Chow (left) and operations team supervisor Al Prevo.



Mechanic Harvey Fujimoto repairs the emergency start switchgear.

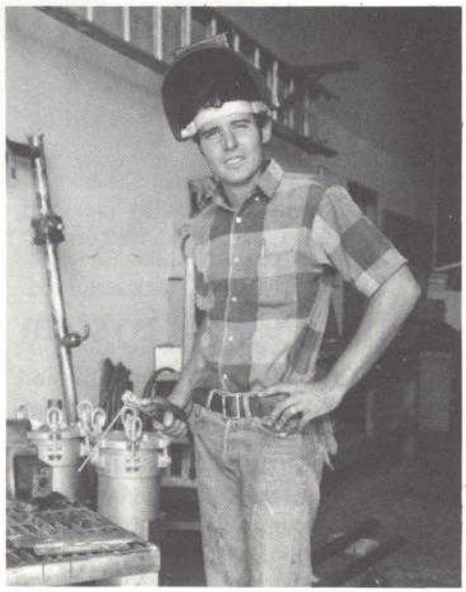


Painter Cas Corpuz applies corrosion protection to the transportable antenna.

Howard Bunch polishes the floor.

Mechanic Bob Manske does a lube job.

Eddie Clarke sits atop his tractor.



Welder Frank Meyer on the job.

The Plaza Scene

Autumn Comes to Town as Tempo Accelerates

By Harriet Biddle

As signs of fall begin to dot the Plaza scene, many of us begin to turn our attention to autumn activities. Night classes start for some, winter wardrobes appear from storage, children scurry off to school with lunch box in hand, temperatures drop abruptly, darkness comes earlier, and PTA's and civic clubs turn out for their first fall meetings.

It seems appropriate that the Plaza scene focus this month on some of the varied outside interests and activities enjoyed by our staff.

Robert Button, Director of Government Relations, who plays the organ in church on Sundays, also teaches two night courses for the fall semester at the University of Virginia Center for Continuing Education. The courses, "Profiles of the Future" and "National Priorities" sound quite interesting.

William H. Berman, Assistant Vice President and Associate General Counsel, has a hobby raising and showing Irish setters. He presently owns five setters, which incidentally, have the run of the house. His champion dog, Wenoarra's Malone O'Redstone ("Malone" for short) has won many honors around the country. "Misty" is working toward becoming a champion as well. All five dogs are related one way or another. "Windy" is the mother of "Malone" and "Misty". "Misty" is the daughter of "Ondine" and "Gideon" (a puppy of four months—not yet fully housebroken) is the son of "Ondine" and "Malone". As if five dogs were not enough, the Bermans also house a Burmese cat.

Perhaps some of you have seen or participated in the annual performance of the Hexagon Club. Jerome Breslow, Assistant Secretary and General Attorney a past president of the club is presently writing the script for this year's show to be held at G.W.U.'s Marion Theater in February 1972. Mr. Breslow invites anyone at COMSAT who is musically or dramatically inclined to audition for the show in December. Last year the show netted $11,500 for Children's Hospital. The proceeds, this year, will go to the American Cancer Society.

Kitty Stephenson, of Legal, who herself is quite talented as a singer and dancer, has found a new interest, her new husband—Danny Harbin. They were married October 15 in the Hilcrest Heights Baptist Church.

November 1 will be Pat McKinnon's wedding day. Pat who works in Planning Services will marry James Irby. Good luck to them.

A member of our Print Shop, Josh Hampton, has been playing the bass susaphone for five years in a 15-piece spiritual band. The McCullough King Harmony Band has a distinguished record. They have made numerous TV appearances and this summer performed on weekends in various cities along the east coast from Buffalo, New York to Savanna, Georgia.

The manager of the print shop, Tyrone Ricks, who is presently coaching the COMSAT girls basketball team for the second consecutive year, has an interesting athletic background. While in the Army and stationed at Schofield Barracks in Hawaii, he coached his battle-group's basketball team. While in Thailand, he taught in a native basketball clinic. He noted with amusement that it was a bit difficult for the four-and-a-half-foot Thais to reach the eight-and-a-half-foot basketball hoop but they seemed to enjoy the sport enormously. Ty also coached a championship-winning National Institutes of Health basketball team for two years, as well as a Catholic Youth Organization team for four years. This summer, making a switch to baseball, he coached a Falls Church Little League Team.

In the home decorating line, Rosemary Davis, of Technical, enjoys designing and decorating her home and also does beautiful and quite intricate needlework.

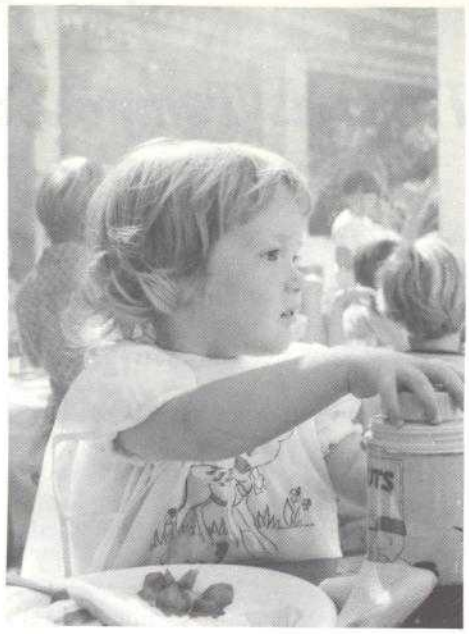
Our 8th Floor receptionist, Jackie Sparrow, assists her husband who entertains as a magician, juggler and fire-eater. He was featured on the Ed Sullivan Show while in the Air Force and recently performed at a magic convention in New York City. Jackie met her husband, incidentally, while she was performing at the Rockville, Md., Little Theater.

Donald Greer, Headquarters Executive Officer, has a new outside interest which he has found to be a thrilling experience. His 15-year-old daughter, Ronda, has been training and showing her recently acquired buckskin horse, "Flower". She has won many honors for showmanship and riding skill. "Flower" has won first place for jumping, two reserve champions, four silver cups and a total of 31 ribbons. Mr. Greer is looking forward to November 1972 when Ronda will ride in the International Horse Show.

Bill Berman shows his winner.

Ronda Greer and Flower.

Bob Sackheim and daughter Karen get ready for the sackrace.



Kelly Robinson prefers peanut butter.

News and Notes from COMSAT West

Ninety People Participate in Picnic, Celebrate CEA West's Initial Event

By Bill Keck

Approximately 90 people enjoyed an outstanding day of games, hamburgers, hot dogs, pop and beer as the newly formed CEA West held its initial function on August 25.

Marty Vonnegut's Chargers were the victors in a hardfought softball contest winning over Lou Ricks' Splendid Splinters. Much of the credit for the win goes to a few youthful female hitters and the homerun pitching of Marty Votaw. Even Lou's directing of an opposing baserunner into center field rather than to second base failed to stem the overpowering skill, stamina, and superb coaching of the Chargers.

No event during the day, which included volleyball. sack races and egg tossing, lacked for participants as everyone joined in the fun. Jeff Robinson, Bob Sackheim, Don Campbell, Phil Avruch and Suzie Powell engineered this event for us.

Incidentally, bids are invited for one almost-full gallon of pickled hot peppers declared surplus by the picnic committee.

Potpourri

Captain Lardy's COMSAT West golf team managed to slip out of third place by a half point in the Hughes Golf League. Aside from the pressure of business, a few poor shots clinched fourth place.

Erland Magnusson and Bob Sackheim recently stood on the highest point of the contiguous States, the 14,496-foot summit of Mt. Whitney.

Moves

The principal office of COMSAT West moved in July to 888 N. Sepulveda, El Segundo, just a block away from its former quarters in the Hughes Building. Many of the West Coast personnel continue to maintain offices, however, in their former location, close to the spacecraft testing activity.

Prelaunch Activities

Many of the COMSAT West staff were at Cape Kennedy for INTELSAT IV, F-3 prelaunch activities.

In anticipation of the launch, 32 COMSAT West employees, wives and friends gathered in Si Bennett's spacious beachfront pad in late August to celebrate that coming event. During the party, Irv Dostis was presented a COMSAT five-year pin by Marty Votaw. Another pleasant and unexpected pleasure was the presence of vacationing Eleanor Ogburn from the COMSAT Labs.

Ecos de la Montana

Gonzalez, Falmar Seek Presidency In CCEA Polling

By Luis R. Rodriguez

As you enter Cayey, you can't miss the campaign posters of the candidates running for election to the new 1971-72 CCEA Board of Directors. John Gonzalez, current president, is seeking re-election for a second term. His strongest opponent is Frank Falmar who is campaigning on a platform offering, among other things, a picnic every three months, monthly luncheons, and many parties.

Farewell Party

Bob Smith and his wife, Carmen, were honored at a farewell dinner held at a Cayey restaurant on September 23. The dinner, sponsored by the CCEA, was attended by approximately 40 persons, including the families of his fellow-workers. It was a very pleasant evening, and Bob was presented with a nice pen and pencil set as well as a traveling kit.

Promotions

Congratulations to Augie Ferrer on his promotion to senior technician. Keep up the good work, Augie.

5-Year Awards

The following Headquarters personnel received five-year service awards during July, August and September:

Finance and Administration: Mary E. Huggett.

General Counsel: John B. Gantt and Joan M. Miller.

International: Roman I. Ulans.

Laboratories: William G. Schmidt, Jr., Priscilla E. Wurtzel.

Operations: Harry G. Gross, Barbara F. Hurley, William Lee, Carl A. Sederquist and Margaret F. Walker.

Technical: Curtis L. Adkins, William H. Brauer, Rosemary G. Davis, Irving H. Dostis, Sidney G. Embrey, Sandra A. Fox, Russell E. Jordan, Jr., David W. Lipke, Donald J. Pavlack, and Edward N. Wright.