COMSAT AT 15

Communications Satellite Corporation
Answering the need for better communications

The first fifteen years

Fifteen years ago, on February 1, 1963, Communications Satellite Corporation (COMSAT) was formed as a privately owned corporation to carry out a unique and challenging mandate embodied in the Communications Satellite Act of 1962.

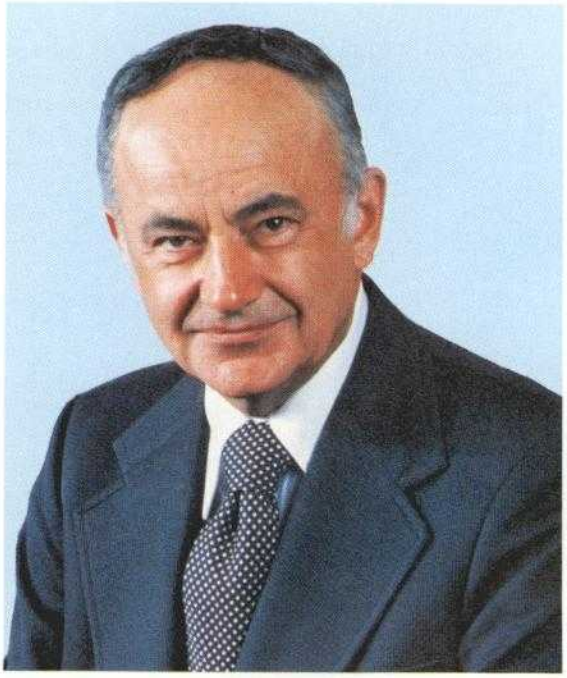
This mandate gave COMSAT the responsibility for establishing, in conjunction and cooperation with organizations of other countries, a global commercial communications satellite system as expeditiously as practicable.

In looking back over our short history, we believe that the chronology of significant events presented in this booklet demonstrates that our responsibilities under the Satellite Act have been fulfilled far beyond the expectations many may have had when the legislation was enacted.

Membership in INTELSAT, the international body formed to establish the global satellite system, has grown from the original eleven countries to more than 100 countries.

When the EARLY BIRD satellite initiated commercial service in the North Atlantic region in 1965, only five countries had access to the satellite; today about 120 countries, territories and possessions are using global system services full-time.

EARLY BIRD had a capacity to provide only 240 simultaneous telephone calls, or one television channel; today's highly advanced satellites have a capacity to provide 6,000 telephone calls plus television and



the satellites of the 1980's will have a capacity for at least 12,000 telephone calls plus television.

Before EARLY BIRD, film of international news events was carried by plane from country to country; today more than a billion persons, one out of every four on earth, can see important events on television as they happen, Live Via Satellite.

Charges for a phone call from New York to London which were $12 before EARLY BIRD are now only five dollars, or less.

All forms of communications—telephone, television, teletypewriter, high speed data and facsimile —flow simultaneously over more than 550 satellite pathways; a major portion of all international communications and about two-thirds of all transoceanic communications are going by satellite.

The INTELSAT system has revolutionized world communications, but equally dramatic advances are being made in U.S. domestic and mobile and specialized communications services.

The MARISAT System, initiated and managed by COMSAT's subsidiary, COMSAT General Corporation, is now providing maritime satellite communications service to the U.S. Navy in the Atlantic, Pacific and Indian Ocean regions, and to the commercial shipping and offshore industries in the Atlantic and Pacific regions. And it is planned that commercial service will be extended to the Indian Ocean region by mid-1978. Long distance message telephone toll services in the U.S. are being provided by AT&T and GTE through COMSAT GENERAL's COMSTAR satellites. And Satellite Business Systems, a COMSAT GENERAL partnership with IBM and Aetna Life & Casualty, plans by 1981 to be providing private communications networks to businesses, government agencies and other customers through an all-digital, switched domestic satellite system using small earth stations located on the customers' premises.

As expected, we have encountered many difficulties along the way, but we have overcome most of them and our accomplishments have been impressive. As we mark our Fifteenth Anniversary, we express our appreciation to our employees, our customers, our shareholders and to those in government who have been instrumental in molding COMSAT and its future. We can, indeed, take pride in our achievements and look to the future with confidence.

JOSEPH V. CHARYK
President

JOSEPH H. MCCONNELL
Chairman of the Board
of Directors

January 3, 1978

The ultimate result will be to encourage and facilitate world trade, education, entertainment and many kinds of professional, political and personal discourses which are essential to healthy human relationships and international understanding.

JOHN F. KENNEDY
August 1962

PRELUDE

Public Law 87-624
87th Congress, H. R. 11040
August 31, 1962

An Act

76 STAT. 419.

To provide for the establishment, ownership, operation, and regulation of a commercial communications satellite system, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—SHORT TITLE, DECLARATION OF POLICY AND DEFINITIONS

SHORT TITLE

SEC. 101. This Act may be cited as the "Communications Satellite Act of 1962". Communications Satellite Act of 1962.

DECLARATION OF POLICY AND PURPOSE

SEC. 102. (a) The Congress hereby declares that it is the policy of the United States to establish, in conjunction and in cooperation with other countries, as expeditiously as practicable a commercial communications satellite system, as part of an improved global communications network, which will be responsive to public needs and national objectives, which will serve the communication needs of the United States and other countries, and which will contribute to world peace and understanding.

(b) The new and expanded telecommunication services are to be made available as promptly as possible and are to be extended to provide global coverage at the earliest practicable date. In effectuating this program, care and attention will be directed toward providing such services to economically less developed countries and areas as well as those more highly developed, toward efficient and economical use of the electromagnetic frequency spectrum, and toward the reflection of the benefits of this new technology in both quality of services and charges for such services.

(c) In order to facilitate this development and to provide for the widest possible participation by private enterprise, United States participation in the global system shall be in the form of a private corporation, subject to appropriate governmental regulation. It is the intent of Congress that all authorized users shall have nondiscriminatory access to the system; that maximum competition be maintained in the provision of equipment and services utilized by the system; that the corporation created under this Act be so organized and operated as to maintain and strengthen competition in the provision of communications services to the public; and that the activities of the corporation created under this Act and of the persons or companies participating in the ownership of the corporation shall be consistent with the Federal antitrust laws.

(d) It is not the intent of Congress by this Act to preclude the use of the communications satellite system for domestic communication services where consistent with the provisions of this Act nor to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs or if otherwise required in the national interest.

August 27, 1962—Congress completed its passage of the Communications Satellite Act of 1962, which set forth a national policy for the establishment of a satellite system in cooperation with other nations. The Satellite Act authorized a new, private company to be formed to represent the United States in the satellite system. That company is COMSAT.

The responsibility of Congress did not end with passage of the Act; relevant committees of Congress have a continuing interest in how the objectives of the Act are implemented.

August 31, 1962—The Satellite Act became law when President John F. Kennedy signed it in a White House ceremony attended by sponsors and supporters of the legislation. The President of the United States and the Executive Department were given special responsibilities for overseeing the implementation of the national policy set forth in the Act, and the President was directed to report annually to Congress on activities and accomplishments under the Act.

October 4, 1962—The Incorporators of the Corporation were nominated by President Kennedy, and given recess appointments on October 15, 1962, with responsibility for directing the initial activities of the Corporation. The Incorporators became the first Board of Directors, serving until the shareholders elected a Board at the First Annual Meeting. Their nominations by President Kennedy were confirmed by the Senate.

Those who served as Incorporators and their occupations at the time were Beardsley Graham, President, Spindletop Research, Inc., Lexington, Ky.; Philip L. Graham, President, The Washington Post, Washington, D.C.; John T. Connor, President, Merck & Co., Rahway, N.J.; George T. Feldman, Vice President and Counsel, Mastan Co., New York, N.Y.; Sam Harris, Attorney, New York, N.Y.; Edgar F. Kaiser, President, Kaiser Industries Corporation, Oakland, Calif.; David M. Kennedy, Chairman, Continental Illinois National Bank and Trust Company of Chicago, Ill.; George Killion, President, American President Lines, San Francisco, Calif.; Byrne Litschgi, Attorney, Tampa, Fla.; Leonard H. Marks, Attorney, Washington, D.C.; Bruce G. Sundlun, Attorney, Providence, R.I., and Washington, D.C.; Sidney J. Weinberg, Partner, Goldman, Sachs & Co., New York, N.Y.; and Leonard Woodcock, Vice President, UAW-CIO, Detroit, Mich. The Incorporators held their first meeting on October 22, 1962.

COMSAT, under the provisions of the Satellite Act and as a U. S. communications common carrier, is subject to regulation by the Federal Communications Commission. Thus, from the beginning the Commission has had a statutory role in the implementation of the national policy for satellite communications services.


STAFF

1963

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DISTRICT OF COLUMBIA
OFFICE OF SUPERINTENDENT OF CORPORATIONS

CERTIFICATE OF INCORPORATION
OF
COMMUNICATIONS SATELLITE CORPORATION

The undersigned, as Superintendent of Corporations of the District of Columbia, hereby certifies that duplicate originals of Articles of Incorporation for the incorporation of Communications Satellite Corporation, pursuant to the provisions of the Communications Satellite Act of 1962, duly signed and verified pursuant to the provisions of the District of Columbia Business Corporation Act of June 8, 1954, as amended, have been received in this office and are found to conform to law.

ACCORDINGLY, the undersigned, as such Superintendent of Corporations, and by virtue of the authority vested in him by law, hereby issues this Certificate of Incorporation of Communications Satellite Corporation and attaches hereto a duplicate original of the Articles of Incorporation.

Dated February 1st 1963

Superintendent of Corporations

FILED
February 1 1963
BY:

February 1, 1963—The Communications Satellite Corporation (COMSAT) was officially born with the issuance of its Certificate of Incorporation by the Superintendent of Corporations for the District of Columbia.

COMSAT's Articles of Incorporation were adopted on January 29, 1963, and transmitted to the President of the United States. President Kennedy approved them on January 31 and returned them to the Incorporators, along with an opinion by Attorney General Robert F. Kennedy, who advised that the Articles were not inconsistent with any provisions of the Communications Satellite Act.

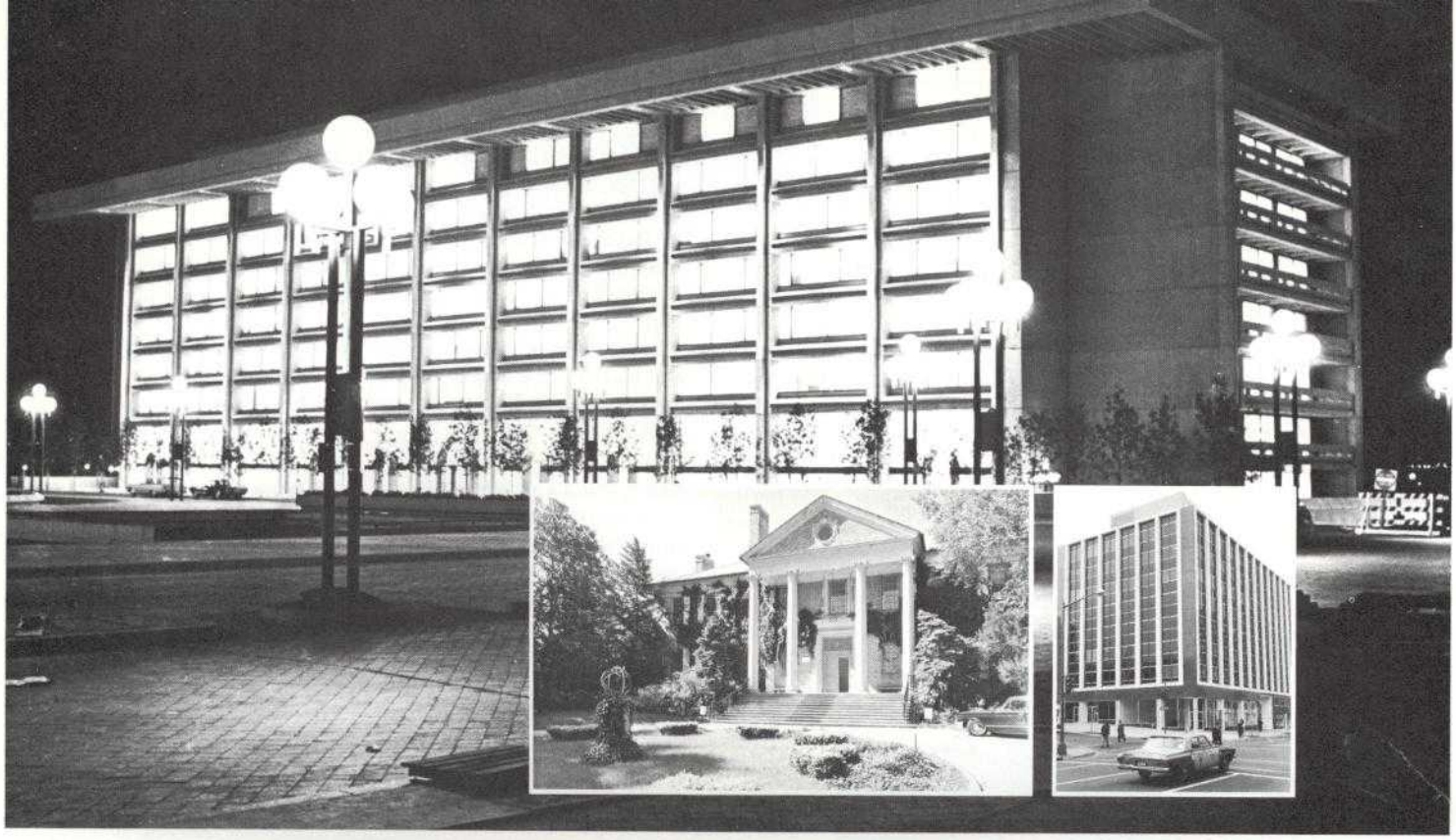
Later in the month a $5 million line of credit with commercial banks for COMSAT's start-up costs was approved by the FCC.

February 15, 1963—For its first headquarters, COMSAT leased Tregaron, a large Northwest Washington home formerly owned by Joseph E. Davies, U.S. Ambassador to Moscow during World War II.

COMSAT occupied Tregaron until November 1964 when it moved its headquarters to an office building at 1900 L Street, N.W., in downtown Washington. At the same time, COMSAT established its technical staff and its initial satellite control center in an office building at 2100 L Street, N.W.

In June 1968 the headquarters and technical staff were moved to the COMSAT Building at L'Enfant Plaza in Southwest Washington. The building contains a permanent Spacecraft Technical Control Center (STCC) and an Operations Center. While the STCC is responsible for command and control of the satellites, the Operations Center supervises and monitors traffic routings for the global satellite system.

March 10, 1963—The Board of Directors formally elected the two principal officers of the Corporation. The first Chairman and Chief Executive Officer of the Corporation was Leo D. Welch, a former Chairman of the Board of the Standard Oil Company (New Jersey). Dr. Joseph V. Charyk, the first President, earlier served as Under Secretary of the Air Force after wide experience in industry and on university faculties.



PHILIP L. GRAHAM
Chairman of the Incorporators 1962

SAM HARRIS
Chairman of the Incorporators 1962-1963

LEO D. WELCH
Chairman of the Board and Chief Executive Officer 1963-1965

JOSEPH V. CHARYK
President 1963-

JAMES MCCORMACK
Chairman of the Board and Chief Executive Officer 1965-1970

JOSEPH H. MCCONNELL
Chairman of the Board 1970-

1964

April 16, 1964—COMSAT awarded its first hardware contract, an order to Hughes Aircraft Company for an experimental-operational satellite to test the feasibility of synchronous orbits for commercial communications satellites. The contract also provided for a backup in case the first satellite should be a failure.

Later the satellite was named Early Bird and still later was designated as INTELSAT I. As events would prove, the Early Bird program was a resounding success.

June 2, 1964—COMSAT's initial stock issue was oversubscribed the first day. It consisted of 10 million shares at $20 a share. Net proceeds to COMSAT were about $196 million.

Under provisions of the Satellite Act, half of this stock (Series I) was sold to the public in a manner encouraging the widest possible distribution to the American public. A nationwide group of 385 underwriting firms offered the shares to the public. The result was over 130,000 individual shareholders of record.

The other half of the stock (Series II) was sold to 163 communications common carriers, which had been authorized by the Federal Communications Commission to hold shares. (In the years following the stock offering, most of the carriers sold their shares to the public and by 1977 they held less than one percent of the total shares outstanding. The largest carrier sale occurred in 1973 when American Telephone and Telegraph Company sold its 2,895,750 shares in a public offering.)

On September 8, 1964, COMSAT shares (ticker symbol: CQ) were listed on the New York, Midwest and Pacific Stock Exchanges.

August 20, 1964—The International Telecommunications Satellite Consortium (INTELSAT), a unique parnership for progress, was created as a result of two international agreements opened for signature in Washington, D. C. Under the international agreements for interim arrangements for INTELSAT, COMSAT was designated Manager on behalf of the member nations.

The number of member-nations increased each year and exceeded 100 in 1977.

September 17, 1964—The first annual meeting of COMSAT shareholders was held. The initial Board of Directors was succeeded by a Board comprising 12 directors elected by the shareholders and three appointed by the President of the United States with the advice and consent of the Senate. Of the 12 elected directors, six (Series I) were elected by the public shareholders and six (Series II) were elected by the carrier shareholders.

October 10, 1964—At the request of the United States Government, COMSAT coordinated the arrangements for televising the 1964 Olympic ceremonies from Tokyo live to the United States via NASA's experimental satellite SYNCOM III and the U. S. Navy earth station at Point Mugu, California, modified by COMSAT for the event. This service heralded the new era to be opened 8½ months later when Early Bird began commercial operation.

Agreement on Satellites Announced Via Syncom

By the Associated Press

An international agreement on radio frequencies for satellite communications was announced at a news conference conducted by way of the Syncom satellite.

From Geneva, Ambassador Joseph McConnell, chairman of the United States delegation to the Space Radio Conference sponsored by the International Telecommunications Union, said agreements reached there had provided assurance that manned and unmanned space research programs of all nations could proceed satisfactorily so far as their radio frequency needs are concerned.

At the Washington end of the space conference, Joseph Charyk, president of the Communications Satellite Corporation, said that with this problem out of the way work can proceed on arrangements for other countries to take part in the global satellite communications system planned by the United States.

He said work would get under way immediately on the technical characteristics of the system and on negotiation of agreements with interested foreign countries.

After Mr. McConnell read a statement on the Geneva meeting results yesterday, re-

70-Nation Radio OK For Space

By Stuart H. Loory

Of The Herald Tribune Staff

WASHINGTON, Ambassador Joseph McConnell made an announcement to the world by phone yesterday. It came from the Batiment Electorale, a meeting hall in Geneva, Switzerland, over a phone connection and ran like this:

From Geneva to Rota, Spain, to the Navy ship Kingsport, in harbor there by land line; thence by radio beam to the Syncom satellite 22,300 miles above Northern Brazil and back down to Lakehurst, N. J., and finally over land lines to Washington.

The route of the voice fitted the occasion. Mr. McConnell used it to explain how he was about to sign his name for the United States to an international agreement on the use of radio frequencies in space communications. He is the top U. S. representative at the Geneva meeting.

The agreement enables the American Communications Satellite Corp., which will be privately owned, to begin detailed design of a system that could be in operation by 1968.

Signed by the 70 nations that belong to the International Telecommunications Union, the agreement also provides:

¶A set of frequencies to be set aside for ten year at least for exclusive use by radio astronomers probing the universe. Some of these frequencies could be used for commercial television. Cuba refused to agree to the conservation of one of these frequencies.

¶The creation of a radio channel asked by the Soviet Union and reserved exclusively for use by astronauts in distress, similar to channels now reserved for seamen and pilots.

¶Allocation of frequencies for navigational and meteorological satellite use as well as for other types of space science work.

¶Allocations of a small bands for use by amateur radio operators using space vehicles.

Dr. Joseph Charyk, president of the Communications Satellite Corp. was obviously pleased with the agreement.

"We can now make our plans on a solid basis," he told reporters gathered at the headquarters of the National Aeronautics and Space Adminis-

18 NATIONS T JOIN IN SATELLITE PLAN

U.S. Sharing Ownership in Communications Venture

By JOHN W. FINNEY

Special to The New York Times

WASHINGTON, July 24—Eighteen nations reached agreement today on international ownership and management of the global communications satellite system being developed by the United States.

Under the unusual international arrangement, initial ownership in the $200 million enterprise will be shared among the 18 nations and the Vatican, with the United States having a preponderant financial interest. Part ownership will be open to all other nations.

Policy for the private-public venture into space will be set by a 12-man international committee representing the individual owners. The United States Communications Satellite Corporation will serve as manager of the system.

This consortium arrangement, described as unprecedented in international business by Leo D. Welch, board chairman of the Communications Satellite Corporation, was worked out at a four-day conference here this week.

Mr. Welch described the agreement as a "very important chapter" in the development of a global space communications system that, starting in 1967, will link all areas of the world.

As was indicated by Mr. Welch, what started off as an American enterprise, centered on the privately owned Communications Satellite Corporation, is now evolving into an international enterprise joining private and public agencies.

The evolution, in the opinion of corporation and Administration officials, has taken place with remarkable rapidity and smoothness over the last six months.

The only critical issue that remained for the conference was the voting power within the 12-man committee. It will have 100 votes, with each member's vote depending upon its percentage of ownership. Thus the United States, with a 61 per cent ownership, would have 61 votes.

The controversial question, however, was how many votes would be required for an effective majority. It was a question that pitted the United States

AT GLOBAL SATELLITE AGREEMENT SIGNING: Leo D. Welch, chairman and chief executive officer of the Communications Satellite Corp.; G. Griffith Johnson, Assistant Secretary of State for Economic Affairs; Rosel Hyde, Federal Communications Commissioner; and former FCC Commissioner T. A. M. Craven, who took part in many major international conferences during his career with FCC, have a few words together after the signing of the international global satellite agreement in Washington last Thursday.

Nations Sign Int'l Agreement For Global Satellite System

WASHINGTON.—Officials from 10 countries and Vatican City signed the international agreement for a communications satellite system at the State Department here last Thursday.

Two interrelated agreements were signed to launch the international joint venture to operate a global commercial communications system.

Government representatives signed one agreement dealing primarily with organizational principles and officials of the entities involved signed the other, which deals with commercial and operating aspects of the system.

The system is scheduled to start handling international communications traffic early next year with the Early Bird synchronous satellite serving North America and Europe. The basic global system will come in 1968, with the full system scheduled to be in operation by late 1967.

The Communications Satellite Corp. owns 61 per cent of the stock and will manage the system on behalf of all participants.

The agreements are both of an interim nature. An international conference in 1969 will work out a permanent agreement.

Those signing the general Government agreement were:

Australia, Alan P. Renouf, Charge d'Affaires Ad Interim; Australia; Canada, George P. Kidd, Charge d'Affaires Ad Interim; Denmark, Erik Krog-Meyer, Charge d'Affaires Ad Interim; France, Bruno De Leusse, Charge d'Affaires Ad Interim; Italy, Sergie Fenoaltea, Ambassador; Japan, Ryuji Takeuchi, Ambassador; the Netherlands, Carl W. A. Schurmann, Ambassador; Spain, The Marquis De Merry Del Val, Ambassador; United Kingdom, Denis A. Greenhill, Charge d'Affaires Ad Interim; United States, G. Griffith Johnson, Assistant Secretary of State for Economic Affairs; and Vatican City, Monsignor Luciano Storero, auditor, Apostolic Delegation, here.

Special Pact.

Signing the special agreement for entities were: Canada, D. F. Bowie, president and general manager of Canadian Overseas Telecommunication Corp., and C. S. Gregory, assistant general manager and secretary of the same organization; Denmark, Mr. Krog-Meyer; France, Mr. Bruno De Leusse; Japan, Katsuzo Ohno, president of Kokusai Denshin Denwa Co., Ltd.; The Netherlands, Ambassador Schurmann; Spain, Ambassador De Merry Del Val; United Kingdom, Sir Robert James Paterson Harvey, Deputy Director General, General Post Office; United States, Le D. Welch, chairman, Communications Satellite Corp., and Vatican City, Monsignor Luciano Storero.

Ireland, Norway, Sweden, Belgium, Germany, Switzerland, Australia and Portugal took part in preliminary meetings but did not sign the agreements last week, although they are in accord with them. The agreements will be open for another six months not only to the countries which have been involved in earlier talks but to any country which is a member of the International Telecommunications Union. Countries which do not sign the agreement, however, may still use the facilities on a non-discriminatory basis.

Australia and Italy will sign the

13 Nations, Vatican City Agree to Comsat Deal

WASHINGTON.

From the Herald Tribune Bureau

International participation in the global space communications network planned by the Communications Satellite Corp became a near-reality yesterday.

Thirteen nations initialed an agreement in a unique pact worked out during a week of discussions here which followed several meetings in Europe.

The agreements must still be ratified by the home governments before it is signed by the interested participants.

Five other nations plan to join the pact by Aug. 19, the date of its formal enactment, or as soon as convenient thereafter, Provisions have been made to allow them to join. When operative in 1967 the system will be open for use by any authorized carrier, whether a partner in the venture or not.

Each national group will control its own ground stations and internal communications network but seats will be apportioned to a board or "committee" which will set policy for the "space segment," satellites and related equipment.

Investment in the space segment would itself be based on this limitation has sharply cut back the amount of participation of some foreign interests.

Great Britain had offered to purchase about $43 million of the space segment, or 20 per cent, but has been limited to 8.15 per cent. France, held to 6.1 per cent, had expressed interest of a somewhat higher range. The percentages drop off sharply down to the Vatican's 0.05, which will cost it $100,000.

Comsat will hold 61 per cent and serve as managing agent. Not all foreign investors will have a seat on the committee. A minimum limit on representation is set at 1.5 per cent. Combination of lesser interests will be allowed. Thus Sweden (0.7 per cent), Norway (0.4 per cent) and Denmark (0.4 per cent) could combine to hold a Scandanavian seat on the committee.

The committee will determine various policy matters, select the type of satellites system, award major contracts and fix charges for non-owners who use its facilities.

A sharp division of opinion on the voting procedure of the committee had stalled an earlier agreement. Comsat, with 61 per

Comsat

(Continued from page 17)

ance of a voting procedure which would provide that an effective majority on all issues consist of the U. S. plus 15 other votes.

Yesterday's agreement provides that a passing vote shall be 73.5 per cent, or in effect the U. S. plus 12.5 per cent. An addenda to that provision states that if there is any delay beyond 60 days on certain significant issues, such as systems choice or satellite purchases, then the vote required drops to 69.5 per cent, or the U. S. plus 8.5 per cent.

On another issue a compromise was reached. The Europeans had wanted to move quickly into a formal organization but the U. S. was reluctant. Present agreement provides that the pact shall continue in force until Jan. 1, 1970, and another conference will be held in 1969 to determine whether to renew it or create another arrangement.

Although other countries may join the committee in the future with subsequent reduction of member percentages, Comsat is protected by a provision that it may never drop below 50 p cent.

Those who initialed the ag ment with Comsat, the U representative, are: Austr Belgium, Canada, Denm Federal Republic of Germa France, Ireland, Italy, Ja the Netherlands, Switzerla the United Kingdom and Vatican City.

Details were outlined newsmen by G. Griffith Jo son, U. S. Assistant Secre of State for Economic Aff Ambassador Eraldo Ortona, rector General for Econo Affairs of the Italian Mini of Foreign Affairs; and Le Welch, comsat chairman chief executive officer.

Mr. Johnson served as ch man of the conference and Ortona was vice-chairman.

Mr. Johnson said the ag ments make it possible mo move ahead very rapidly the technical program wi Comsat already had develo to a considerable degree.

Mr. Ortona called the cussions "most fruitful" indicative of excellent coop tion in the technical field operation which "might be portant also for its poli

OLYMPIC SALUTE: Yoshinori Sakai raises Olympic torch after lighting the cauldron at stadium in Tokyo.

Television Program From Japan Opens Olympic Relay Link

By JOHN W. FINNEY

Special to The New York Times

WASHINGTON, Oct. 7—A transpacific satellite link was opened today with a 15-minute television broadcast from Japan.

The communications satellite link will permit television broadcasts of the Olympic games to North America and indirectly, to Europe.

The television pictures relayed by the Syncom 3 satellite hovering 22,300 miles high over the mid-Pacific, were of remarkably good quality—far better than officials had expected.

President Johnson spoke at the opening of a 15-minute television program that was seen simultaneously in Japan and the United States.

The program included an exchange of statements between Secretary of State Dean Rusk and Japanese Foreign Minister Etsusaburo Shina as well as scenes of rehearsals for the Olympics' opening day ceremony on Oct. 10 and swimmers practicing in the new Olympic pool.

Mr. Johnson said that a global communications satellite system "can be a great con-

Sharp TV Pictures of Olympics Relayed Live to U.S. by Satellite

By JACK GOULD

Live television coverage of this morning's opening of the Olympic Games in Tokyo was of superlative quality, a triumph of electronic technology that was almost breathtaking in its implications for global communications.

The pictures were relayed by Syncom 3, the satellite that hovers in fixed position 22,300 miles above the Pacific Ocean. They were in every way markedly superior to the previous international TV experiments by Telstar satellites over the Atlantic Ocean.

The clarity and definition of the images from Japan were as images was nothing short of extraordinary.

Syncom 3 was designed by the Hughes Aircraft Company. The pickup of the Olympic Games was handled by the Japanese Broadcasting Corporation and was relayed in this country by the National Broadcasting Company. The live pictures were also seen simultaneously in Mexico this morning.

Because the TV pictures occupied the full technical capability of Syncom 3, the accompanying sound remuneratary was relayed across the Pacific by cable.

The pickup from Tokyo embraced Africa made a striking pictorial scene.

The athlete carrying the flame up the seemingly endless staircase to light the torch atop the stadium was seen in absorbing detail. As the American flag was carried in the procession one could see creases in the faces of the individual athletes in some of the closeups.

The panoramama perspective of the 8,000 athletes assembled in the center of the stadium taking the Olympic oath was exceptionally impressive. As thousands of pigeons circled over the field, the quality of transmission permitted an American viewer to focus on individual birds.

The chief advantage of Syncom 3 over the Telstar satellite aside from the technical picture quality, lay in the duration of the transmission. This morning's broadcast, which began at 1 A.M. here (12 P.M. Saturday in Tokyo), ran for one hour and 45 minutes.

much lower, were more sub to the curvature of the e and could relay pictures only such time as the sate was in sight of both the s ing and receiving position period ranging between 70 30 minutes.

Orbits Above Pacific

Syncom 3 was launched f Cape Kennedy, Fla., on Aug primarily as a research veh After successfully soaring m than 23,000 miles into sp it was pushed by its small elliptic jets into a circular o above the intersection of Equator and international d line in the Pacific Ocean.

The jets arrest it there, tually, it appears motionless cause its speed of 6,800 m an hour matches the rota of the earth.

The venture represente combined effort by N.B.C., National Aeronautics and S Administration, the State partment and the Commun tions Satellite Corporation.

The New York Times.

GET YOUR COPY

Comsat Prospect(us)

A small pamphlet, too oddsized to fit conveniently into a pocket, 54 pages in length but with circulation figures high enough to draw admiration from any book publisher, is presently the darling of stock dealers. Its title:

PROSPECTUS

Communications Satellite Corporation

Originally projected for a printing of half a million, another press run may be required before the next 38 days go by. The date is important. Under Securities and Exchange Commission regulations all purchasers of an offering must receive a copy of the corporation prospectus no later than confirmation of their order or delivery of their securities, whichever is earlier.

If an investor does not receive a prospectus, he has a legal recourse which he can exercise for a period of at least a year, and in some cases longer. He can simply cancel his purchase.

Highly unlikely in a stock which has appreciated in value, this action is of indisputable use when the price dips below the purchase price.

The SEC warned all dealers in Comsat just prior to the issue that this requirement, among its other regulations, must be firmly adhered to. A casual check yesterday indicates the larger houses, in particular, are fully aware of it.'

Over-the-counter traders, currently involved in the marketing, are not directly involved in this SEC regulation. Since they deal with brokers, they normally provide one copy of the prospectus to each broker placing orders of the issue, confirmed Mort Weiss, of Singer, Bean and Mackie, Inc., one of the OTC larger houses handling Comsat trading.

All dealers who trade directly with the public must furnish a copy to each purchaser, and the heavy secondary trading has led to a huge distribution.

Merrill Lynch, Pierce, Fenner & Smith confirmed a distribution of more than 300,000 prospectuses as of yesterday. The printing firm of Security-Columbian Banknote acknowledged requests for 70,000 copies during the course of yesterday's trading.

Should an additional printing be required, it will be another dent in Comsat's return of $96 million from the public offering which will be depleted an estimated $650,000 to cover legal fees and taxes as well as printing and other costs. Estimates of the printing alone range from $75,000 to $100,000.

Attention is being directed to proper and full distribution of the prospectus, it is suspected, because of Comsat's extensive cautionary description therein of the dim prospect for profits within the near future. The SEC, charged with insuring that the public be fully informed, may be concentrating on that rare Comsat investor, the one with his eyes on balance sheets and not on the stars. —N. K.

Public Snaps Up Satellite Corp.'s Shares

$100 Million Issue Is a Fast Sellout —Trading Hectic

By VARTANIG G. VARTAN

Wall Street placed $100 million of stock in the Communications Satellite Corporation on sale yesterday, and the public—as expected—gobbled up the issue.

Priced initially at $20 a share, the stock soared as high as $27 in the first few minutes of hectic over-the-counter trading. Closing sales in late afternoon were made around $23. Late in the day, one dealer quoted Comsat at the close at 22⅞ bid and 23⅛ asked.

Comsat is this nation's first commercial venture into space. Its fleet of satellites to provide a commercial telephone, television and message system around the globe is expected to be in operation by late 1967.

Performance Strong

Wall Street gave the five-million-share sellout an investment banker's equivalent of A-O.K. after yesterday's performance.

"The whole day is Comsat, believe me," a stock trader said. The rest of the over-the-counter market was quiet, while prices on the New York Stock Exchange eased in lackluster trading.

Yesterday's activity in Comsat began with the sale of five million shares to investors who had requested the stock from their brokers. The maximization ran about 13 shares because of the vast demand.

Some of Comsat's first stockholders took their profits immediately—so-called "free-riding" profits that ran to $6 or $7 a formal clearance by the Securities and Exchange Commission, the shares began trading in the open market. The opening was 23 bid, 27⅛ asked. Immediate-

Joanne Cockrill of Continental Bank displays sample certificate of Communications Satellite Corporation. Behind her is Relay model, experimental communications vehicle.

Vast Job on Turning Out Certificates Is Begun in Chicago

Special to The New York Times

CHICAGO, June 2—The preparation of certificates for a transaction expected to be the most widely distributed initial stock offering in history got under way here today.

The offering made today will provide almost $200 million of permanent capital for the Communications Satellite Corporation.

The tremendous task of turning out certificates for the new 10 million-share Comsat issue was begun by the Continental Illinois National Bank and Trust Company of Chicago, principal transfer agent for the stock.

The start of the job was marked by ceremonies at which the first certificate issued to an underwriter was produced by a computer.

The bank estimated that 600,000 certificates would be issued before the initial distribution was completed.

New Computer System

The computer system developed by the bank and the International Business Machines Corporation to handle the Comsat project was described as the country's first to create its own account numbers, print certificates automatically and generate transfer records, although some of these functions previously had been performed by

Public Eagerly Snaps Up Huge Comsat Issue

Shares Rationed; Premium Price Paid Quickly

New York, June 2 (AP)—The space-minded public snapped up 100 million dollars of stock in the Communications Satellite corporation today.

Sale of the 5-million-share offering in the space communications venture (Comsat) was cleared this morning by the Securities and Exchange commission.

Demand was so heavy that brokers rationed stock below the 50-share limit to each customer set by the government.

Earlier, another 5 million shares were allotted to 163 companies in the communications industry at $20 a share. American Telephone and Telegraph company invested 58 million dollars.

Will Finance System

Under the rationing system, it was estimated that Comsat stock was bought by 500,000 to one million individuals. Until now, the largest initial distribution was Ford Motor company's stock in 1956, which was purchased by about 320,000 persons.

The public offering was made by more than 1,200 underwriters and investment houses across the country.

Comsat's fleet of satellites to provide a commercial telephone, television, and message system around the globe is expected to be in operation by 1967.

Negotiating With Two

The corporation is negotiating with two groups — American Telephone with Radio corporation of America, and Space Technology Laboratories, Inc., with International Telephone and Telegraph corporation—on award of contracts for engineering designs for various types of medium altitude satellite systems. Each agreement reached will provide for completion of the design within

Syncom III Passes Toky Linkup Test

The Syncom III comm cations satellite transmi excellent live television tures from Japan yeste in its first major test—a run" for Olympic ga coverage.

The broadcast inclu salutations from U.S. Japanese government cials and four minutes swimming practice by U.S. Olympic team.

President Johnson, in marks telecast to both c tries, hailed the communications development as ope "new vistas of friendship understanding in the field education, cultural exchange business and entertainme

The satellite is hove 22,300 miles above the l tional dateline, at Equator. The pictures transmitted to Syncom 3 a station near Tokyo were sent by the satellite receiving station at Po Mugu, Calif.

Although the pictures w good, the sound was po through no fault of Sync Representatives of Communications Sate Corp. said that since satellite was not equipped carry the sound, it w moved by cable.

The orbiting satellites herald a new day in world communications. For telephone, message, data and television, new pathways in the sky are being developed. They are sky trails to progress in commerce, business, trade, and in relationships and understanding among peoples. Understanding among peoples is a precondition for a better and more peaceful world. The objectives of the United States are to provide orbital messengers, not only of words, speech, and pictures, but of thought and hope.

LYNDON B. JOHNSON
March 1965

1965

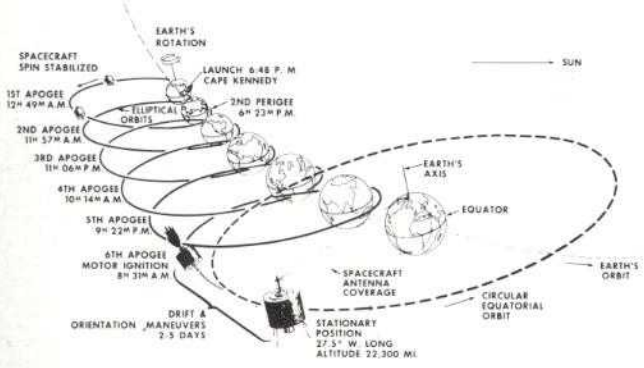
April 6, 1965—When Early Bird, the world's first commercial communications satellite, was launched from Cape Kennedy, a new communications era began. The event marked the first step toward a worldwide network of satellites linking peoples of many nations. Early Bird was the only mode of live transatlantic television, and it increased by nearly two-thirds the telephone capacity across the Atlantic.

Early Bird was emplaced in synchronous orbit 22,300 miles over the coast of Brazil by control signals transmitted from the Andover, Maine, Earth Station on command from the COMSAT Control Center in Washington, D.C. Vice President Hubert H. Humphrey watched the launch on a TV screen at COMSAT Headquarters in Washington.

Command and control of Early Bird and later satellites was exercised by the Spacecraft Technical Control Center. The Operations Center supervises and monitors traffic routings for the global satellite system.

In the United States and abroad, public and press interest in the launch was intense.

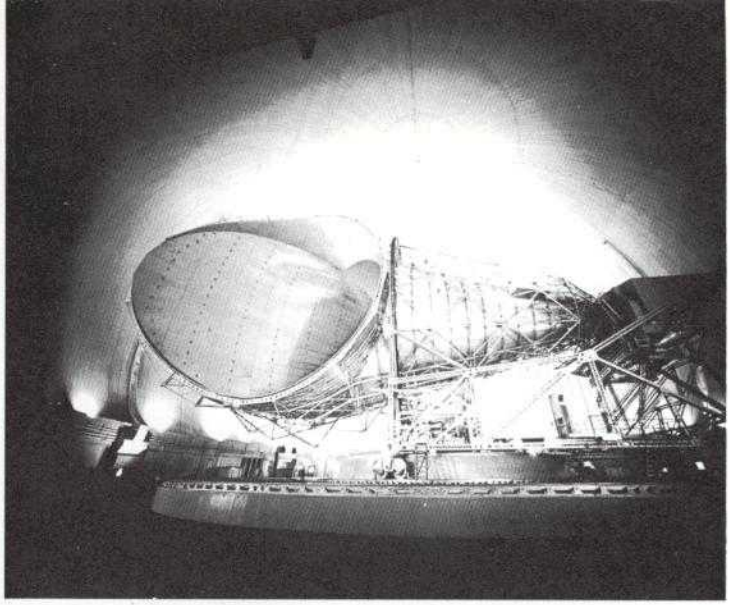
EARLY BIRD ORBITAL DYNAMICS

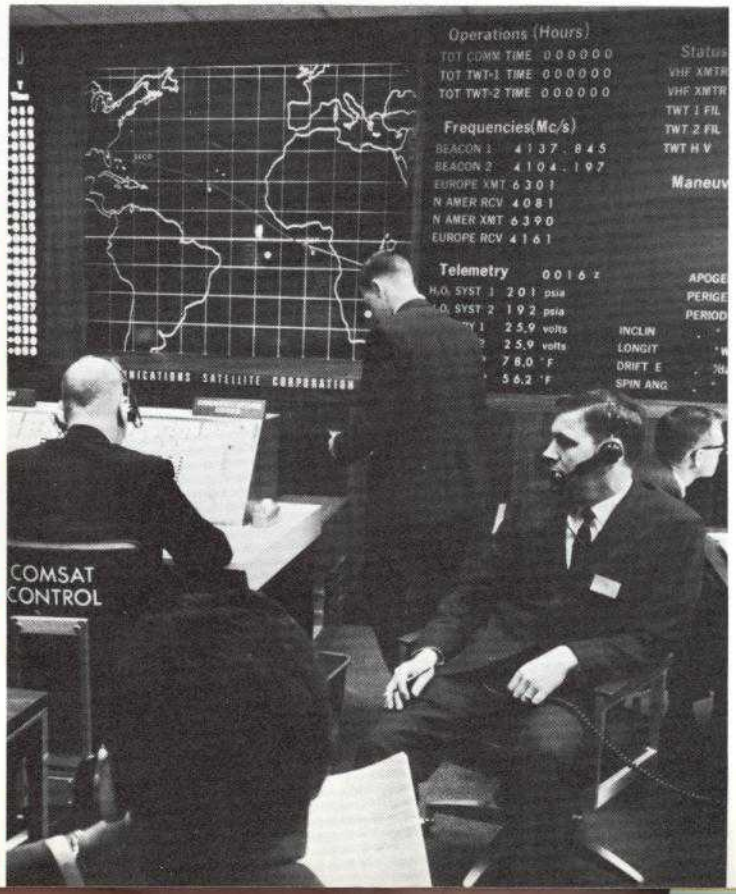


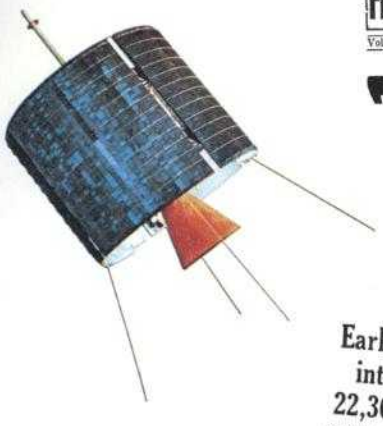
May 12, 1965—In an interim decision, the Federal Communications Commission awarded to COMSAT the sole responsibility for the design, construction and operation of three initial U.S. earth stations for international communications.

This decision applied to the earth station at Andover, Maine, which was being leased by COMSAT from the American Telephone and Telegraph Company, and the proposed stations at Paumalu, Hawaii, and Brewster, Washington. On August 29 COMSAT and AT&T signed an agreement for the sale of the Andover station to COMSAT.


30
UNITED STATES




Operations (Hours)
TOT COMM TIME 000000
TOT TWT-1 TIME 000000
TOT TWT-2 TIME 000000
Frequencies(Mc/s)
BEACON 1 4137.845
BEACON 2 4104.197
EUROPE XMT 6301
N AMER RCV 4081
N AMER XMT 6390
EUROPE RCV 4161
Telemetry 0016 z
COMSAT
CONTROL



FINAL

DAILY NEWS

NEW YORK'S PICTURE NEWSPAPER

7¢

Vol. 46, No. 245 New York, N.Y. 10017, Wednesday, April 7, 1965

'TALKING STAR' FLUNG IN ORBIT

Early Bird settles into its nest — 22,300 miles high

ANDOVER STATION SENDS SIGNALS TO SPACECRAFT; HANDLES TELEVISION WELL

Test of Early Bird's TV Heightens Optimism

Early Bird Satellite Relays a TV Signal In a Surprise Test

EARLY BIRD GETS 'EXCELLENT' MARK

Relays First Signal From 22,680 Mile Altitude

Early Bird Orbited as First Link In a Global Communications Net

'Pay-Phone' Satellite Racing Into Position

Clarín

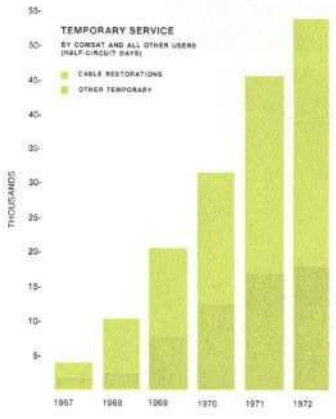
Una Nueva Cosmovisión

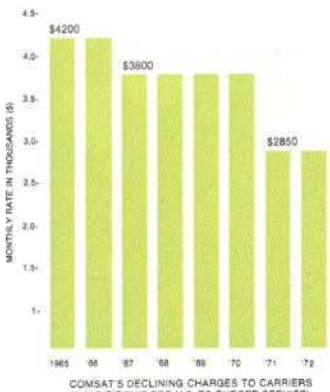
世界ダイヤル通話への道

LE LANCEMENT DU SATELLITE EARLY BIRD va marquer le début de l'utilisation commerciale de l'espace pour les communications téléphoniques

SATELLITE LOFTED FOR GLOBAL LINK

240回線



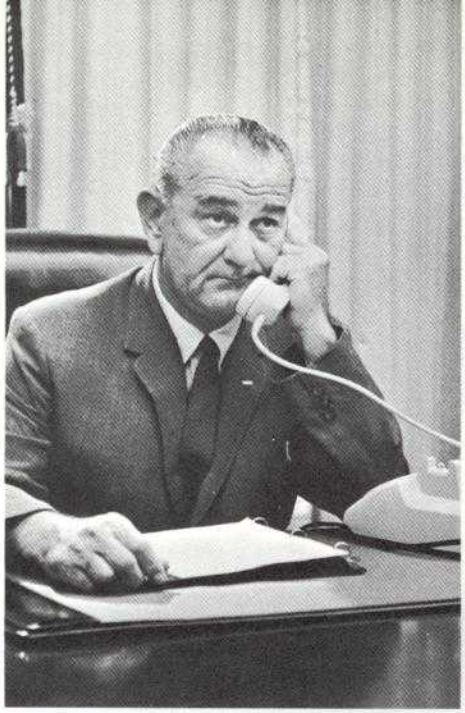


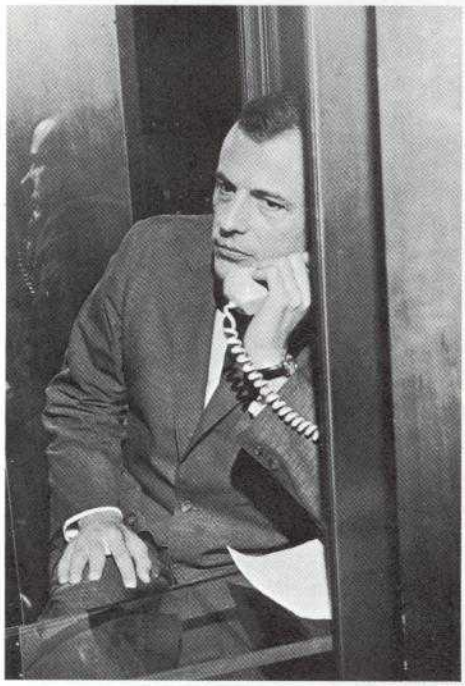
COMSAT'S DECLINING CHARGES TO CARRIERS
(HALF-CIRCUIT FOR U.S. TO EUROPE SERVICE)

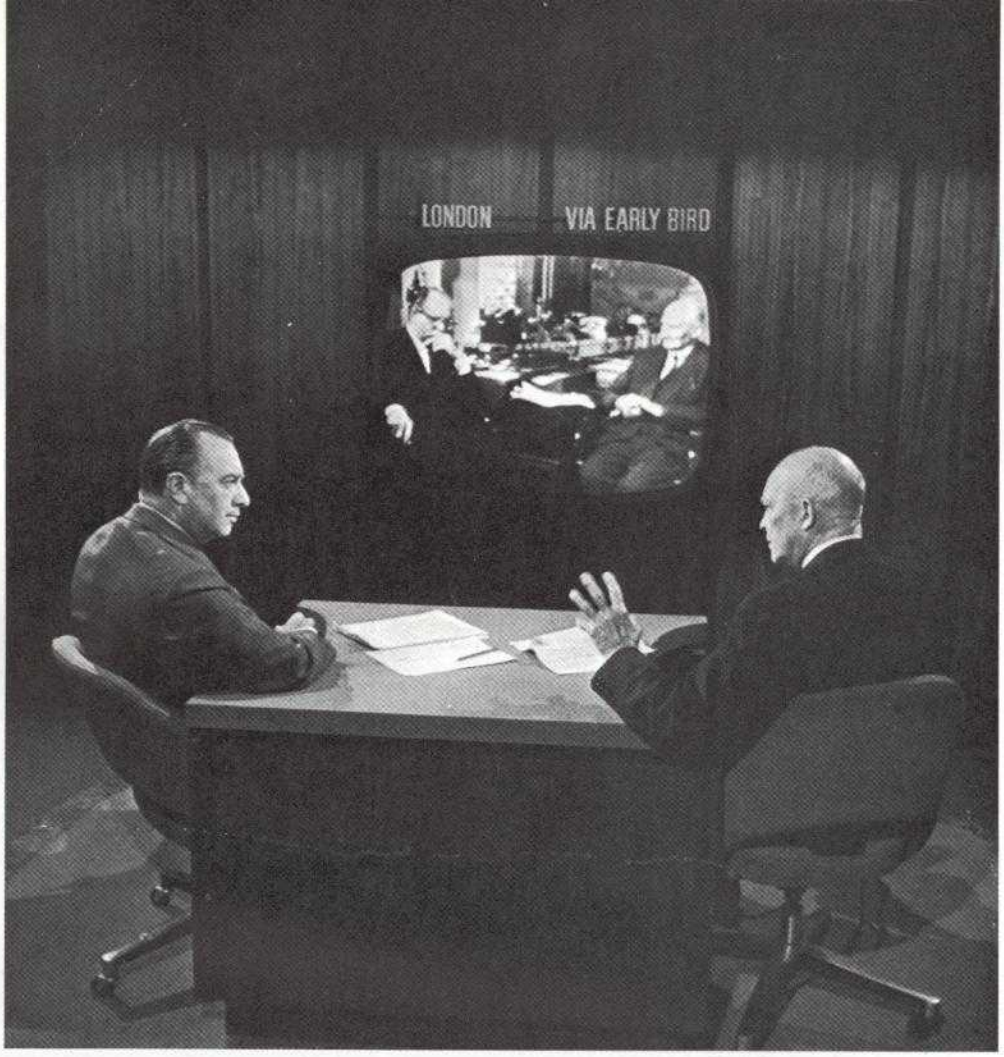
June 18, 1965—During a transatlantic submarine cable outage, Early Bird was used to restore service, the first such use of a satellite. Restoration of cable service via the satellite system increased in the years following Early Bird.

June 28, 1965—High government officials in the United States and Europe exchanged greetings via Early Bird in a transatlantic ceremony introducing commercial service. Participants in the early transmissions included British Prime Minister Wilson, Canadian Prime Minister Pearson, West German Chancellor Erhard, President Johnson, former President Eisenhower and Field Marshal Viscount Montgomery, Senator Warren G. Magnuson, and E. William Henry, Chairman of the Federal Communications Commission.

Before its inauguration Early Bird had successfully demonstrated television, voice and facsimile transmission.



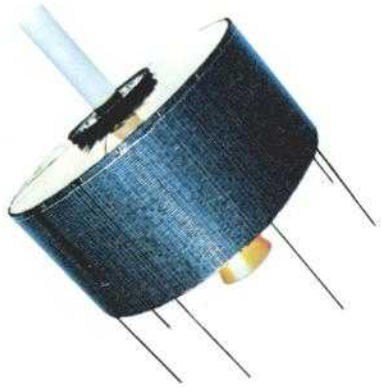


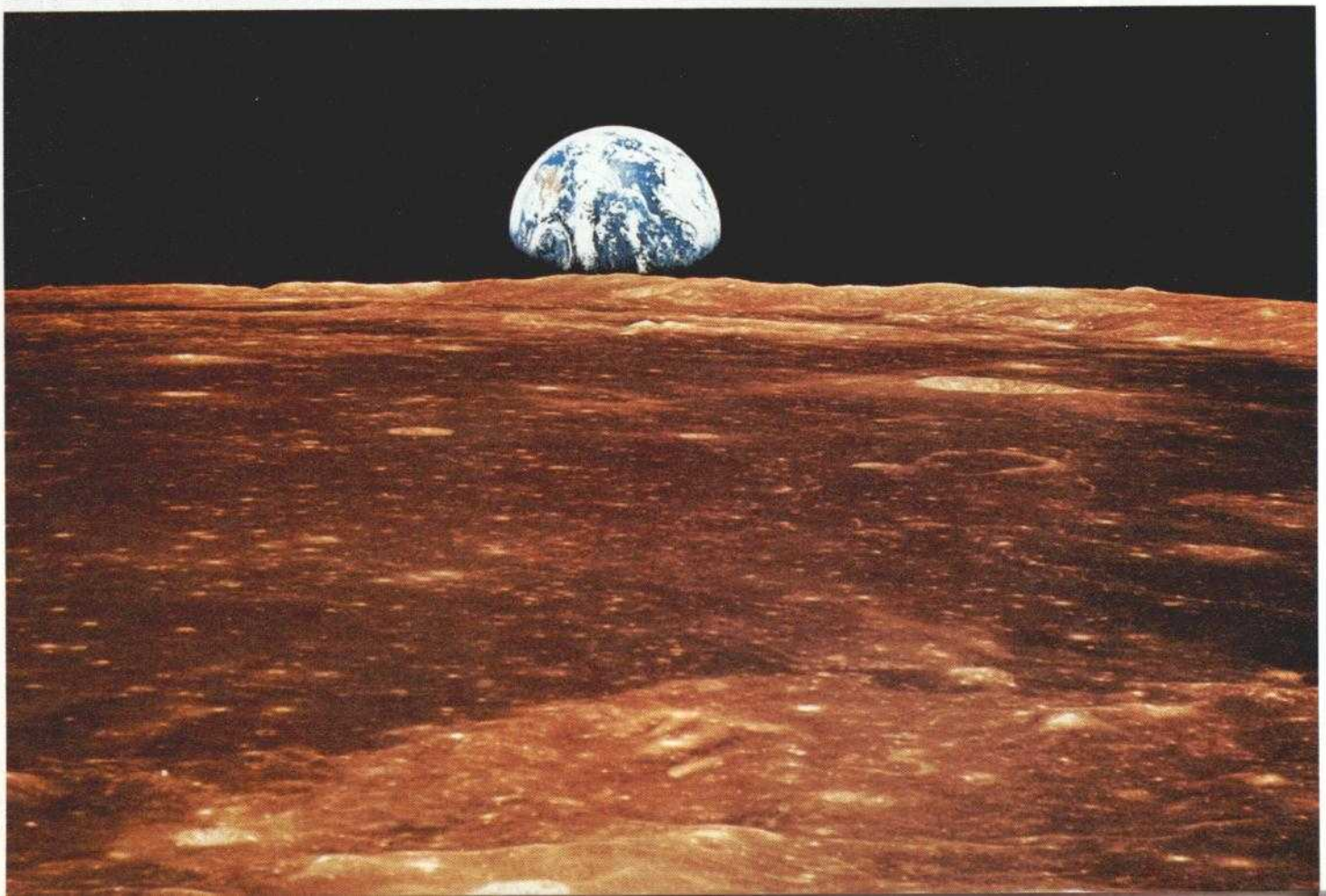

LONDON
VIA EARLY BIRD


NORTH
AMERICAN
NETWORKS
TO EUROPE
FROM EUROPE
FROM EUROPE
WIPE
SUPERS
NEW YORK TIME
FROM EUROPE
CONTROL CENTER
FROM EUROPE
TEST PATTERN
CONVERTER
DIRECT
FILM
TITLES
WASHINGTON
PHILADELPHIA

November 15, 1965—To provide early communications support for the National Aeronautics and Space Administration's Apollo moon-landing program, COMSAT awarded a contract to Hughes Aircraft Company for the INTELSAT II satellites.

The INTELSAT II series of satellites provided worldwide communications services associated with the early Apollo missions, as well as other commercial services. COMSAT also procured three transportable earth stations to be used as links in providing the Apollo services. Also, NASA established shipboard antennas for the relay of Apollo data via satellite.

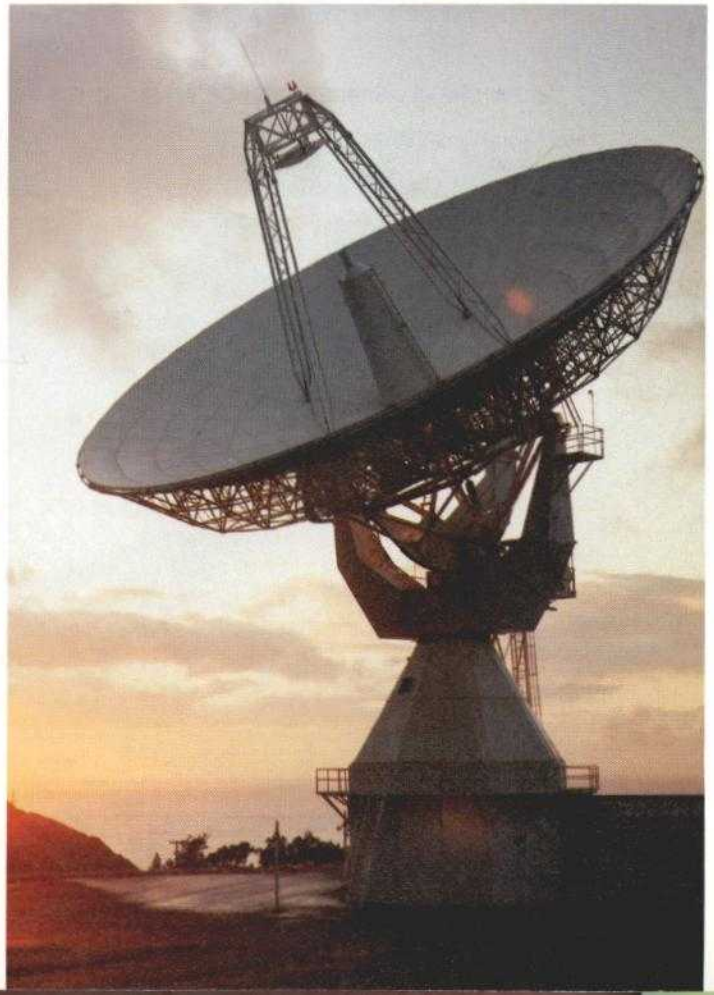




November 14, 1965—Ground-breaking ceremonies were held for the Brewster, Washington, Earth Station. The station entered commercial service on December 8, 1966.

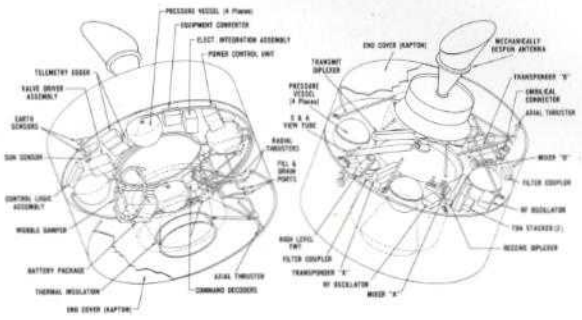
Among the officials who attended the ground-breaking were Sen. Warren G. Magnuson, Sen. Henry M. Jackson, Rep. Thomas S. Foley, all of Washington State, and COMSAT Chairman James McCormack.

December 27, 1965—Ground-breaking ceremonies were held for the Paumalu, Hawaii, Earth Station. At the groundbreaking ceremony were Sen. Daniel K. Inouye, Rep. Patsy T. Mink, Lt. Gov. William Richardson of Hawaii, Douglas S. Guild, President of Hawaiian Telephone Company and a COMSAT director, and James McCormack, Chairman of COMSAT. The station entered commercial service on December 8, 1966.

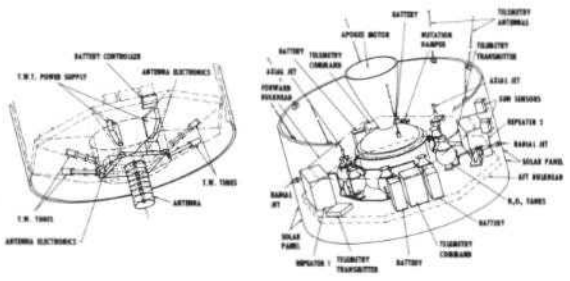


1966

COMPONENT ARRANGEMENT OF INTELSAT III



COMPONENT ARRANGEMENT OF INTELSAT II



June 23, 1966—COMSAT as Manager for INTELSAT awarded a contract to TRW Systems, Inc. for six INTELSAT III satellites to establish the initial global system.

The first launch was planned for 1968. These satellites were to provide five times the power of the INTELSAT II satellites, sufficient capacity to transmit television without relinquishment of circuits for voice service, and full multiple access capability.

August 1, 1966—In its first of several formal proposals for U.S. domestic satellite services, COMSAT asked the FCC for authority to establish a multipurpose service that would meet the needs of a wide range of communications users in the United States.

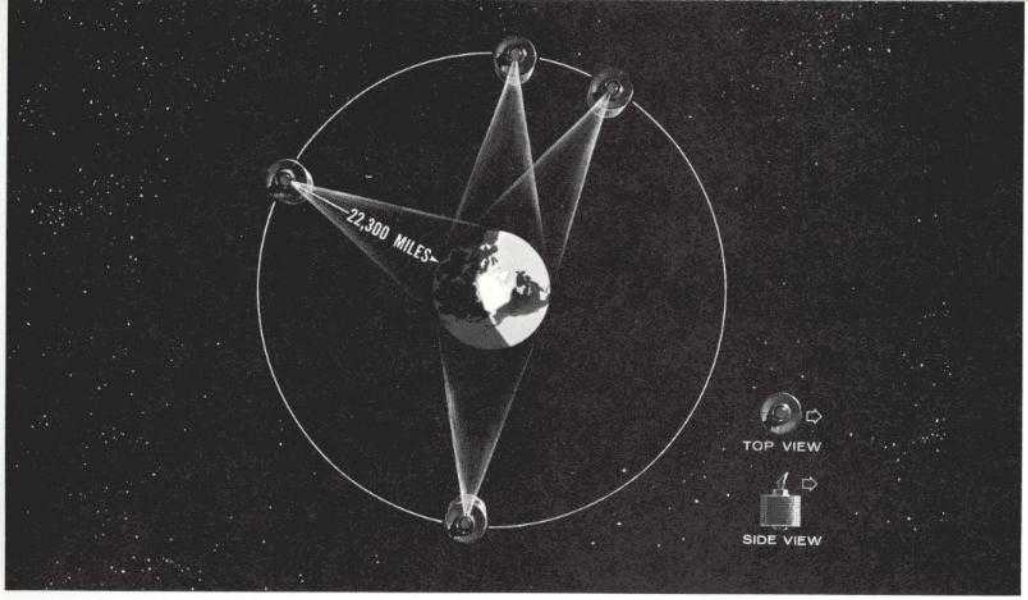
October 26, 1966—During the launch of the first INTELSAT II satellite, the apogee motor malfunctioned and synchronous orbit was not attained.

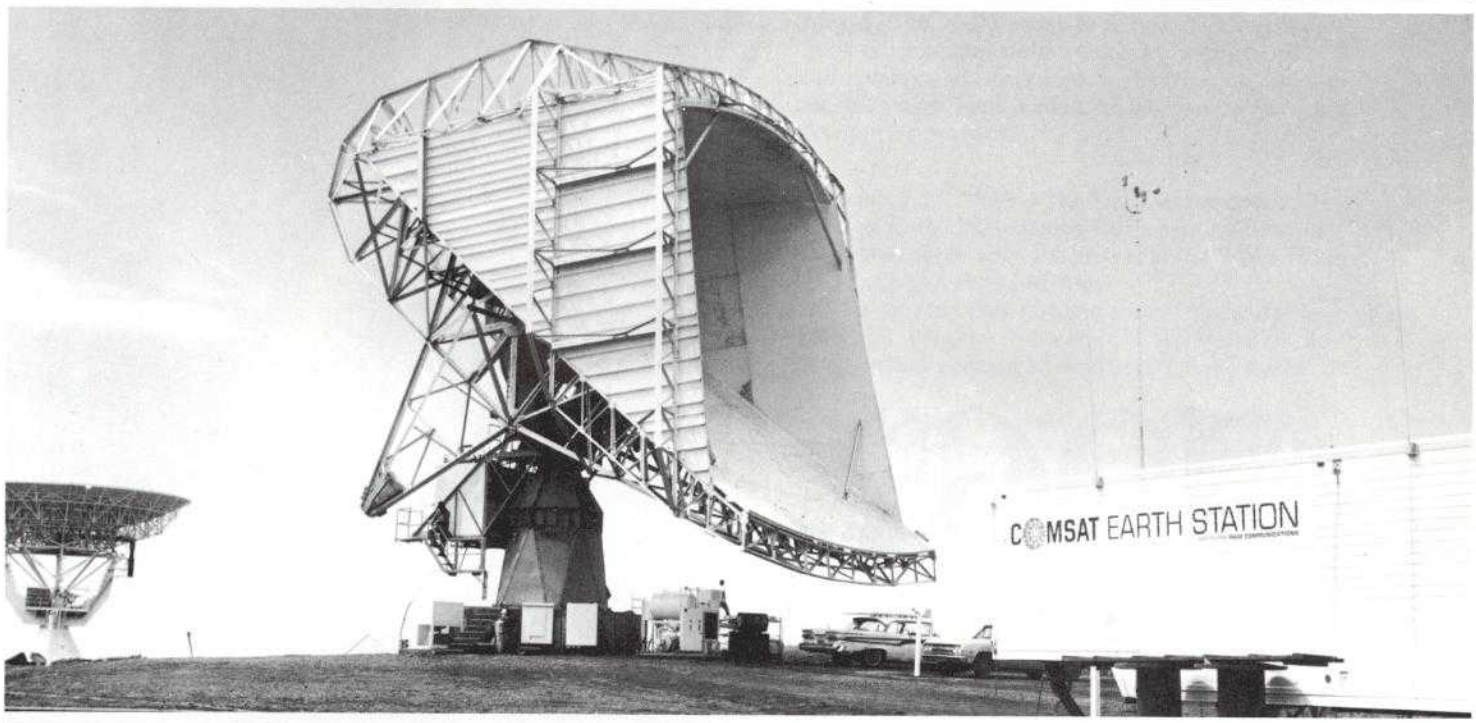
All communications equipment aboard the satellite functioned normally. From its elliptical orbit, the satellite provided limited commercial service, including live TV transmission between the U.S. Mainland and Hawaii and temporary telephone circuits between these points.

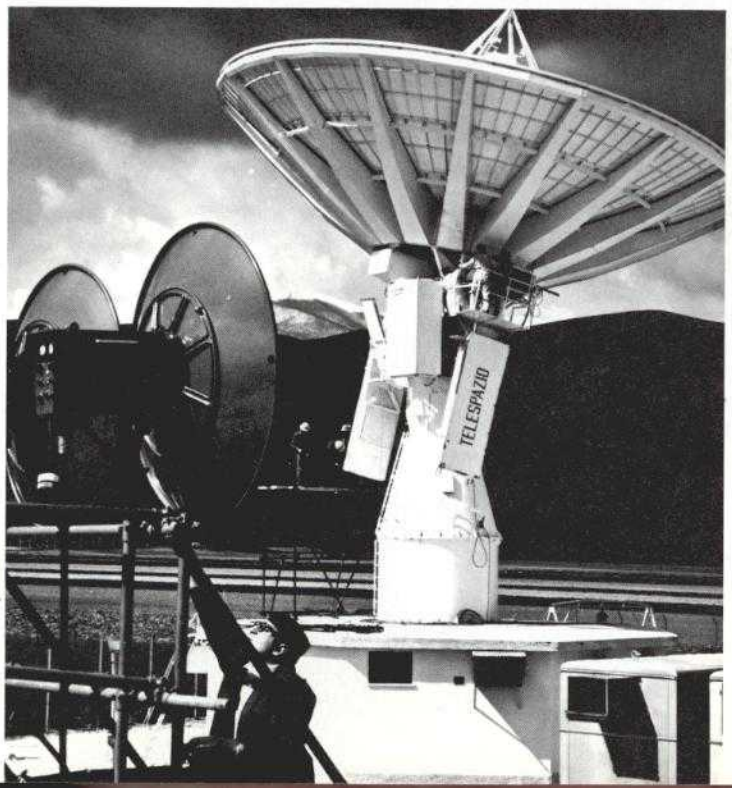
Among the commercial services provided by the satellite was television of a Notre Dame-Michigan State football game, the first live TV between the U.S. Mainland and Hawaii.

December 3, 1966—The tracking, telemetry and command station at Paumalu entered service. This was the first specialized TT&C facility in the INTELSAT system. It was followed by five similar facilities —at Fucino, Italy; Andover, Maine; Carnarvon, Australia; Tangua, Brazil; and Zamengoe, Cameroon.

December 7, 1966—The FCC authorized COMSAT to construct and operate three additional U.S. earth stations at Etam, West Virginia; Cayey, Puerto Rico; and Jamesburg, California. At the same time, the FCC reduced COMSAT's ownership interest in the U.S. stations from 100 percent to 50 percent, with the remaining 50 percent to be divided variously among other U.S. international carriers.


22,300 MILES
TOP VIEW
SIDE VIEW


COMSAT EARTH STATION


TELESPAZIO

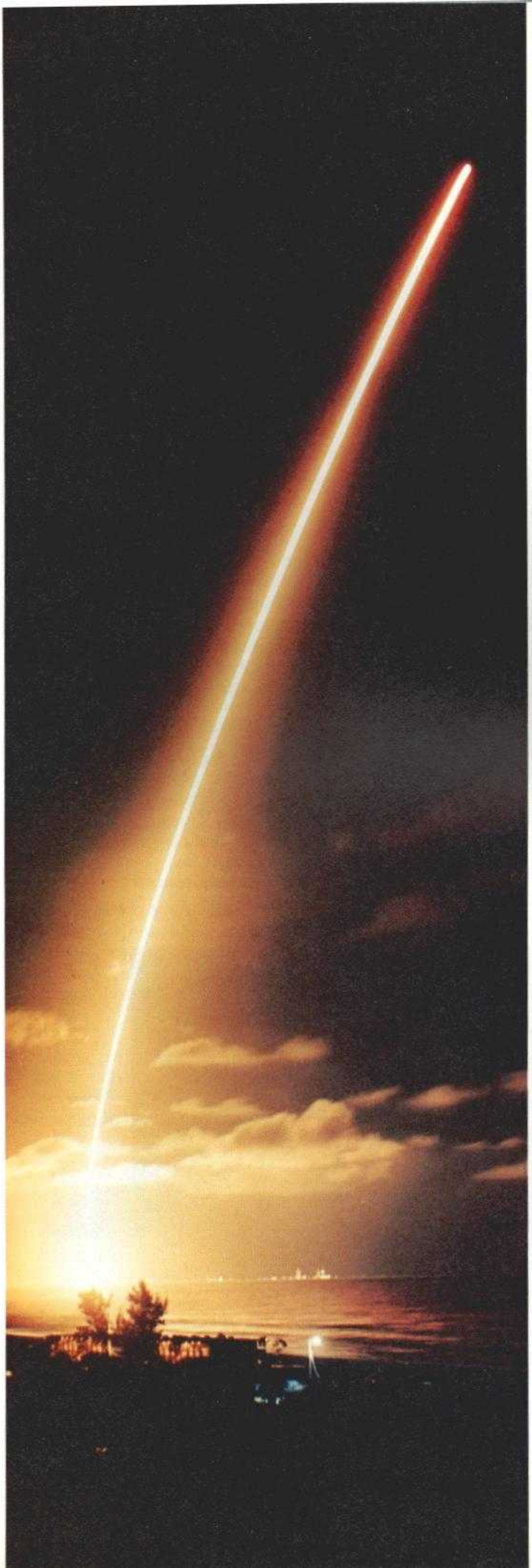
1967

January 11, 1967—The second INTELSAT II satellite was successfully launched and emplaced in synchronous orbit. It provided the first full-time satellite service over the Pacific.

January 26, 1967—Ceremonies in Washington and Tokyo inaugurating commercial satellite service between the United States and Japan were televised live between the two capitals. Those who participated included Sen. Warren G. Magnuson, Chairman of the Senate Commerce Committee; Rosel H. Hyde, Chairman of the Federal Communications Commission; Rep. Harley O. Staggers, Chairman of the House Interstate and Foreign Commerce Committee; COMSAT Chairman James McCormack in Washington; and COMSAT President Joseph V. Charyk in Tokyo.

March 22, 1967—The third INTELSAT II satellite was successfully launched, then positioned in synchronous orbit over the Atlantic Ocean.

As with all other INTELSAT missions, launch services were provided by the National Aeronautics and Space Administration to COMSAT as Manager for INTELSAT. Each of the launches took place at the Air Force's Eastern Test Range at Cape Kennedy, Florida.



April 4, 1967—COMSAT substantially reduced its rates for telephone and television service by either Early Bird or the Atlantic INTELSAT II satellite between the United States and Western Europe.

May 1, 1967—Pursuant to a Federal Communications Commission order, COMSAT commenced full commercial operations, a sign that its developmental stages were behind, and began conventional accounting practices.

September 18, 1967—The first live transoceanic telecast to the home country of a visiting head of state took place upon the arrival at the White House of President Saragat of Italy.

The telecast also was the formal inaugural television program from the United States to the new, second antenna at the Fucino, Italy, Earth Station.

In addition to President Johnson and President Saragat, those present for the event included Secretary of State Dean Rusk; Sen. John O. Pastore, Chairman of the Communications Subcommittee of the Senate Commerce Committee; and COMSAT Chairman James McCormack.

September 27, 1967—The fourth INTELSAT II satellite was successfully launched and put into Pacific service on November 4, providing a second full-time satellite in that region.

This was the third consecutive successful Series II launch following a failure of the first satellite in the series to achieve synchronous orbit.

This also was the fifth consecutive successful mission for INTELSAT by a Delta vehicle. The Deltas performed satisfactorily on the Early Bird launch and each of the Series II launches.

December 31, 1967—For the fourth quarter of the year, COMSAT realized a net operating profit for the first time. Before then, COMSAT had lost money on satellite operations, although it had realized net income because of income from temporary cash investments.

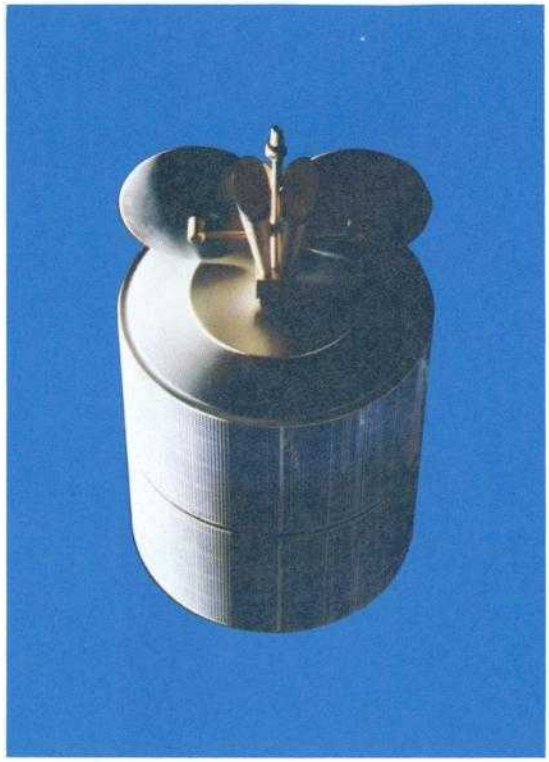
The role of communications is not limited to commercial use. It must also provide a "network for knowledge" so that all peoples can share the scientific, educational, and cultural advances of this planet. Failure to reach these goals can only contribute to apathy, ignorance, poverty and despair in a very large part of the world. Success in our telecommunications policies can be a critical link in our search for the understanding and tolerance from which peace springs. Communication by satellite is a tool—one of the most promising which mankind has had thus far—to attain this end. We must use it wisely and well.

LYNDON B. JOHNSON
April 1968

1968

September 18, 1968—The first launch attempt in the INTELSAT III series was unsuccessful. The launch vehicle was destroyed on command from the range safety officer when it veered out of control during the first stage firing.

October 18, 1968—A contract for the manufacture of the INTELSAT IV satellites was awarded to Hughes Aircraft Company, with a provision for extensive foreign participation in the subcontracts. These advanced, fourth-generation satellites were designed to provide up to five times the capacity of the INTELSAT III's and meet global system requirements through the first half of the 1970's.

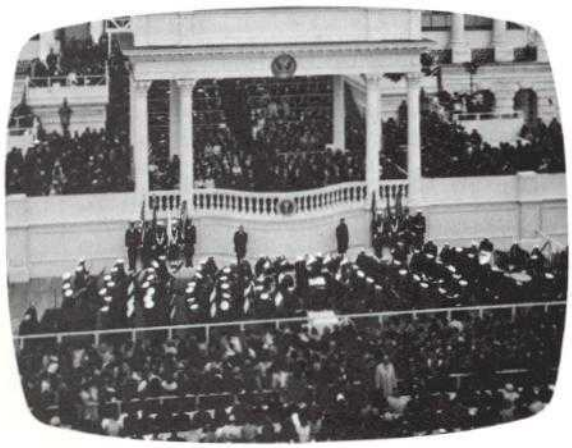


December 1, 1968—The 97-foot antenna at the Jamesburg, California, Earth Station, began commercial operation with a Pacific satellite handling all forms of overseas communications—multichannel telephone, telegraph, data, facsimile and television.

December 1, 1968—Another major step during 1968 was the completion of a second large (97-foot diameter) antenna at the Paumalu, Hawaii, station. The new antenna, together with the earlier 85-foot antenna and the 42-foot antenna for TT&C, made Paumalu the largest earth station in the world at that time.

December 18, 1968—The second INTELSAT III launch was successful, and the satellite was put into service over the Atlantic Ocean. These satellites, with five times the capacity of the INTELSAT II's were the first designed expressly for global service.

Among the expanded services provided by the satellite system during 1968 were TV coverage of the Winter and Summer Olympics, the Presidential inauguration and Project Apollo.



1969

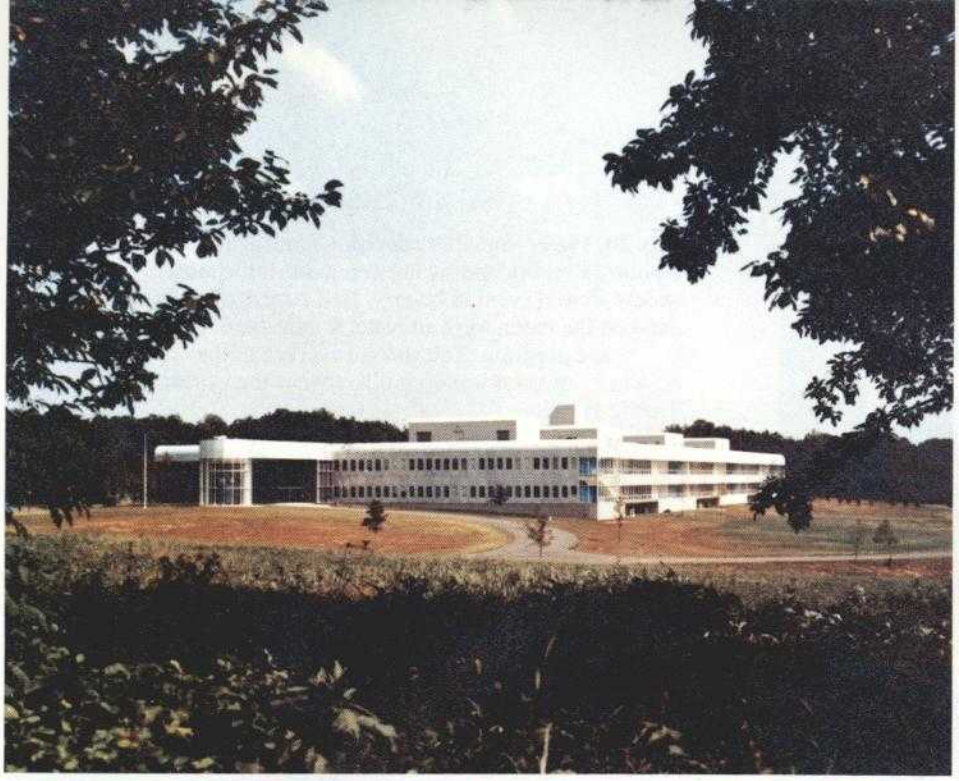
January 6, 1969—The Etam, West Virginia, Earth Station entered service. At a dedication held earlier Rep. Harley O. Staggers was the speaker. The new station was equipped with a 97-foot diameter antenna for optimum capability.

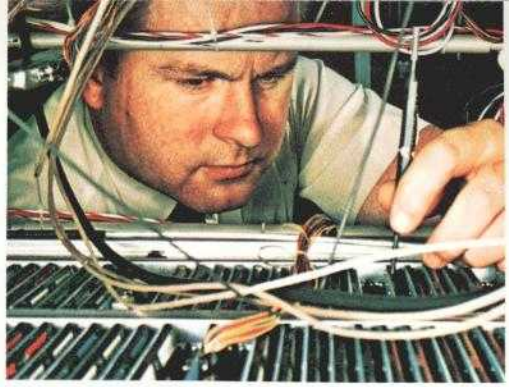
January 25, 1969—The Cayey, Puerto Rico, Earth Station entered service. At a dedication held earlier Luis Ferre, Governor of Puerto Rico, was the main speaker. He and James McCormack, COMSAT Chairman and Chief Executive Officer, cut the ceremonial ribbon.

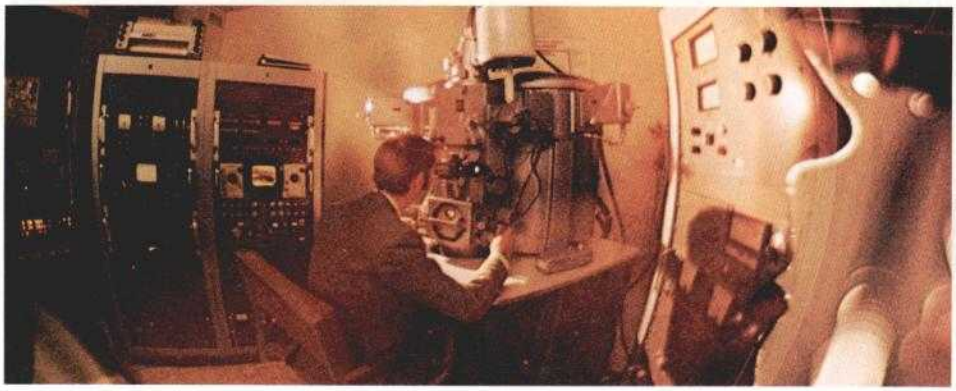
February 5, 1969—The third INTELSAT III satellite was successfully launched, positioned in synchronous orbit and placed in commercial service over the Pacific Ocean on February 16.

Five more III's were launched later in 1969 and in 1970. Of the eight satellites launched in the INTELSAT III series, five were placed in regular service, one failed to achieve transfer orbit due to a launch vehicle malfunction, and two failed to achieve synchronous orbit due to a malfunction during apogee motor firing.

The launch vehicle used for the INTELSAT III was the Long Tank Delta, an improved version, with a greater payload capability, of the vehicle used for Early Bird and the INTELSAT II satellites.







February 24, 1969—The International Conference on Definitive Arrangements for INTELSAT convened in Washington, D. C., then adjourned on March 21 while its work was carried forward by a preparatory committee. The international conference was attended by representatives of virtually all of the 68 nations then in INTELSAT plus observers from several other nations.

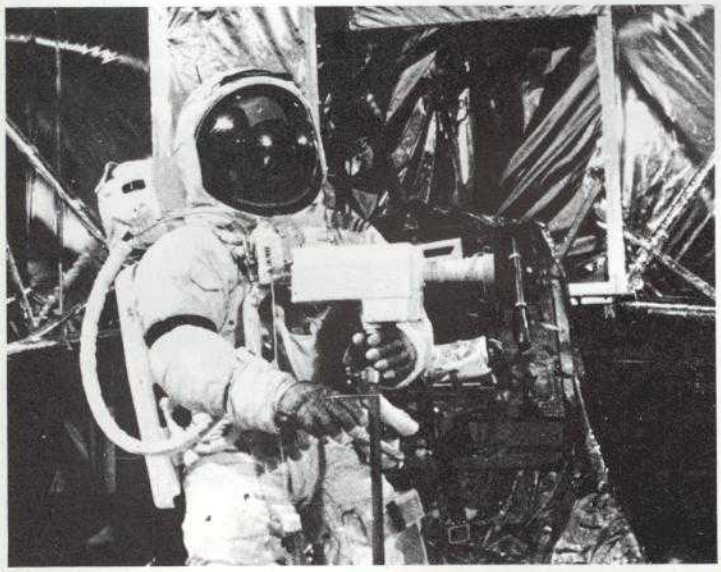
July 1, 1969—Full global coverage was established when an INTELSAT III satellite over the Indian Ocean began commercial service. This was the first satellite service in the Indian Ocean region.

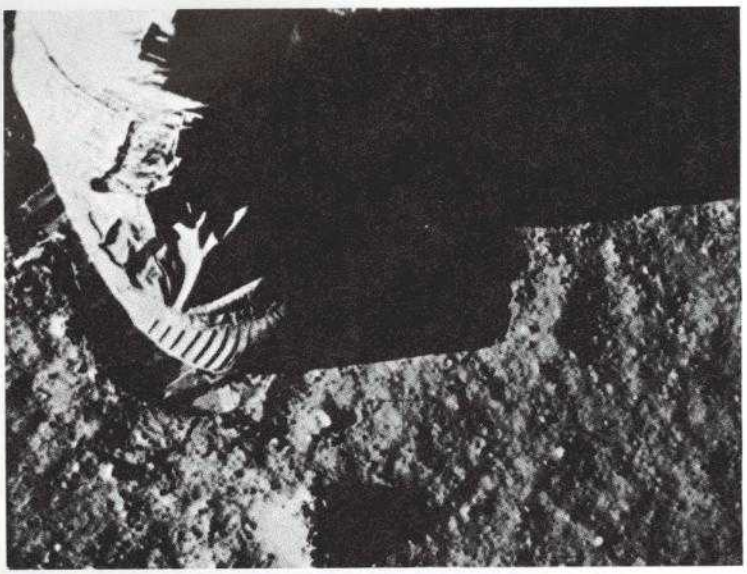
The Indian Ocean satellite was the INTELSAT III, F-3, which had been launched for Pacific service on February 5, 1969. It was repositioned over the Indian Ocean after the III, F-4 began Pacific service.

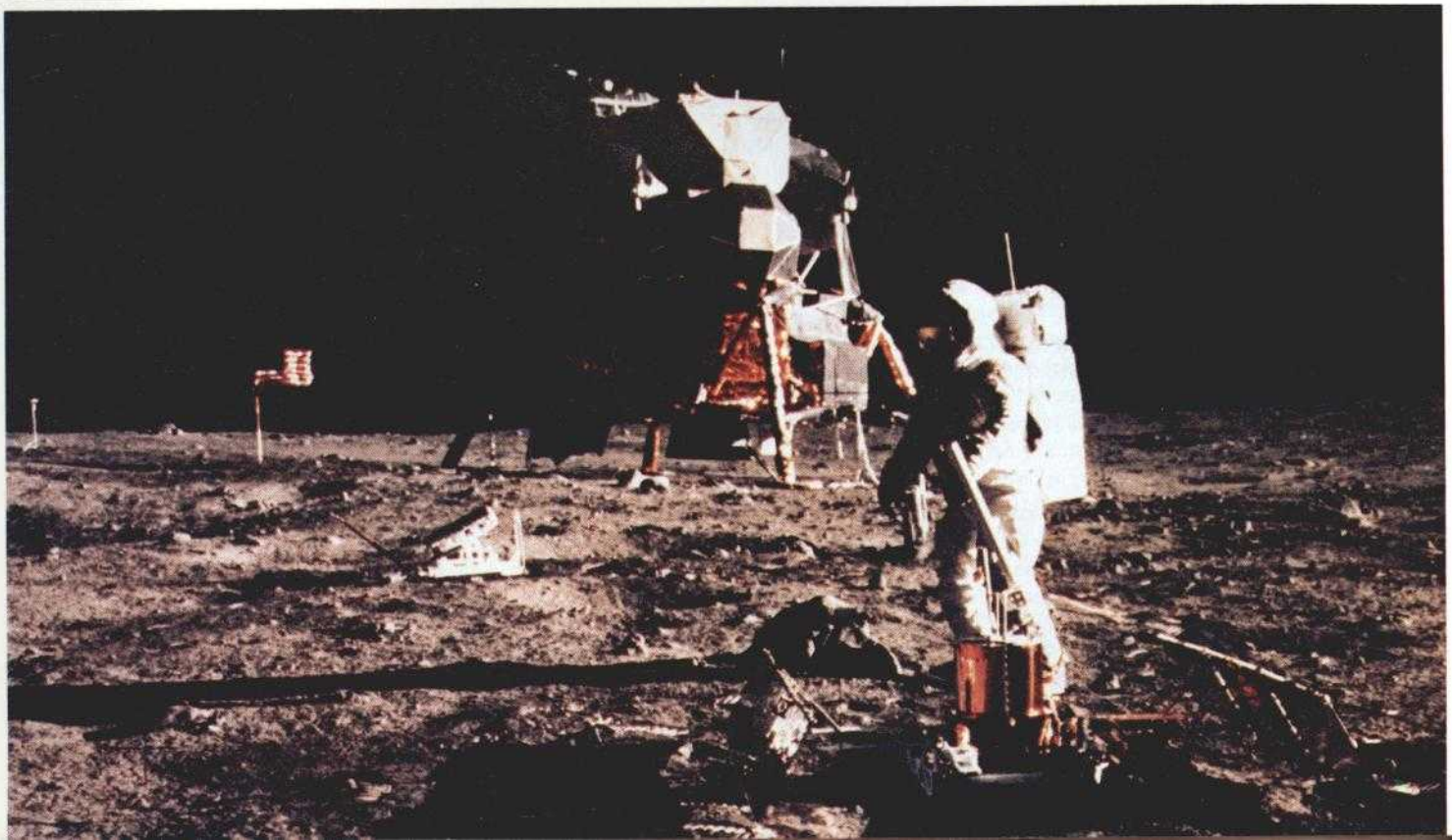
September 8, 1969—The COMSAT Laboratories at Clarksburg, Maryland, were completed and occupied by a staff of about 300 persons, half of them professional scientists and engineers. At the Laboratories, COMSAT is engaged in a broad range of research and development projects to advance the technology of satellite communications.

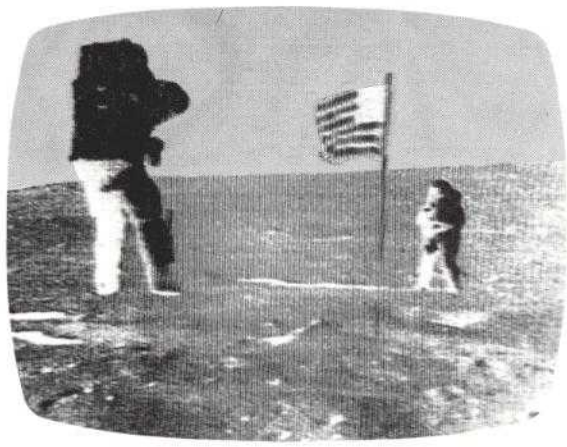
July 20, 1969—Satellite television coverage of the Apollo 11 moon-landing mission made it the most widely viewed event in history. Neil Armstrong's first steps on the moon were an historic milestone in the U.S. space program. Television coverage of the Apollo 11 mission was seen throughout the world, live via satellite.

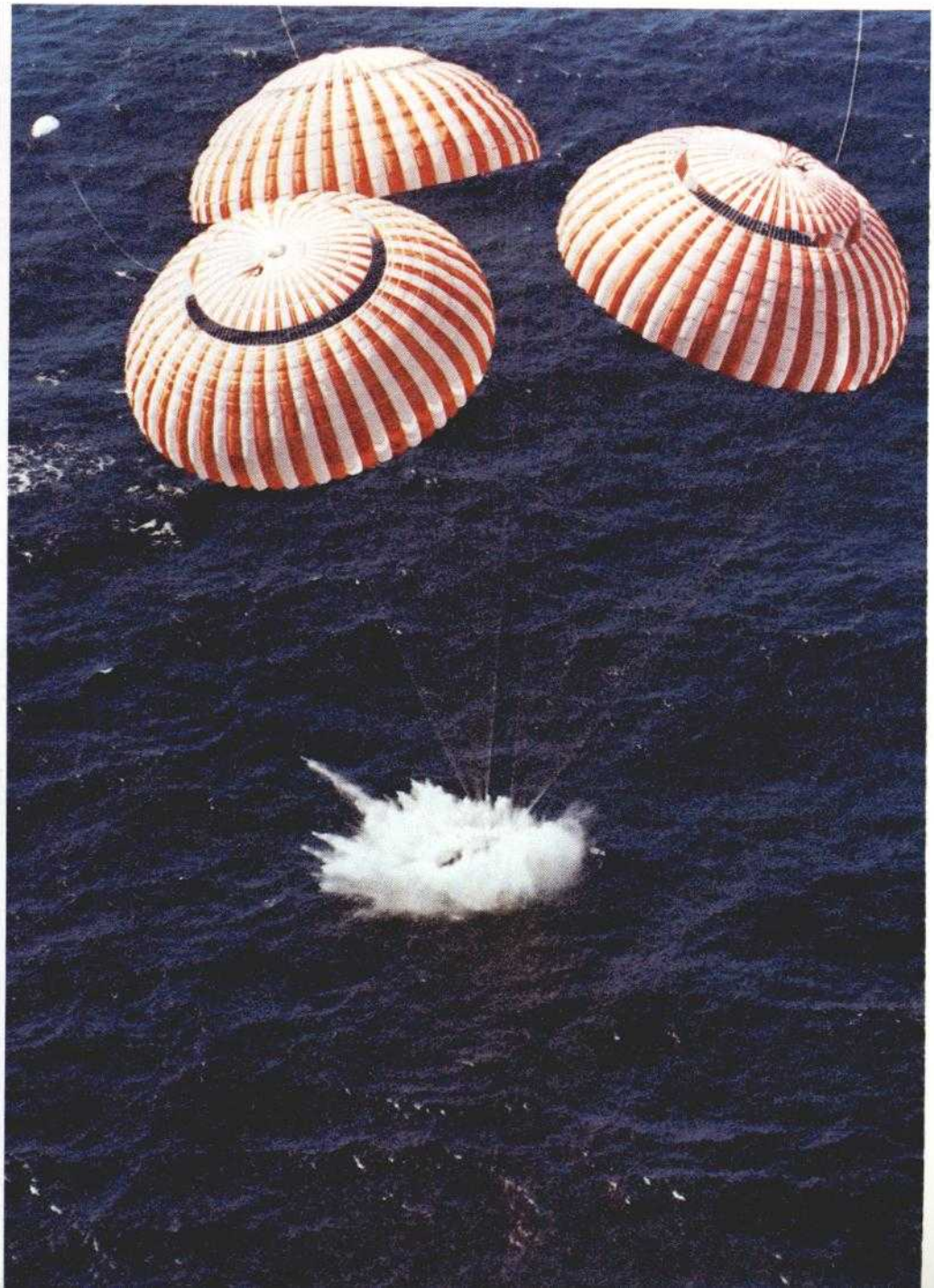
In addition, the satellite system provided vital communications support services to the National Aeronautics and Space Administration throughout the Apollo program.











On July 20, 1969, from the Oval Office in the White House, I spoke by telephone with Neil Armstrong and Edwin Aldrin on the surface of the Moon. This historic event was simultaneously televised to the world through the medium of communications satellites . . . The Communications Satellite Act speaks of the contribution to be made to "world peace and understanding" by a commercial communications satellite system. Just as this technology has enabled men to speak to each other across the boundary of outer space, so, I am convinced, satellite communications will in future years help men to understand one another better across boundaries of political, linguistic and social nature. World peace and understanding are goals worthy of this new and exciting means of communication.

RICHARD NIXON
February 1970

1970

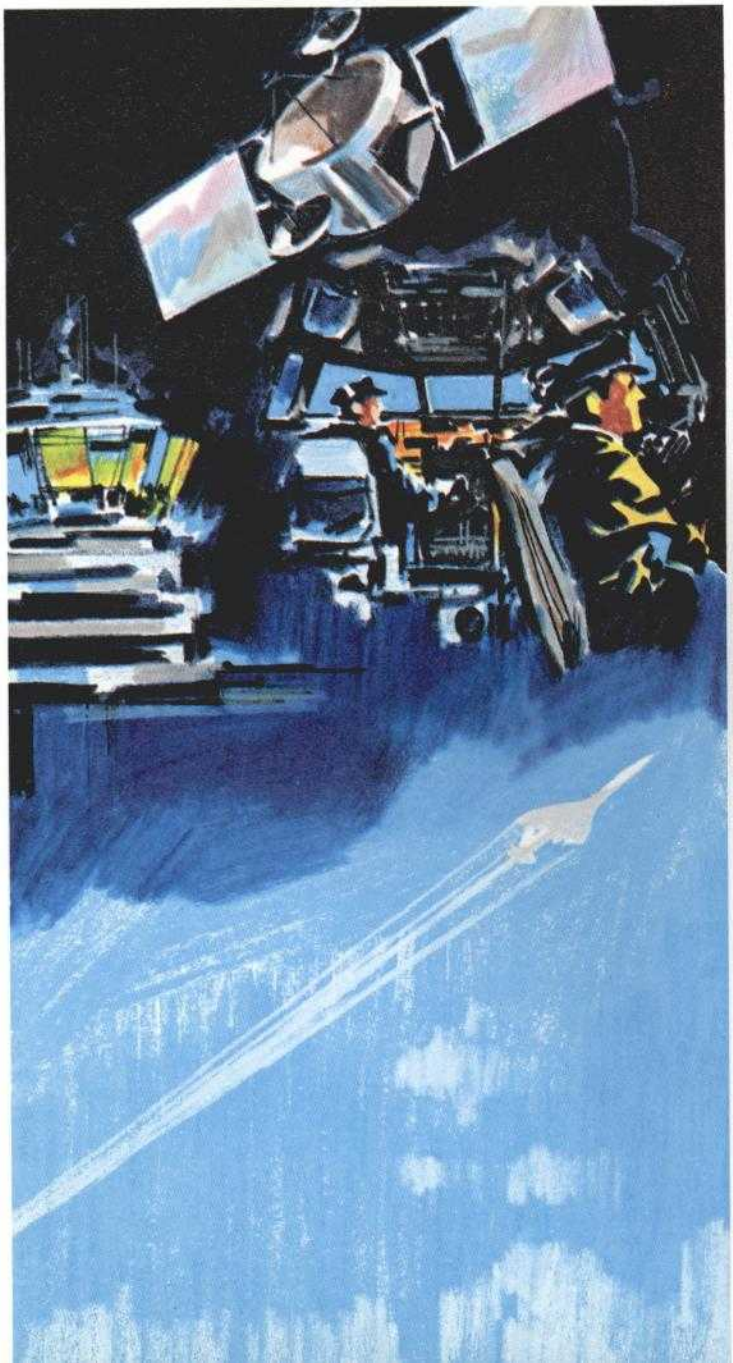
May 12, 1970—COMSAT submitted another in a series of proposals for a satellite system to provide aeronautical communications service to the Federal Aviation Administration and the airline industry.

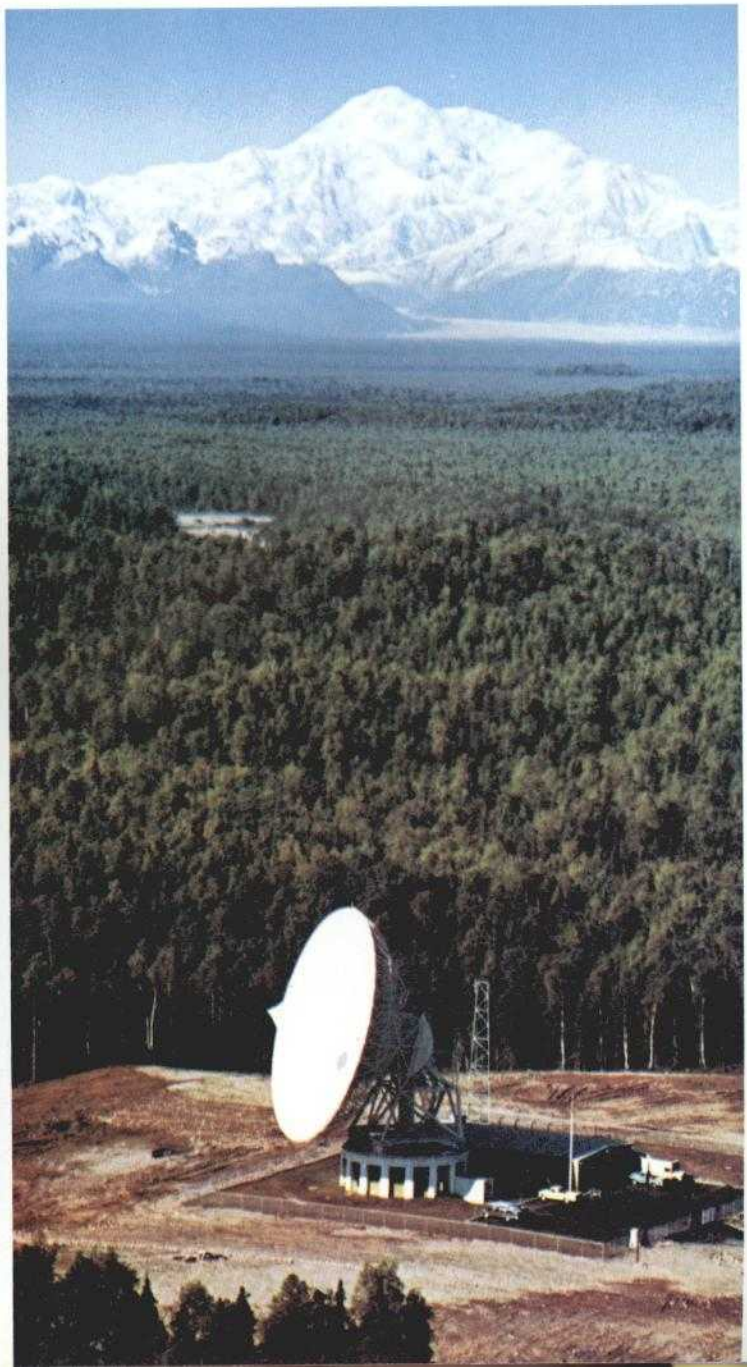
June 21, 1970—The World Cup soccer matches in Mexico City ended after three weeks of play during which the satellite system transmitted more than 500 half-channel hours to a worldwide audience. This service illustrated the worldwide demand for live coverage of major sports events, a demand which the satellite system is meeting with hundreds of TV transmissions a year.

July 1, 1970—Commercial service was begun at the new Bartlett Earth Station at Talkeetna, Alaska. The Bartlett station, with a 98-foot antenna, was one of the fourth generation of earth stations. Each generation was characterized by better performance, wider bandwidth, lower cost and simpler operation and maintenance.

October 16, 1970—Increases in revenues, net operating income and net income permitted the Board of Directors to declare COMSAT's first quarterly dividend of 12½ cents per share. The quarterly rate was increased to 14 cents in 1972, 17 cents in 1973, 20 cents in January 1974, 25 cents in July 1974 and 35 cents in October 1977.

October 19, 1970—In another proposal to the FCC, COMSAT applied for authority to establish a domestic satellite system to provide leased capacity to American Telephone and Telegraph Company and followed, in 1971, with an application for a separate COMSAT multipurpose system to serve users other than AT&T.





1971

January 25, 1971—Global satellite capability was greatly expanded with the first launch of an INTELSAT IV satellite, which was placed in service over the Atlantic Ocean on March 26.

In an average communications configuration, each of the IV's provides about 4,000 telephone circuits plus capacity for simultaneous television.

Like their predecessors in the INTELSAT system the IV's are in synchronous equatorial orbit. The launch vehicle for the IV's was the Atlas-Centaur, a larger, higher-capacity vehicle than those of the Delta series used in all previous INTELSAT launches.

August 6, 1971—NICATELSAT, a joint venture with the Government of Nicaragua, was established to build and operate an earth station and to handle Nicaragua's overseas international communications. The standard earth station near Managua, Nicaragua, was completed at the end of 1972 and put into commercial service. COMSAT GENERAL owns 49 percent of NICATELSAT and provides technical, training and operational services under contract to NICATELSAT.

August 20, 1971—The agreements for definitive arrangements for INTELSAT were opened for signature. The U.S. was among the first to sign.

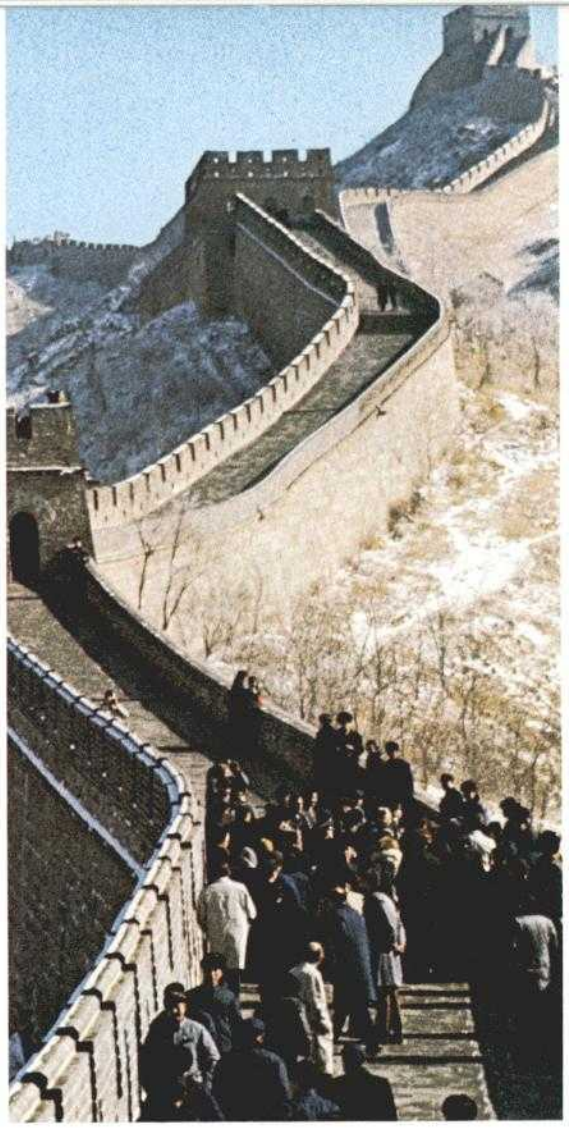
The arrangements were to enter into force 60 days after the agreement had been adhered to by two-thirds (54) of the 80 governments which were parties to the interim agreement as of August 20, 1971.

On behalf of the U.S., Joseph V. Charyk, COMSAT President, and William P. Rogers, Secretary of State, signed the definitive agreements at the Department of State.

December 19, 1971—The second INTELSAT IV was launched successfully and placed in service over the Atlantic Ocean on February 19. This satellite and the first Atlantic IV provided a combined capacity of about 10,000 telephone circuits across the Atlantic. They replaced the INTELSAT III satellites in that region.

Among the service highlights of 1971 was the dedication on December 3, 1971, of the Scandinavian earth station at Tanum, Sweden. The dedication included the first transatlantic picture telephone transmission. Via satellite two grandparents in Sweden saw their grandchild in the United States (at COMSAT for the occasion) for the first time. Dr. Joseph V. Charyk also spoke to dignitaries at the Scandinavian earth station via picturephone.

1972



In the relatively short span of seven years, communication by satellite has changed the world forever. We now live, in one very real sense, much closer to other peoples and to faraway events. The fast-developing science of satellite communications must rate as one of the true marvels of the 20th century—a technological triumph that is bringing greater understanding to a world badly in need of closer ties and deeper insights . . . I am certain that the Congress will share my fascination and satisfaction with the speed in which participation in satellite communications is spreading across the world as a new and constructive force among nations and peoples.

RICHARD NIXON
April 1972

February 20, 1972—President Richard Nixon arrived in Peking for his historic visit to the People's Republic of China. The satellite communications coverage of the President's visit included television, news photo and news dispatch transmissions. These were transmitted from temporary antennas installed in Peking and Shanghai to an INTELSAT IV satellite over the Pacific Ocean and thence to the Jamesburg, California, Earth Station for distribution in the United States and relay to other countries.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January 15, 1972—A new standard antenna went into service at the Andover, Maine, Earth Station, replacing the 10-year-old radome-covered horn antenna that had been built for Telstar experiments and later modified for commercial service. Similar second antennas were planned for Andover and Etam, West Virginia, to increase capability for U.S. transatlantic satellite communications.

January 22, 1972—The third launch in the INTELSAT IV series resulted in the emplacement of one of these advanced, high-capacity satellites over the Pacific Ocean.

March 1, 1972—Hearings began in the COMSAT rate case before the Federal Communications Commission, following the submission of voluminous COMSAT testimony.

May 15, 1972—COMSAT and the Cunard Line completed a two-month experiment which successfully demonstrated satellite communications between ship and shore. COMSAT installed a small antenna and associated equipment on the top deck of the liner Queen Elizabeth 2. Through an INTELSAT IV satellite over the Atlantic Ocean, voice and data communications were transmitted between the Queen Elizabeth 2 at sea and COMSAT Laboratories at Clarksburg, Maryland.

May 22, 1972—President Richard Nixon arrived in Moscow for the first visit by an American President to the Soviet Union. As with the President's visit to China, the satellite system transmitted television coverage of the visit to a worldwide audience.

On the China visit, the TV programming entered the satellite system via transportable antennas almost at the point of origin. On the Russian visit, the programming was relayed almost 2,000 miles via terrestrial facilities to the West German earth station at Raisting before entering the satellite system.

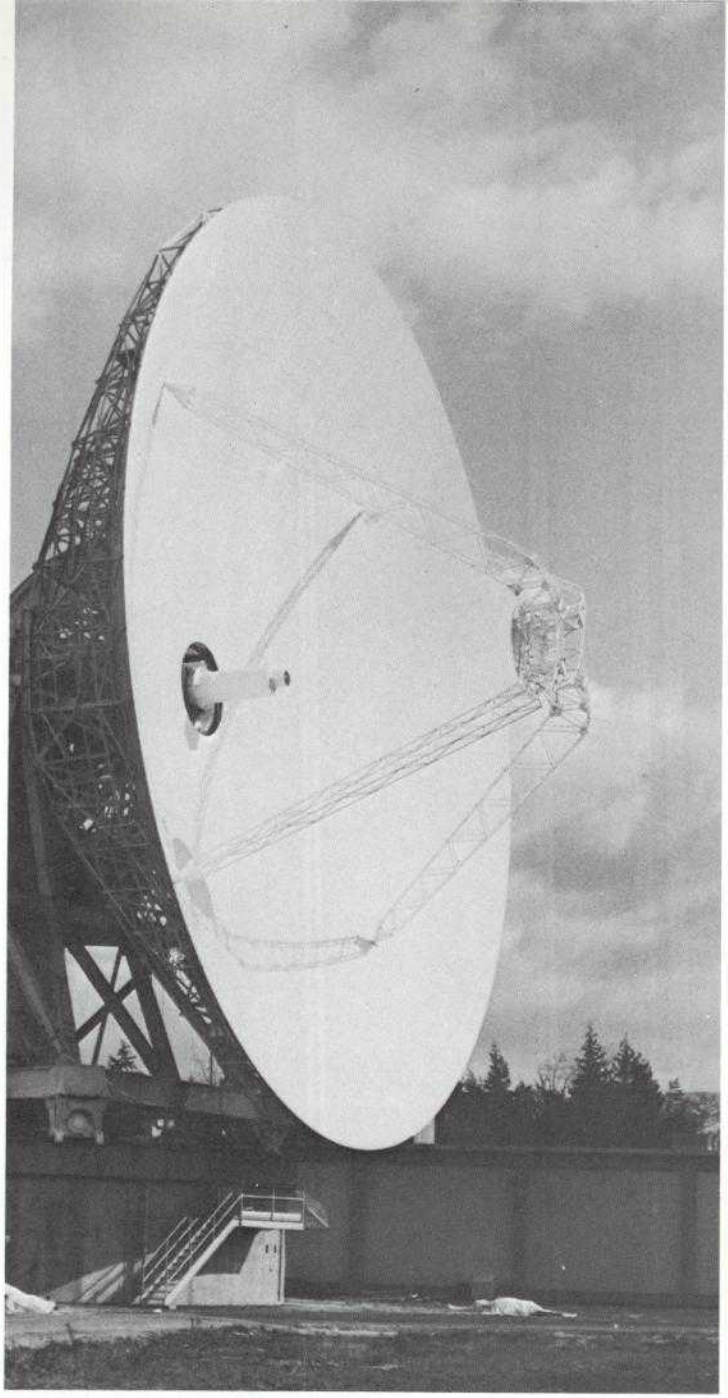
June 13, 1972—The fourth launch in the INTELSAT IV series was successful, just as the first three had been. The satellite was placed in service over the Indian Ocean, completing global coverage by the IV's.

September 8, 1972—COMSAT made a new proposal for U.S. domestic services as the Federal Communications Commission proceeding for the authorization of domestic systems continued. COMSAT requested the FCC to authorize COMSAT's participation in two domestic systems—(1) a system of satellites for lease to American Telephone and Telegraph Company as proposed earlier by COMSAT, and (2) a multipurpose system for nationwide services to be jointly owned by COMSAT, Lockheed Aircraft Corporation and MCI Communications Corporation.

September 10, 1972—Satellite television coverage of the 20th Olympic Games in Munich, Germany, in late August and early September set a record for such coverage of a special event. All four INTELSAT IV satellites were used in transmitting 1,023 half-channel hours of TV coverage to earth stations in 33 countries. The countries ordering the greatest volume of coverage were Mexico, the United States and Iran, in that order.

December 12, 1972—With ratification by Jamaica, the number of nations approving the INTELSAT definitive arrangements increased to 54, the number necessary for the arrangements to enter into force 60 days thereafter.

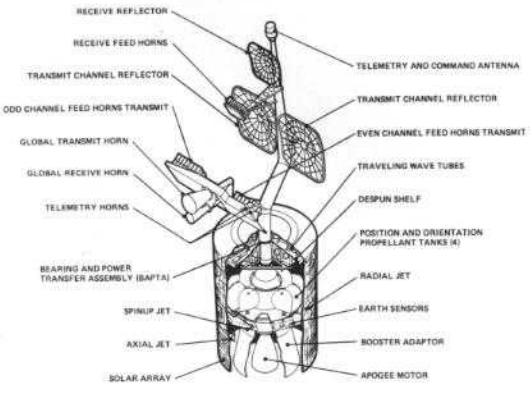
December 22, 1972—In a major policy decision, the FCC approved COMSAT's proposed domestic systems—a system of COMSAT satellites for lease to American Telephone and Telegraph Company and a separate, multipurpose domestic satellite system to be established through a joint venture of COMSAT, Lockheed Aircraft Corporation and MCI Communications Corporation.




COMSAT

1973

COMPONENT ARRANGEMENT OF THE INTELSAT IV–A

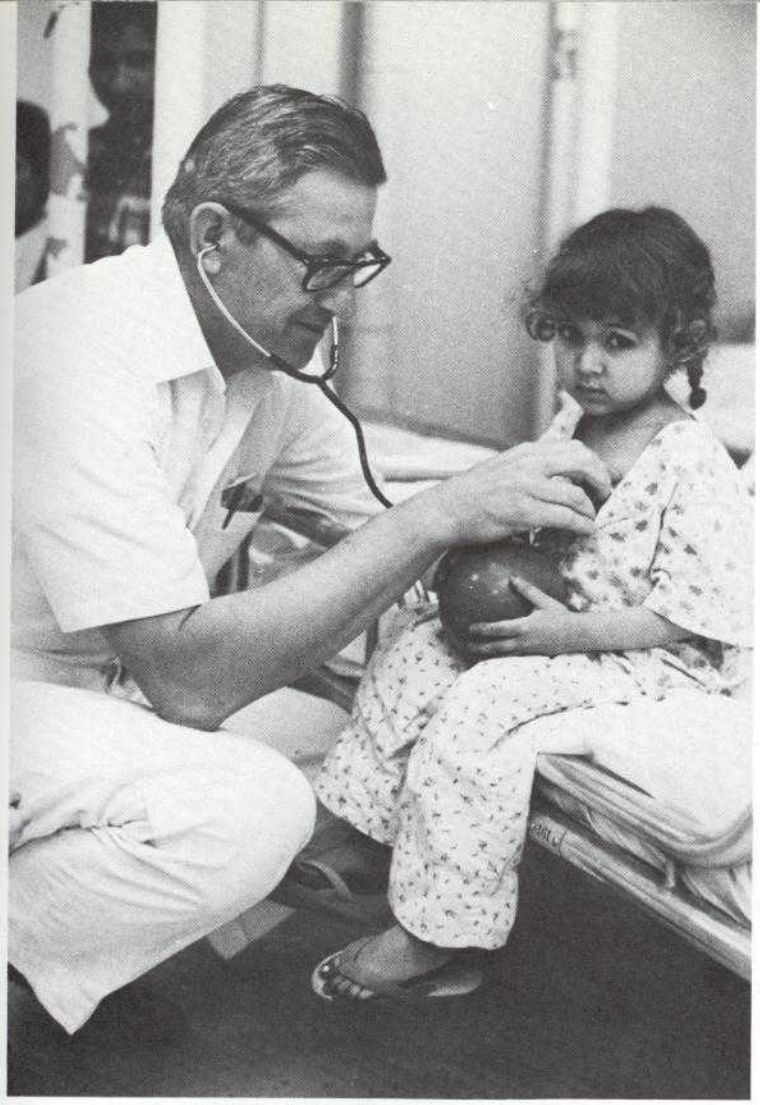


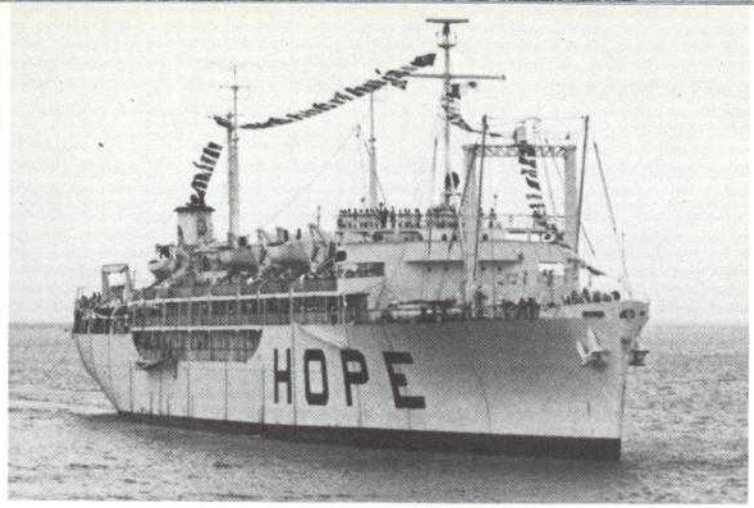
January 9, 1973—COMSAT General Corporation was established as a wholly owned subsidiary to carry out those programs and activities of COMSAT not related to the global system.

Subsequently COMSAT GENERAL joined with MCI Communications Corporation and Lockheed Aircraft Corporation to form CML Satellite Corporation to provide U.S. domestic communications satellite services to customers other than AT&T.

February 1, 1973—COMSAT Laboratories installed an eight-foot diameter antenna aboard the hospital ship S.S. Hope to demonstrate the feasibility of using satellites for high quality communications with vessels operating in remote regions. When the ship was anchored in port at Maceio, Brazil, the small antenna was used to exchange diagnostic data via satellite with the Medical Center of the National Institutes of Health in Bethesda, Maryland.

In March COMSAT installed a 15-foot diameter antenna on the lawn of the Sheraton Park Hotel in Washington, D.C. during the annual meeting of the National Association of Broadcasters to give the first public demonstration of the digital transmission of television via satellite.

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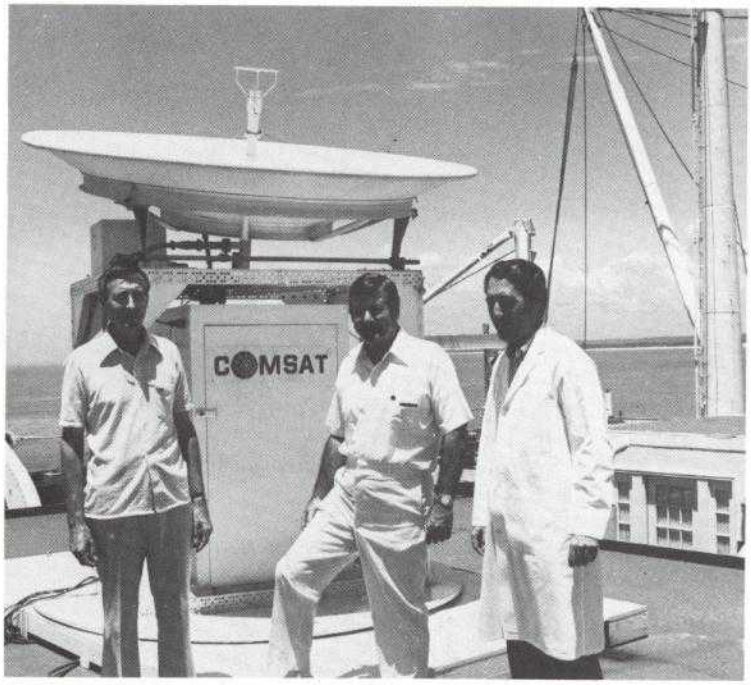

COMSAT


MEETING OF
INTELSAT
SIGNATORIES

February 12, 1973—The definitive arrangements for INTELSAT entered into force, superseding the interim arrangements of 1964 which established INTELSAT as a consortium of countries. Under the new agreements, INTELSAT, the International Telecommunications Satellite Organization, assumed legal personality and ownership of the satellites of the global system and related ground control facilities.

Today, COMSAT continues to represent the U.S. in INTELSAT and to hold the largest investment share; COMSAT also is providing technical and operational services to INTELSAT under a Management Services Contract which extends through February 11, 1979.

The INTELSAT organization includes an Executive Organ, headed by a Director General, responsible to a Board of Governors. INTELSAT has an Assembly of Parties (composed of representatives of all member governments), and a Meeting of Signatories (composed of representatives of the governments or their designated telecommunications entities). Representation in the Board of Governors is based on a member's investment share in INTELSAT which, in turn, is determined by its percentage of the total use of the global system. Representation in the Assembly of Parties and the Meeting of Signatories is on a one-country, one-vote basis.

March 1, 1973—The U.S. Navy awarded a contract to COMSAT GENERAL for maritime satellite communications services in the Atlantic and Pacific Ocean regions through the proposed "MARISAT System." Although the contract provided for two years of service to the Navy, it gave the Navy the option to extend the period of service.

On May 23, COMSAT GENERAL awarded a contract to Hughes Aircraft Company for the manufacture of three multifrequency satellites, each with a design life of five years, to serve the Navy and the commercial shipping and offshore industries.

Early in 1976, the MARISAT System became a joint venture of COMSAT GENERAL, RCA Global Communications, Inc., Western Union International, Inc., and ITT World Communications Inc. COMSAT GENERAL holds an 86.29 percent interest in the joint venture and manages the MARISAT System.

April 27, 1973—A contract was awarded to Hughes Aircraft Company for the construction of three 6,000-circuit INTELSAT IV-A satellites to be delivered beginning in 1975. (Later the number of satellites ordered was increased to six.) Designed to meet the traffic requirements of the global system in the latter half of the 1970's, each INTELSAT IV-A satellite would have a communications capacity about two-thirds greater than an INTELSAT IV.

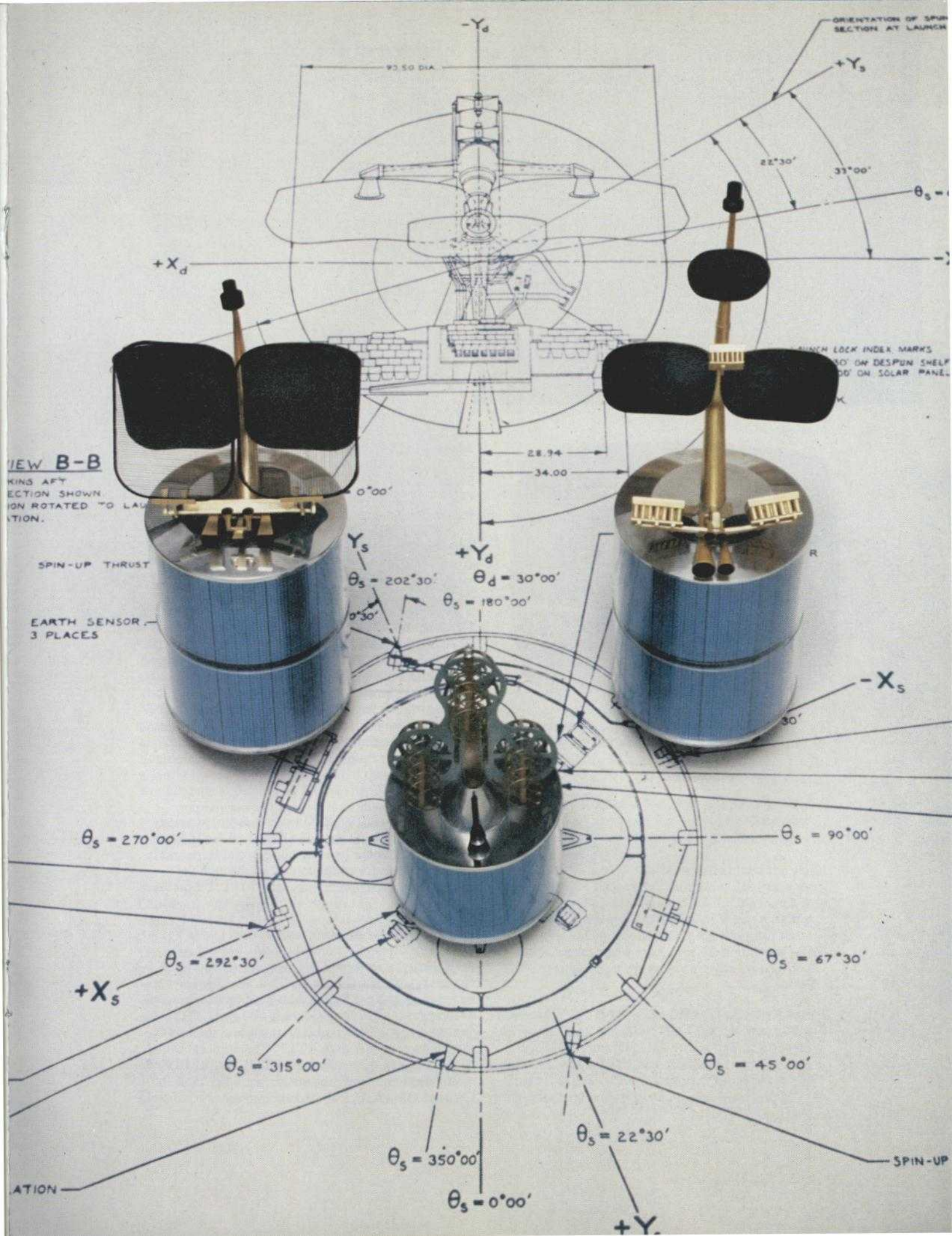
August 23, 1973—The fifth INTELSAT IV satellite was launched and placed in service on November 21 as a Major Path satellite in the Atlantic Ocean region. A Major Path satellite connects those earth stations carrying a large volume of communications. Another INTELSAT IV satellite, serving as the Atlantic Primary Path satellite, connects all earth stations of the global system in the region.

September 14, 1973—COMSAT GENERAL awarded a contract to Hughes Aircraft Company for the construction of four COMSTAR satellites whose capacity COMSAT GENERAL had agreed to lease to AT&T for U.S. domestic communications. Three of the satellites were to be used in orbit and the fourth as an on-the-ground spare. The COMSTAR satellites would incorporate an advanced technique, known as cross-polarization, which would significantly enlarge their communications capacity. They would also carry powerful beacons to conduct experiments in the 19 and 28 gigahertz frequencies for use in communications systems of the future.

November 28, 1973—COMSAT GENERAL awarded a contract to Philco-Ford Corporation for the construction of earth stations at Southbury, Connecticut, and Santa Paula, California. Each station would have a 42-foot and a 34-foot diameter antenna to provide MARISAT communications services and tracking, telemetry and command services in support of both the MARISAT and COMSTAR satellites.

December 19, 1973—In connection with the transfer from the global system to a domestic satellite system of the communications satellite traffic between Alaska and the contiguous 48 states, COMSAT sold its Bartlett Earth Station in Alaska to RCA Alaska Communications, Inc. The Bartlett station had been serving Alaska through the INTELSAT system since July 1970. The FCC had provided for the transfer of contiguous 48 states–other U.S. points satellite traffic to domestic satellite facilities in a 1972 policy decision.

Pursuant to the FCC policy decision, satellite traffic between the mainland and Hawaii subsequently would be transferred from the global system and, in anticipation of a similar transfer of mainland–Puerto Rico traffic, COMSAT would agree to sell its 50 percent ownership interest in the Cayey, Puerto Rico, Earth Station to All America Cables & Radio, Inc., a subsidiary of ITT.



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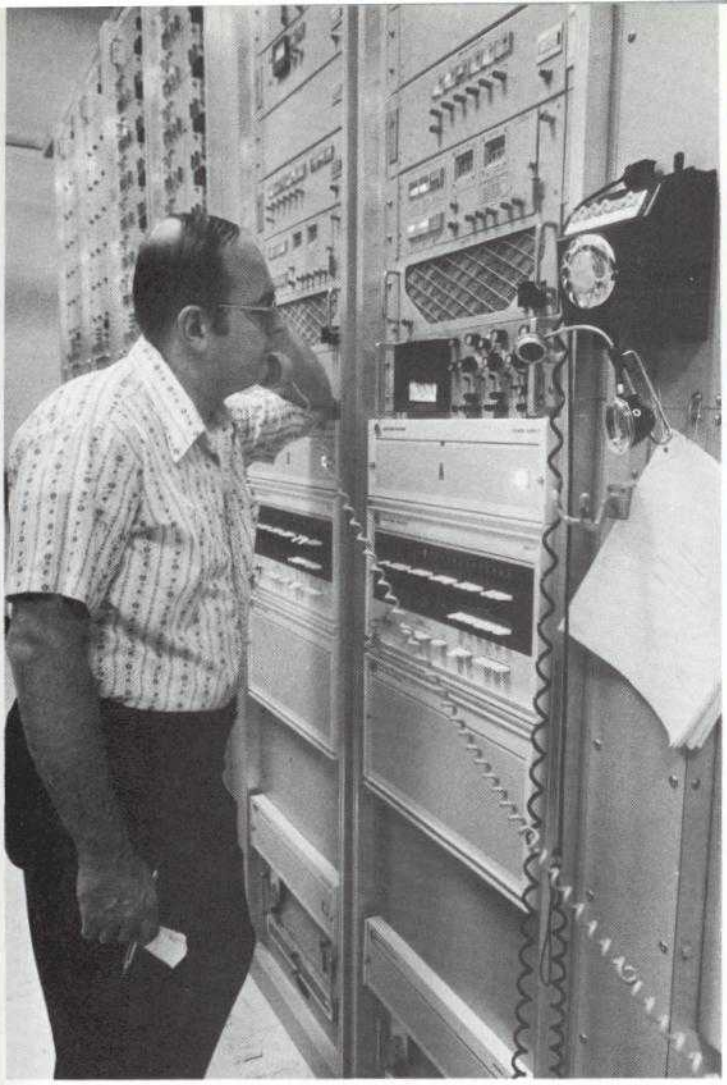
1974

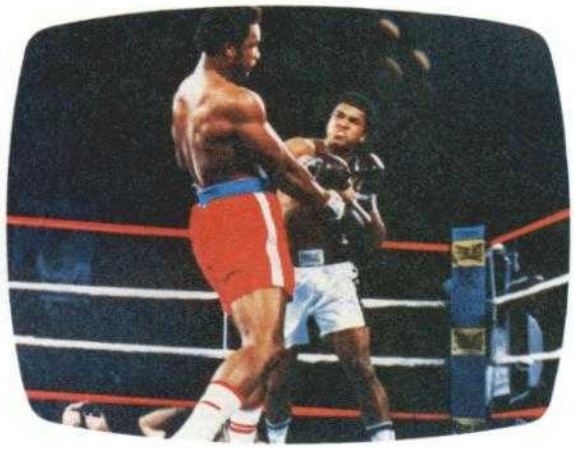
January 21, 1974—COMSAT introduced a new digital, demand-assigned satellite service, known as SPADE, for voice communications in the Atlantic Ocean region. SPADE made satellite service available for the first time on an "as-needed" rather than on a preassigned basis. A country could now "call-up" another when desired without establishing a full-time circuit. SPADE was also the first international digital voice communications service.

February 15, 1974—COMSAT significantly reduced its charges for U.S. mainland–Hawaii service through the Pacific Ocean INTELSAT satellite by leasing the capacity of an entire transponder to its customers for this service rather than continuing to provide it on a per-circuit basis. The lower charges for transponder service enabled COMSAT to retain the mainland-Hawaii traffic in the global system until July 1976 when this traffic was transferred to a domestic satellite.

May 30, 1974—COMSAT GENERAL awarded a contract to Scientific Atlanta, Inc. for small (four-foot diameter) antennas to equip commercial ships and offshore vessels for communications through the MARISAT satellites.

July 15, 1974—Following withdrawals by MCI Communications Corporation and Lockheed Aircraft Corporation from CML Satellite Corporation, COMSAT, COMSAT GENERAL, CML and IBM Corporation filed with the FCC a joint petition for approval to restructure CML as a COMSAT GENERAL/IBM venture to establish a domestic satellite system serving customers other than AT&T. The proposal called for a change in the ownership of CML so that IBM would have a 55 percent interest in CML and COMSAT GENERAL, a 45 percent interest.





August 2, 1974—The Federal Aviation Administration (FAA), the European Space Agency (ESA) and the Government of Canada entered into a Memorandum of Understanding to undertake a program, known as AEROSAT, for the purpose of testing and evaluating the use of satellites for communications with aircraft flying the heavily-traveled transatlantic routes. It was contemplated that the FAA would obain aeronautical satellite capacity from a U.S. company participating in a joint venture with ESA and the Government of Canada to provide the space segment for the AEROSAT program.

September 5, 1974—In a stiff competition, COMSAT GENERAL was selected by the European Space Agency (ESA) and the Government of Canada as the U.S. company to participate with ESA and the Government of Canada in providing the space segment for the AEROSAT program. COMSAT GENERAL and ESA were each to have a 47 percent ownership interest in the space segment and the Government of Canada, a six percent interest.

October 10, 1974—COMSAT GENERAL acquired a 40 percent ownership interest in Intercontinental de Comunicaciones por Satelite, S.A. (INTERCOMSA), a Panamanian corporation which owns the earth station for satellite communications at Utibe near Panama City.

November 21, 1974—The sixth INTELSAT IV satellite was launched and placed in service on December 15 as the full-time communications satellite in the Pacific Ocean region.

Among the major events carried around the world on television by the global satellite system were the George Foreman-Muhammad Ali boxing match from Kinshasa, Zaire, and the victory of West Germany in the World Cup Soccer finals. Coverage of the World Cup set a new record for the amount of satellite transmission generated by a single event.

December 24, 1974—The INTELSAT Direct Communications Link (satellite "Hot Line") between Moscow and Washington, D.C. was activated using an Atlantic region INTELSAT satellite to connect the COMSAT-operated earth station at Etam, West Virginia, and an earth station near Moscow.

1975

February 10, 1975—The FCC rejected the joint petition of COMSAT, COMSAT GENERAL, CML Satellite Corporation and IBM Corporation for the restructuring of CML as filed on July 15, 1974, but concluded that COMSAT GENERAL and IBM were not disqualified as domestic satellite applicants and offered several alternatives for their entry into the domestic satellite field. One alternative, the so-called "balanced CML" option, contemplated the restructuring of CML to include COMSAT GENERAL, IBM and at least one other participant with a minimum interest of 10 percent, subject to certain conditions specified by the FCC. COMSAT GENERAL and IBM advised the FCC that they would seek to proceed under the balanced CML option.

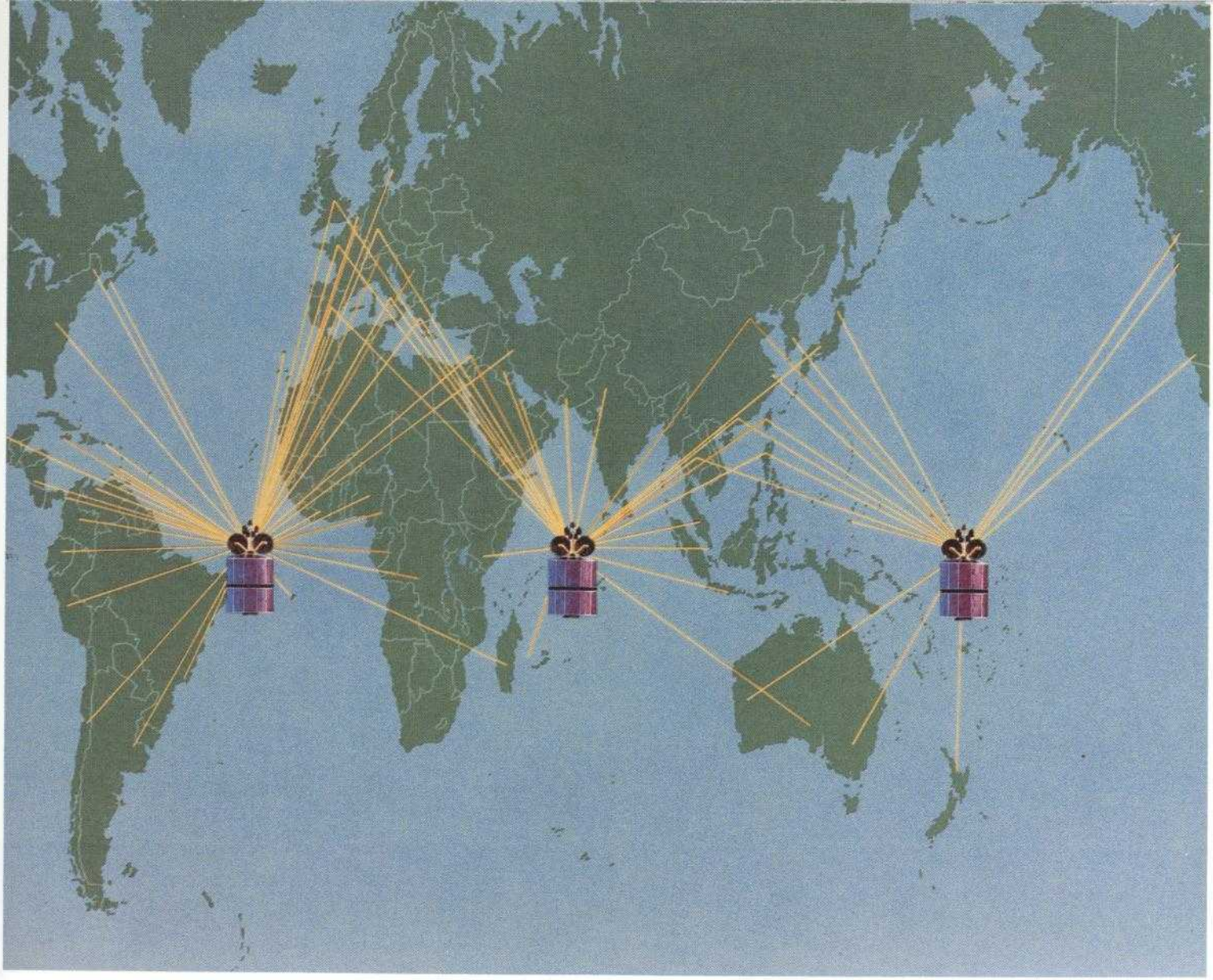
May 22, 1975—Following failure of the seventh INTELSAT IV satellite to achieve a proper transfer orbit due to a launch vehicle failure on February 20, the eighth and final INTELSAT IV satellite was launched from Cape Canaveral and positioned over the Indian Ocean. It replaced the INTELSAT IV operating in that region since July 1972.

June 28, 1975—COMSAT completed ten years of satellite communications service to the public through its customers, the U.S. international communications common carrier companies. By that time, there were 379 satellite pathways in the global system providing full-time communications services to 107 countries, territories and possessions. Along those pathways flowed a major portion of all international communications and more than two-thirds of all transoceanic communications.

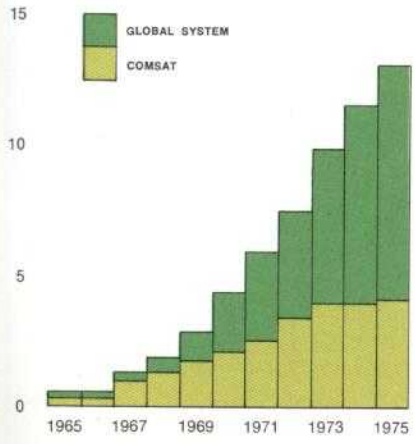
July 15, 1975—The nine-day Apollo-Soyuz mission was beamed around the world by satellites of the global system. More than one billion persons, one out of every four on earth, were able to watch on television, live via satellite, this historic first meeting in outer space of U.S. and U.S.S.R. astronauts.

September 25, 1975—The first of the new 6,000-circuit INTELSAT IV-A satellites was launched successfully from Cape Canaveral. It was not placed in service as the Atlantic region Primary Path satellite until February 1, 1976, however, because of the need for extensive testing with earth stations of a new technique, frequency reuse through spot beam separation, introduced by the INTELSAT IV-A series.

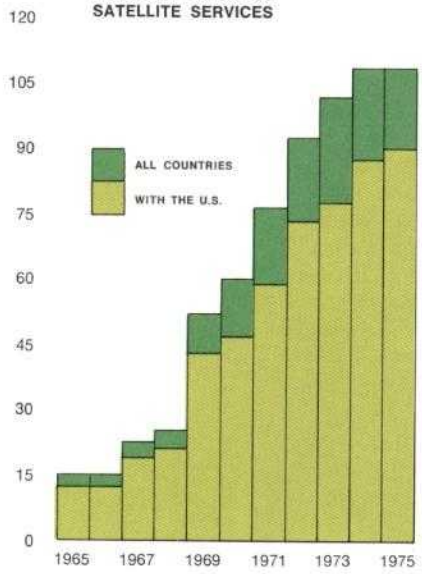
September 26, 1975—COMSAT GENERAL, IBM and Aetna Life & Casualty signed a letter of agreement to enter the domestic satellite business through a new company to be formed in accordance with the "balanced CML" option offered by the FCC in February 1975.



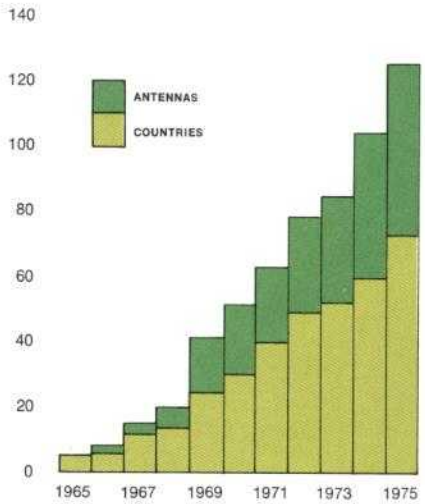
SATELLITE HALF-CIRCUITS IN FULL-TIME SERVICE
(in thousands)

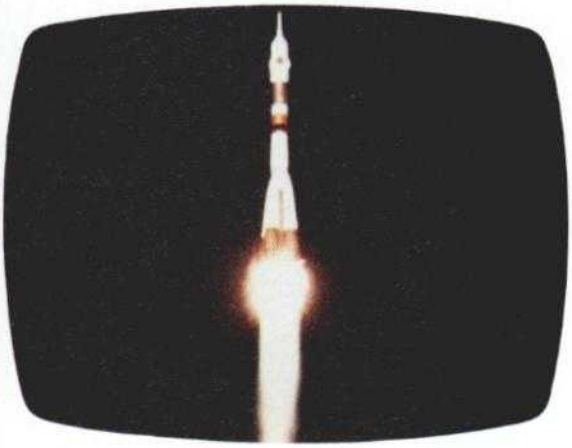


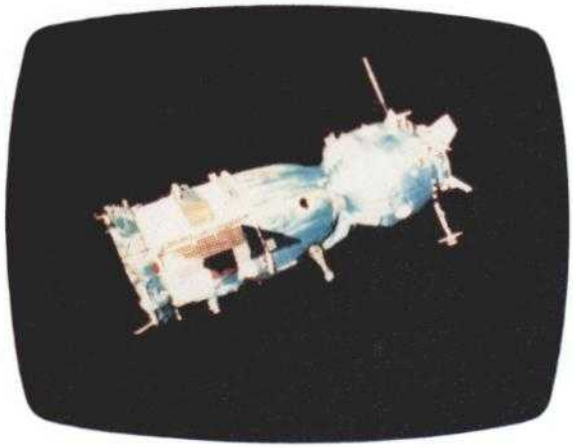
FULL-TIME USERS OF SATELLITE SERVICES



GROWTH OF EARTH STATIONS IN THE GLOBAL SYSTEM







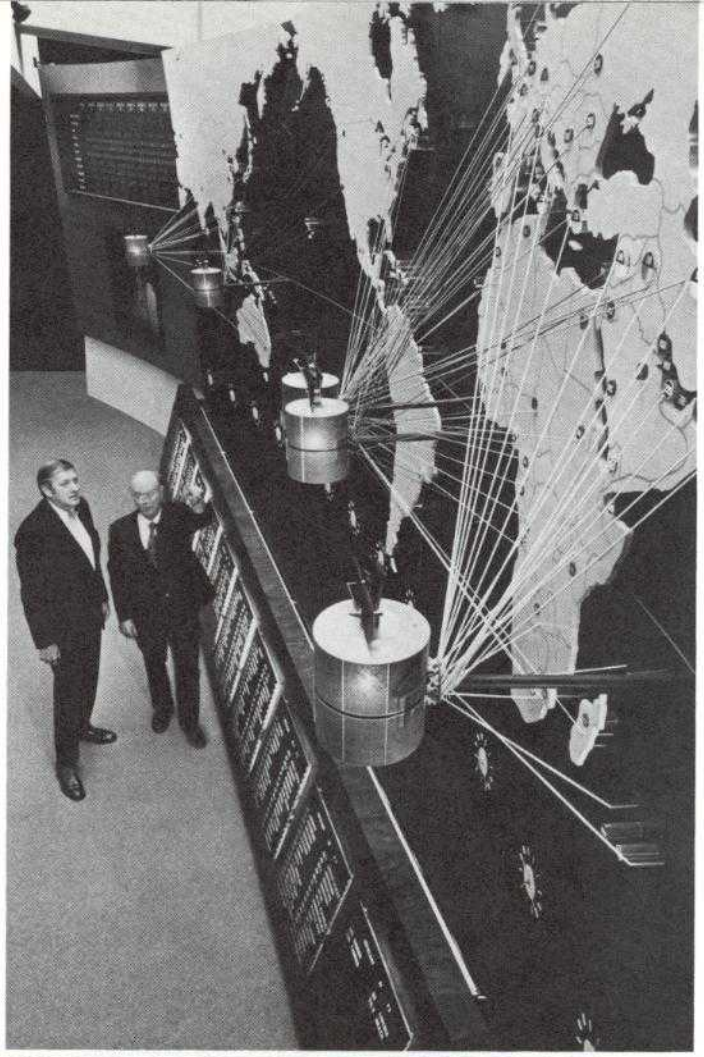
November 2, 1975—Second communications antennas were placed in operation at the Etam, West Virginia, Earth Station on November 2 and at the Andover, Maine, Earth Station on December 12. The new antennas began to provide commercial service in the Atlantic Ocean region early in 1976 when the new INTELSAT IV-A satellites became operational.

December 4, 1975—The FCC issued a decision in its long-pending initial investigation of COMSAT's rates for global system services. The FCC disallowed more than half of the Corporation's proposed rate base by eliminating items that were designed to enable it to recover the inevitable earnings shortfalls of its early years of operation, and limited the Corporation's rate of return on the reduced rate base to 10.8 percent (which the FCC said may be increased to 11.8 percent through operating efficiencies). The FCC determined that COMSAT was entitled to an 11.3 percent rate of return on equity but that it was unreasonable for the Corporation to maintain a debt-free capital structure. The FCC therefore imputed to COMSAT a capital structure including 45 percent debt at an interest cost of 10.2 percent to derive the overall 10.8 percent rate of return.

On COMSAT's appeal of the FCC's decision, the U.S. Court of Appeals for the District of Columbia Circuit on October 14, 1977 affirmed the FCC's decision in major respects but made rulings favorable to COMSAT on certain issues. Among other things, the Court ruled that although the FCC may impute 45 percent debt to COMSAT's capital structure, it may not do so retroactively and must give COMSAT a reasonable opportunity to phase debt into its capital structure over a period of years.

At the end of 1977 the Corporation was seeking further judicial review of the FCC's rate decision. Pending further judicial or administrative orders, COMSAT pursuant to FCC order has been placing in escrow, for possible refund in whole or in part to its common carrier customers, revenues amounting to the difference between its present charges for global system services and charges calculated on the basis of the lower rates required by the FCC's rate decision. In an action the Corporation is contesting, the FCC in December 1977 ordered COMSAT to make further additions to the escrow fund because COMSAT was earning more than a 10.8 percent rate of return even under the lower rates required by the FCC's rate decision.

December 15, 1975—Satellite Business Systems (SBS) was formed as a partnership by subsidiaries of COMSAT GENERAL, IBM and Aetna Life & Casualty. On December 22, SBS asked the FCC for authority to construct a unique all-digital domestic satellite system principally serving large commercial, industrial and governmental customers. Using satellites in the 12 and 14 gigahertz frequencies, rather than the 4 and 6 gigahertz frequencies now used by commercial satellites and terrestrial facilities, SBS's system will permit customers with geographically dispersed locations to combine voice, data and image communications into a single, integrated, private-line, switched network through the use of small antennas located on their own premises.

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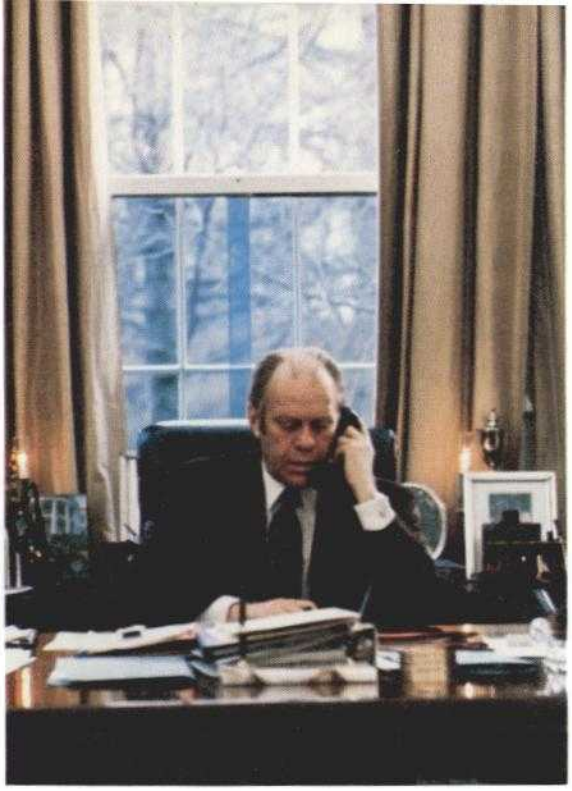
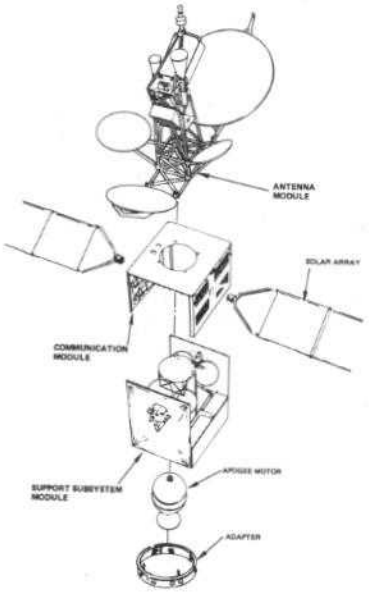


"Today's launch of the world's first communications satellite dedicated to maritime use represents a significant step forward in bringing modern communications capabilities to our nation's naval and commercial shipping interests. . . . It will surely result in more efficient and economical shipping operations, as well as savings in both lives and property. . . . I proudly applaud this new innovation in communications satellite technology."

GERALD R. FORD
February 19, 1976

1976

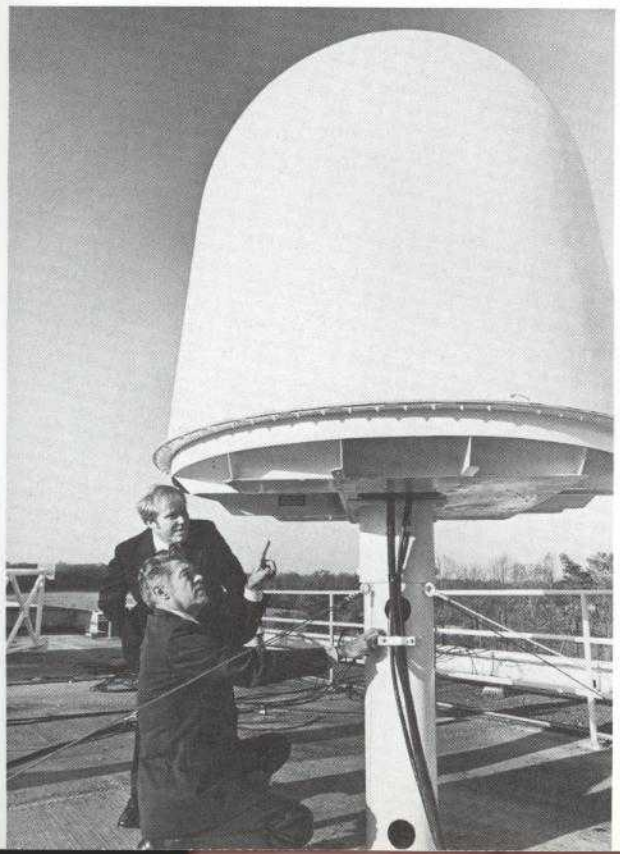
COMPONENT ARRANGEMENT OF THE INTELSAT V

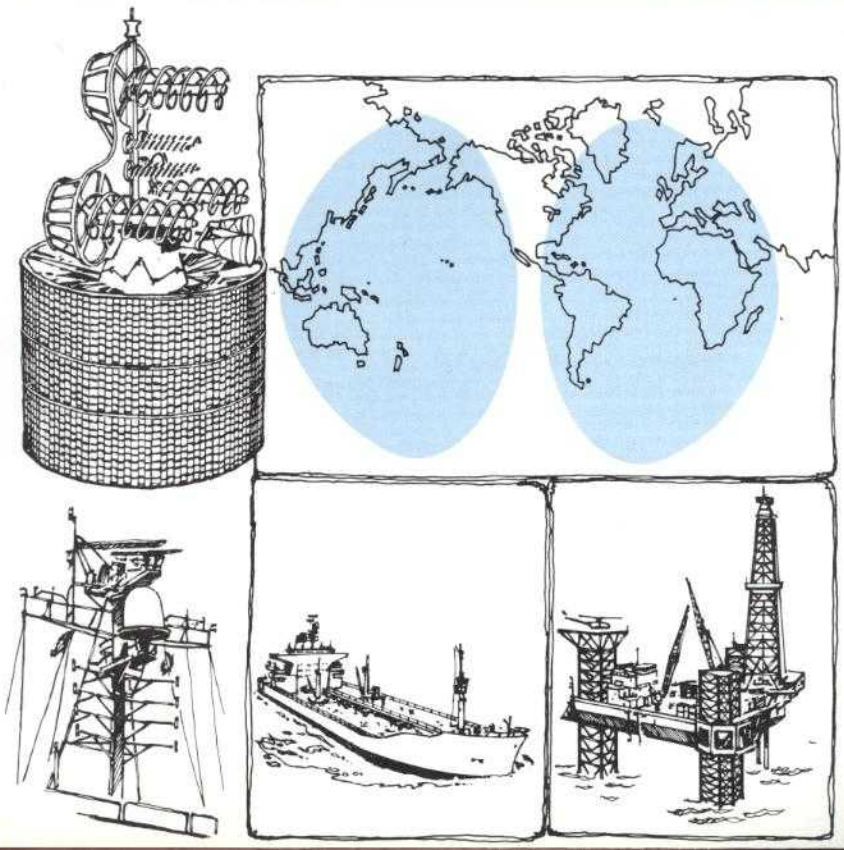


January 29, 1976—The second INTELSAT IV-A was launched and placed in service on April 1 as the Major Path satellite in the Atlantic Ocean region. The replacement of the INTELSAT IV's by the two new INTELSAT IV-A satellites nearly doubled satellite capacity in the Atlantic Ocean region to about 12,000 telephone circuits plus television.

February 19, 1976—The first maritime communications (MARISAT) satellite was launched from Cape Canaveral and stationed over the Atlantic Ocean. It began to provide service to the U.S. Navy on March 25 and to other customers on July 9. This satellite represented the most significant advance in maritime communications since the invention of the Marconi wireless at the turn of the century.

A second MARISAT satellite was launched on June 9 for service in the Pacific Ocean region. It began to provide service to the Navy on June 28 and to other customers on August 15.





May 13, 1976—The first of COMSAT GENERAL's three COMSTAR satellites, whose capacity is being leased to AT&T for U.S. domestic satellite communications, was launched and made available on June 19 to AT&T. This satellite is the first U.S. domestic satellite to be used for long distance message telephone toll services.

The second of the three COMSTAR satellites was launched on July 22 and placed in service on September 9. The satellites are being used by AT&T, and by GTE which has a subleasing arrangement with AT&T.

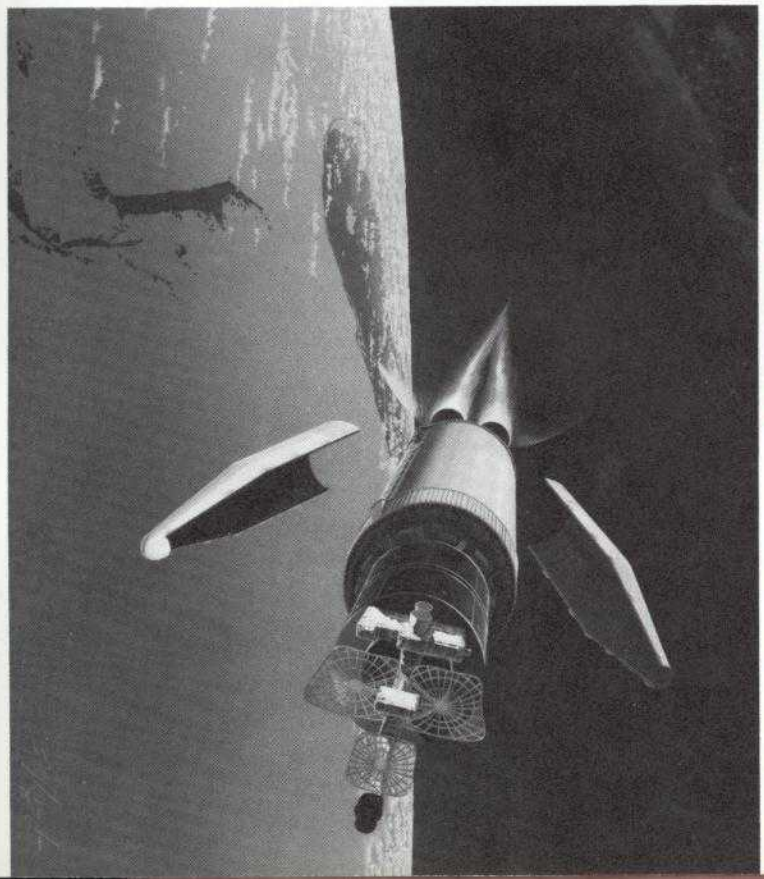
June 15, 1976—COMSAT announced that the centimeter wave beacons constructed by COMSAT Laboratories and installed on the first COMSTAR satellite for communications tests in the 19 and 28 gigahertz frequency bands were performing satisfactorily. It is expected that communications in those frequencies will be as commonplace in the 1990's as transmissions in the 12 and 14 gigahertz frequencies will be in the early 1980's to relieve communications congestion in the presently-used 4 and 6 gigahertz frequencies.

July 4, 1976—A small (six-foot) portable antenna, erected in Yellowstone National Park by COMSAT Laboratories, was used to telecast via satellite the Fourth of July activities in Yellowstone National Park, including the Old Faithful geyser, as a part of NBC's "Glorious Fourth" television special commemorating the U.S. bicentennial.

Television transmissions via satellite from the 21st Olympiad held in Montreal July 17 to August 1 totaled 2,585 half-channel hours, a new record for global coverage of a single event.

September 3, 1976—Two international agreements for the formation of an International Maritime Satellite Organization (INMARSAT) were opened for signature. Patterned somewhat along the lines of INTELSAT, INMARSAT would establish and operate the space segment of an international maritime communications satellite system. The agreements will enter into force if countries representing 95 percent of the initially prescribed investment shares have acceded to them by September 2, 1979. Currently, U.S. participation awaits enabling legislation from the Congress and the designation of a U.S. participant from the private sector.

Meanwhile, COMSAT GENERAL has been considering various alternatives for continuing maritime satellite services in the period between the time the present MARISAT satellites are no longer able to provide service (sometime after 1981) and the establishment of the proposed INMARSAT system (mid 1980's).

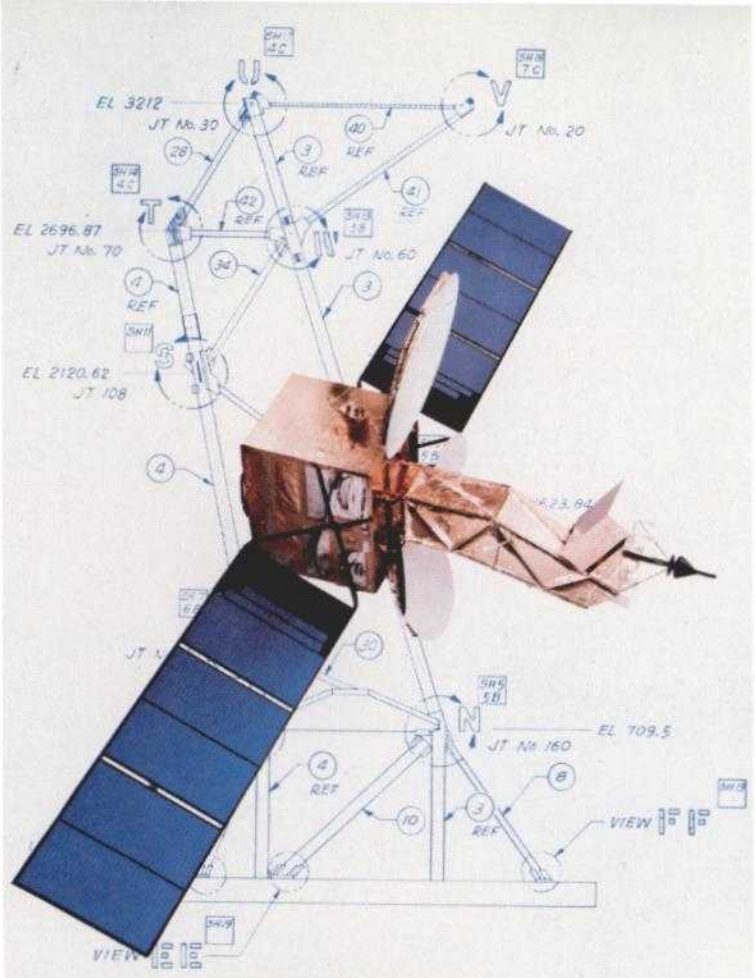


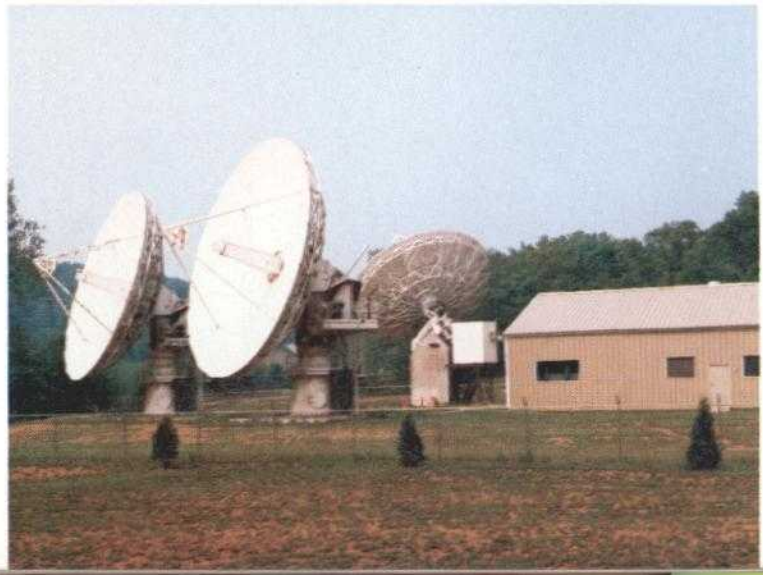
September 11, 1976—The U.S. Navy amended its contract with the MARISAT partners to include service in the Indian Ocean region beginning January 1, 1977. A third MARISAT satellite was launched on October 14 to provide this service.

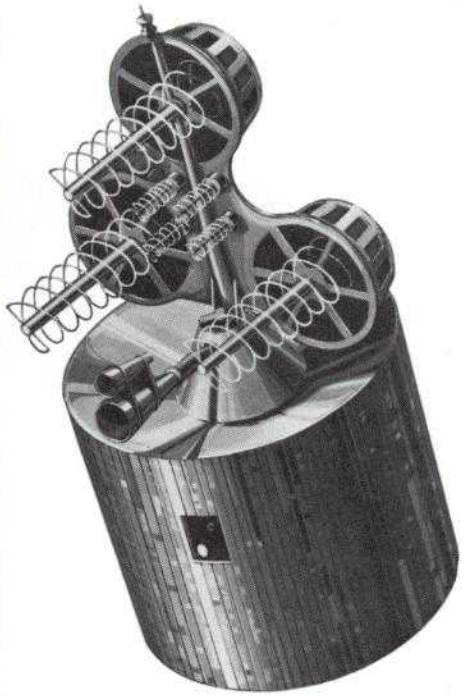
September 21, 1976—A contract was awarded to the Ford Aerospace and Communications Corporation for the construction of seven INTELSAT V satellites, each with a capacity for providing 12,000 simultaneous telephone calls plus television, or double the capacity of an INTELSAT IV-A satellite. In addition to incorporating both spot beam separation and cross polarization frequency reuse techniques, the new satellites will operate in the higher 11 and 14 gigahertz frequencies as well as in the conventional 4 and 6 gigahertz frequencies.

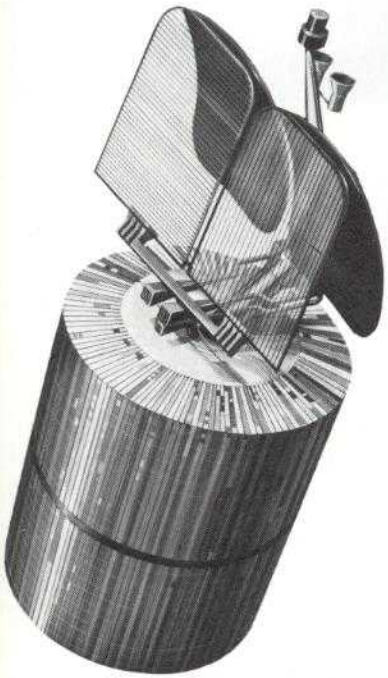
December 9, 1976—In a demonstration for European newspaper publishers, the front page of *The Washington Post* was transmitted in facsimile form on a single satellite circuit from the Etam, West Virginia, Earth Station to the Rome office of *Corriere della Sera,* a Milan newspaper, at a rate of 50 kilobits per second or a transmission time of about five minutes. In a similar demonstration on October 17, 1969, the front page of *The Times of London* was transmitted from London to San Juan, Puerto Rico, at the same speed, but 12 satellite circuits were then required for the transmission.

December 31, 1976—COMSAT GENERAL was continuing to provide technical and operational services to telecommunications entities in several countries. This program encompasses a broad range of management and engineering services to assist countries in all phases of telecommunications planning, construction and operation. Forty of the more than 85 countries with earth stations have used these services which were initiated by COMSAT in 1966 and taken over by COMSAT GENERAL after its formation in 1973.







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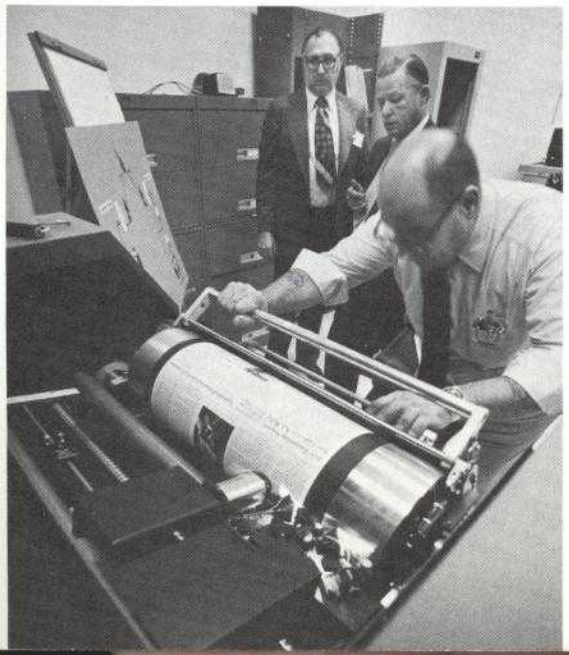
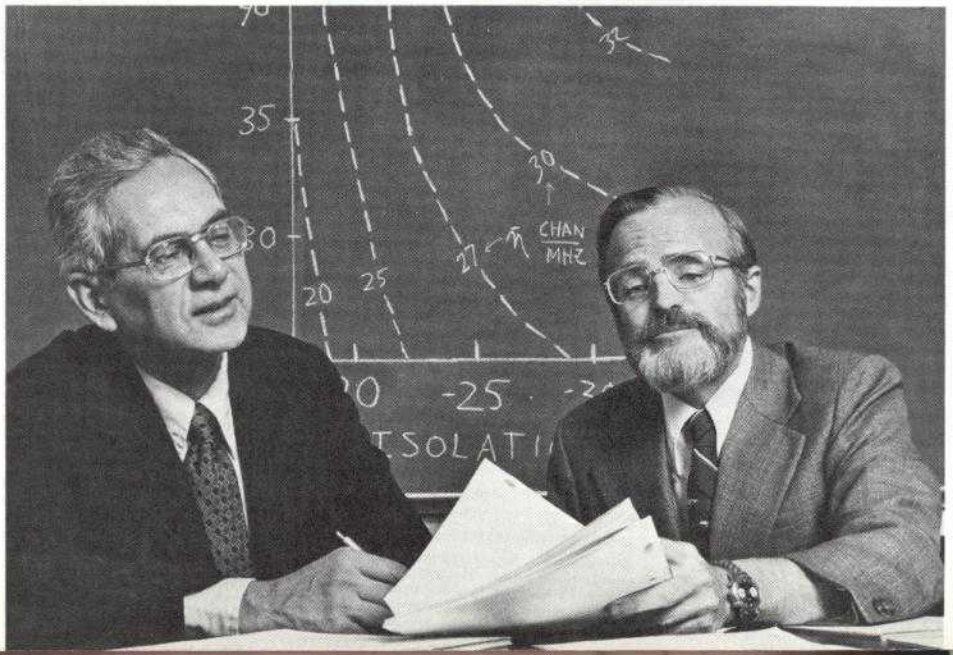
WORK SAFELY-PREVENT ACCIDENTS

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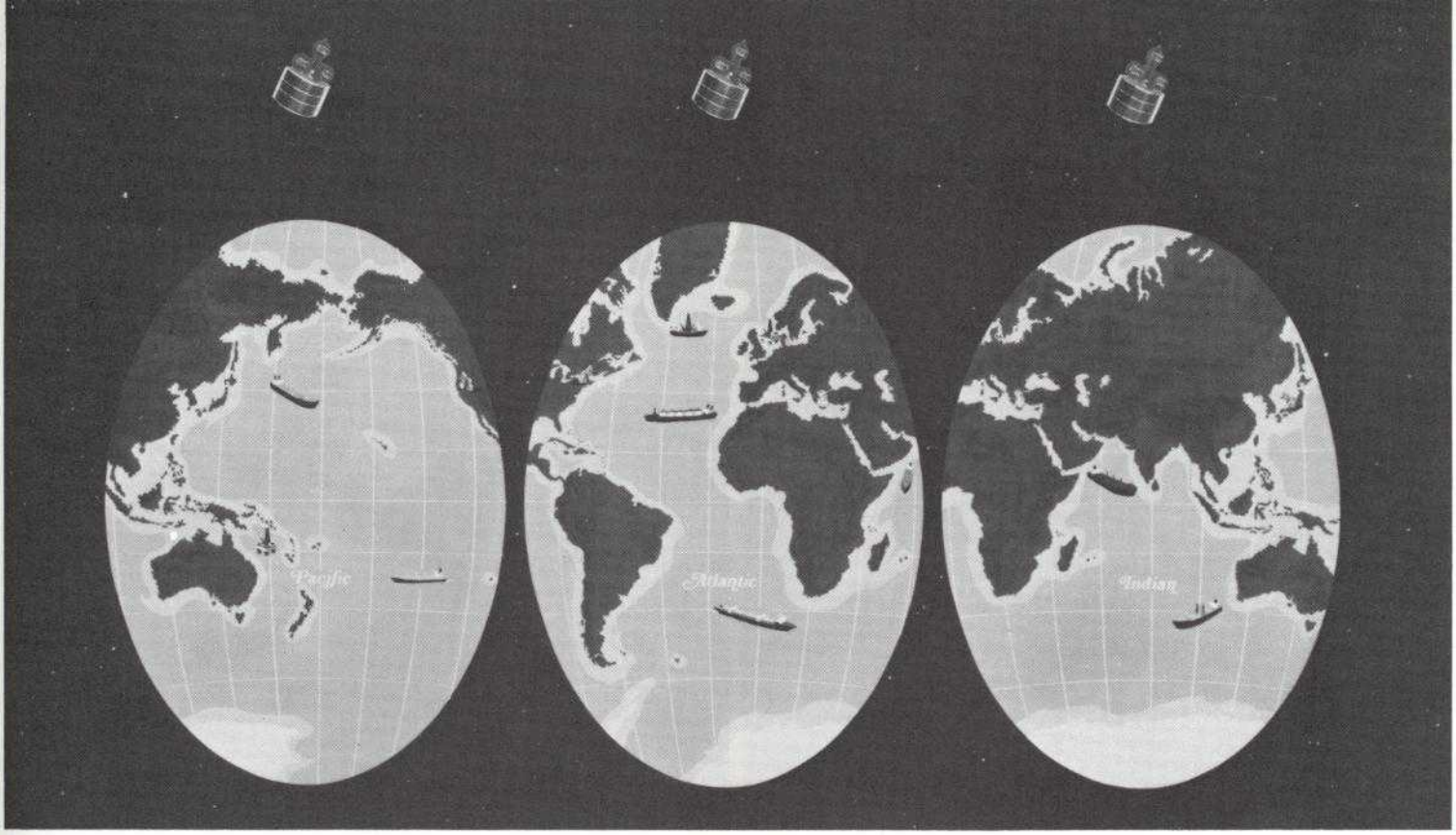
1977

January 1, 1977—The MARISAT joint venture initiated service to the U.S. Navy in the Indian Ocean region and thereby began providing maritime satellite service for the first time on a global basis.

January 1, 1977—Santiago Astrain, Secretary General of INTELSAT since September 1, 1973, assumed office as the first Director General of INTELSAT. His appointment had been confirmed by the INTELSAT Assembly of Parties (governments) meeting in Nairobi in September 1976.

January 19, 1977—COMSAT placed into service between the U.S. and Spain the first overseas high-speed 56 kilobits-per-second data satellite circuit, to serve a NASA tracking station. Within a month the FCC authorized COMSAT to extend to the Atlantic Ocean region its DIGISAT (low/medium-speed 2.4, 4.8 and 9.6 kilobits-per-second) services which COMSAT previously had been providing only between the mainland and Hawaii.

January 20, 1977—Jimmy Carter was inaugurated as the thirty-ninth President of the United States. The inaugural ceremonies, his appearance before the United Nations in March and his meetings with heads of state during the year were viewed widely on television by satellite.



February 8, 1977—The FCC authorized SBS to construct and operate facilities to provide its proposed domestic satellite services subject to various terms and conditions. The FCC concluded that the SBS system, on balance, would strengthen competition in the domestic satellite field and serve the public interest. Although judicial review of the FCC's authorization began, preparations for the SBS system proceeded. Late in the year, SBS awarded a contract to Hughes Aircraft Company for the manufacture of three satellites, one of which is to be an on-the-ground spare, for use beginning in 1981 when the SBS system is scheduled to become operational.

February 15, 1977—COMSAT GENERAL, the European Space Agency (ESA) and the Government of Canada awarded a contract to General Electric Company for the construction of two satellites for the AEROSAT program, subject to the negotiation of a satisfactory agreement between COMSAT GENERAL and the Federal Aviation Administration (FAA) for the FAA's use of COMSAT GENERAL's share of the satellite capacity in the program.

April 9, 1977—As part of the first phase of its pre-operational domestic satellite program, SBS initiated traffic tests between its small earth stations located at Poughkeepsie, New York, and Los Gatos, California. In December 1977, SBS began construction of a third earth station, in Research Triangle Park near Raleigh, North Carolina, in preparation for the second phase of the pre-operational program scheduled to begin in 1978.

May 26, 1977—The third of the INTELSAT IV-A satellites was launched successfully and placed in service on August 1 as the second Major Path satellite in the Atlantic Ocean region. This satellite increased the satellite capacity available for communications service in the region to 18,000 circuits plus television.

July 24, 1977—COMSAT Laboratories airlifted its small (four-foot) transportable earth station to Johnstown, Pennsylvania, to provide an invaluable emergency communications service via satellite during American Red Cross flood disaster relief operations in that area.

July 27, 1977—The MARISAT joint venture announced that the U.S. Navy had extended its service agreement for the use of the MARISAT satellites operating in the Atlantic, Pacific and Indian Ocean regions for a period of five years ending in 1981.

August 1, 1977—The partners in Satellite Business Systems, the subsidiaries of COMSAT GENERAL, IBM and Aetna Life & Casualty, exchanged notices of their intention to proceed with the SBS venture, and the Aetna subsidiary began its financial participation in the partnership. The partners also announced their intention to increase their respective financial commitments to SBS from $55 million to $75 million, for a total of $225 million.

August 1, 1977—The MARISAT joint venture announced that an agreement in principle had been reached with the Japanese communications carrier, Kokusai Denshin Denwa, Co., Ltd. (KDD), under which KDD would construct a shore station at Yamaguchi, Japan, to provide maritime communications services to the commercial shipping and offshore industries through the Indian Ocean MARISAT satellite, beginning in mid-1978. This service would make commercial maritime satellite communications available worldwide for the first time.

August 1, 1977—Citing action in the Congress limiting fiscal 1978 funds for the AEROSAT program to $1 million for a feasibility study, the Federal Aviation Administration (FAA) cancelled the Request For Proposal which had been issued to COMSAT GENERAL in connection with the FAA's proposed use of COMSAT GENERAL's share of the AEROSAT satellite capacity. A good deal of work had been done and considerable costs had been incurred in reliance on the intergovernmental arrangements for AEROSAT, and COMSAT regretted that the momentum toward the establishment of an aeronautical satellite capability had been lost.

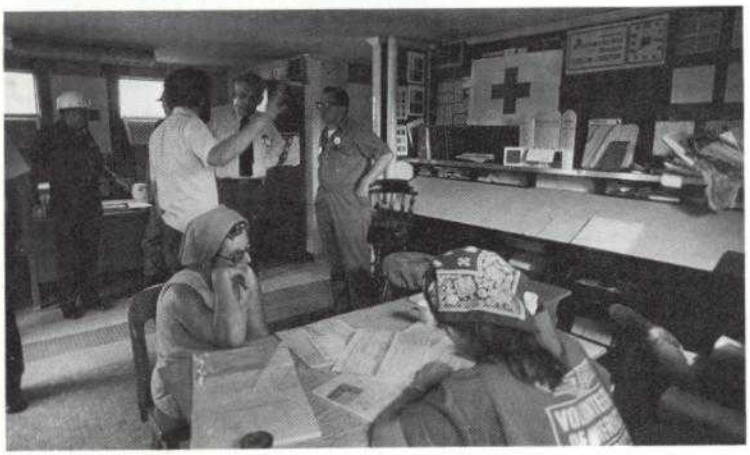
September 29, 1977—After the successful launch of the first three INTELSAT IV-A satellites, the launch of the fourth satellite in the series ended in failure because of a malfunction in the Atlas-Centaur launch vehicle. This satellite was the first of two IV-As planned for operation in the Indian Ocean region where the demand for satellite service is growing most rapidly. The cause of the launch vehicle malfunction having been identified, the launch of the next IV-A was scheduled for January 1978.

October 28, 1977—COMSAT GENERAL, the U.S. Geological Survey and Telesat Canada initiated a joint developmental program to demonstrate the collection of environmental data via satellite from remote areas. This program represents the first use of present-day commercial satellite communications technology to improve the management of earth resources.

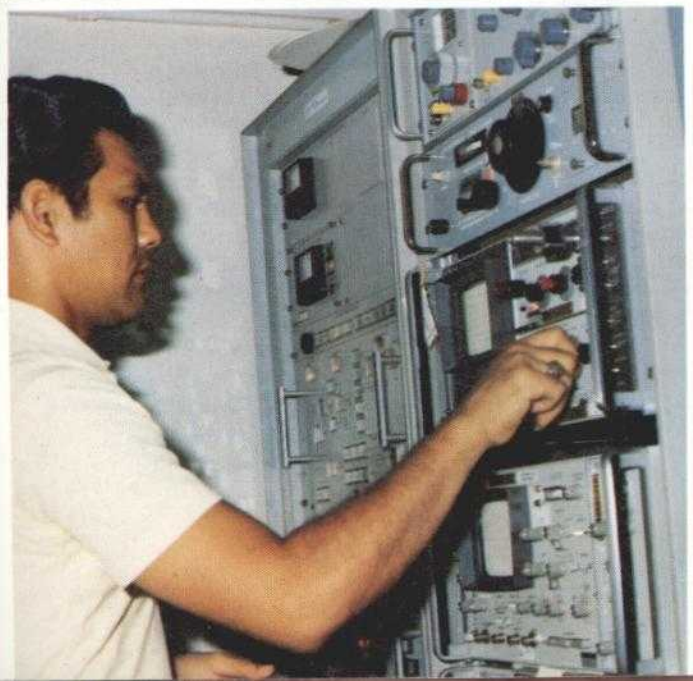
November 7, 1977—As coordinator of Project Prelude, SBS began experimental transmissions in the 12 and 14 gigahertz frequencies between Rockwell International's facilities in Pittsburgh, Pennsylvania, and Seal Beach, California, using capacity in the Communications Technology Satellite and two small transportable earth stations developed by COMSAT Laboratories. Experiments were later conducted between pairs of facilities owned by Texaco and Montgomery Ward. A principal objective of the experiments was to evaluate the potential benefits of satellite communications and advanced business equipment for meeting intra-company communications requirements of the future.

November 11, 1977—COMSAT initiated a tender offer to its shareholders to purchase shares of its Common Stock at $37 per share. Pursuant to the offer, COMSAT purchased 2,000,000 of the 10,000,014 shares outstanding. The Board of Directors had determined that the purchase would be an appropriate use of cash in light of the Corporation's projected cash flow in relation to its anticipated cash requirements. In addition to having a favorable effect on earnings per share and book value per share, the purchase made shares available to the Corporation for use in any possible future acquisitions. The purchase was a preliminary step toward a later restructuring of COMSAT's capital to include a substantial amount of debt, consistent with the FCC's position that for ratemaking purposes the FCC will assume the inclusion of a substantial percentage of debt in COMSAT's capital structure.

December 31, 1977—As COMSAT's fifteenth anniversary approached, there were more than 550 satellite pathways in the global system through which full-time communications services were being provided to about 120 countries, territories and possessions. COMSAT's satellite services were putting the U.S. in communication with nearly 100 of them.




PEOPLE'S REPUBLIC
OF CHINA



THE FUTURE

"An 'artificial satellite' at the correct distance from the Earth would make one revolution every 24 hrs.; i.e., it would remain stationary above the same spot and would be within optical range of nearly half the Earth's surface. Three repeater stations, 120 degrees apart in the correct orbit, could give television and microwave coverage to the entire planet."

ARTHUR C. CLARKE
Wireless World
February 1945

ARTHUR C. CLARKE

Arthur C. Clarke, the British-born science-fiction writer and author of numerous books on space and undersea exploration, has been called the "godfather" of satellite communications. As early as 1945, he proposed placing satellites in synchronous orbit to relay communications around the globe. He calculated that three satellites positioned to keep pace with the earth's rotation would be able to provide world coverage. Mr. Clarke's vision became a reality 24 years later when INTELSAT *satellites over the Atlantic, Pacific and Indian Oceans formed a fully global satellite system. In the following essay (from* THE VIEW FROM SERENDIP, *1977), Mr. Clarke again looks ahead to speculate on the future impact of satellite communications.*

Whenever I peer into my cloudy crystal ball and try to visualise the future of communications satellites, I remember an incident that occurred in England almost a hundred years ago.

The very alarming news had just been received from the United States that a certain Mr. Bell had invented the telephone. This, of course, was very disturbing. So, as we British do in an emergency, we called a parliamentary commission. It listened to the evidence of expert witnesses, who gave the reassuring news that nothing further would be heard of this impractical Yankee invention.

Among the witnesses called was the chief engineer of the British Post Office. Someone on the commission said to him: "We understand that the Americans have invented a machine that can transmit human speech. Do you think that this—*telephone*—will be of any use in Great Britain?" The chief engineer thereupon replied: "No, sir. The Americans have need of the telephone, but we do not. *We* have plenty of messenger boys."

This very able man totally failed to see the possibilities of the telephone, and who can blame him? Could *anyone*, back in 1880, have imagined that the time would come when every home would have a telephone, and business and social life would depend upon it almost completely?

I submit . . . that the eventual impact of the communications satellite upon the whole human race will be at least as great as that of the telephone upon the so-called developed societies. In fact, as far as real communications are concerned, there are as yet no developed societies; we are all in the semaphore and smoke-signal stage. And we are now about to witness an interesting situation in which many countries—particularly in Asia and Africa—are going to leapfrog a whole era of communications technology and go straight into the Space Age. They will never know the vast networks of cables and microwave links that this continent has built up at such enormous cost. . . .

I believe that communications satellites can unite mankind. Let me remind you that this great country was virtually created a hundred years ago by two inventions. Without them, the United States was impossible; with them, it was inevitable. Those inventions were, of course, the railroad and the electric telegraph.

Today we are seeing, on a global scale, an almost exact parallel to that situation. What the railroads and the telegraphs did here a century ago, the jets and the communication satellite are doing now to all the world. . . .

For thousands of years, men have sought their future in the starry sky. Now this old superstition has at last come true, for our destinies do indeed depend on celestial bodies—those that we have created ourselves.

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Chairman of the Board of Directors of COMSAT

JOSEPH V. CHARYK
President of COMSAT

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Chairman and Chief Executive Officer of COMSAT General Corporation

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WILLIAM L. ZIMMER, III
Counsel, law firm of McGuire, Woods & Battle; former President and Chief Executive Officer of A. H. Robins Company, Incorporated

Directors Emeriti

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Named to original COMSAT Board by President Johnson in 1964; served continuously as a director until retirement in 1977

GEORGE L. KILLION
An Incorporator of COMSAT; served continuously as a director until retirement in 1977

LEO D. WELCH
An Incorporator and first Chairman and Chief Executive Officer of COMSAT; served continuously as a director until retirement in 1977

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President

LUCIUS D. BATTLE
Senior Vice President, Corporate Affairs

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Vice President and General Manager, International Operations Division

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Assistant Vice President, Advanced Systems

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Assistant Secretary

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