



TODAY

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'MOST MOMENTOUS YEAR SINCE FOUNDING'

COMSAT Chairman Irving Goldstein minced no words in describing the year just past.

"By any yardstick, 1987 has been the most momentous year since the company's founding," he told shareholders gathered for a meeting at Clarksburg on Nov. 20.

Momentous, indeed. It isn't every year that:

- the FCC orders a refund of \$62 million in alleged overcharges;
- an attempted merger falls apart;
- the U.S. Senate investigates the status of international communications policy and COMSAT's role in it;
- businesses and assets that haven't lived up to expectations have to be disposed of; and
- powerful new competition looms on the horizon, forcing bold changes aimed at protecting market position.

Corporations aren't often called to play center stage in such drama. But, according to Goldstein, COMSAT today is better off—having faced head-on the challenges of the first six months of the year. COMSAT has emerged a stronger, albeit smaller, company than it has been in recent years, Goldstein told shareholders.

Indeed, a snapshot of COMSAT in the waning days of 1987 suggests a certain corporate surefootedness. Gone are the businesses that did not have potential or that had been holding the company back, Goldstein reported. In hand are businesses in markets that COMSAT "can serve better than the competition," he said.

"Our core business—international regulated carrier services—is solid and we're working to strengthen it even more. Our growth businesses are re-

Review of 1987

lated to our strengths, and we will build on them," Goldstein said.

Other than the international regulated business, he said, COMSAT is focusing on three areas: maritime communications services, in-room video entertainment distribution and communications systems for government and businesses.

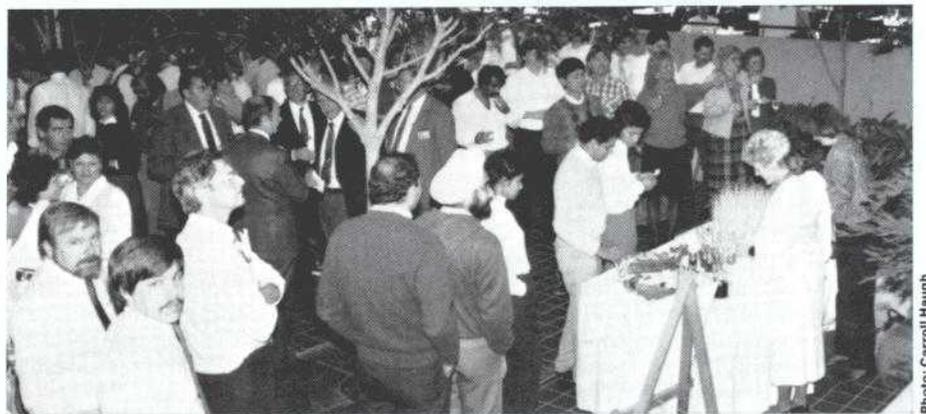
The sale of COMSAT International and the very-small-aperture terminal (VSAT) manufacturing business, resulting after the Contel merger fell through, drew "a clearer line of distinction between our regulated and unregulated businesses. We no longer run the risk of competing with our international carrier customers in those

markets—those who buy INTELSAT and INMARSAT space segment from us," he said. Not competing with our customers, Goldstein said, will better serve our longer term interests.

COMSAT will finish the year in fine health financially, he said, adding that the company will have almost \$100 million in cash. "We plan to use our resources, including cash, to capitalize judiciously on opportunities to augment and grow our operations," Goldstein said.

On the eve of its 25th anniversary, COMSAT has much about which to be proud, Goldstein said. For the future, "we are evolving rapidly to anticipate and shape developments in our industry. We are determined to be flexible, adaptive and responsive to emerging customer needs.

"We are indeed fortunate to have the people in place who can deliver. They are the ones who will carry us confidently into the future. Now is the time to go forward."



Bringing Out The Best In All Of Us—Page 5.

Photo: Carroll Haugh

Review of
1987

**COMSAT ISS MAKES
'REAL QUICK EVOLUTION'**

In meeting with employees last April, World Systems Division President Bruce Crockett spelled out his vision of the future.

"If we don't find a way to be competitive with undersea fiber optic cable, we'll wind up being the communications link of last resort.

"There is no time to waste in turning ourselves into a competitive business," Crockett said. Doing so will not require a "revolution," he said, but it will take "a real quick evolution."

By December, the "evolution" was well under way and the new COMSAT Intelsat Satellite Services (ISS) unit had emerged. Seemingly overnight, ISS had turned into a creative, quick-footed marketplace player. Prices had been slashed, creative discount programs had been introduced, and an historic agreement had been struck with AT&T—COMSAT's biggest customer.

Chairman Irving Goldstein, speaking to shareholders recently, characterized the ISS evolution as "moving away from being order-takers toward becoming a competitor in tune with and responsive to the needs of our customers."

In view of the competition ahead, the ISS transformation had to come "real quick." Next year, the first trans-oceanic fiber optic cable, TAT-8, is set to begin service. It will have sufficient capacity to meet the entire 1990 traffic forecast for voice-grade service between the U.S. and Western Europe. The first trans-Pacific cable—due to begin service in 1989—will have five times IN-TELSAT's 1985 capacity in that region. And, already, additional undersea fiber optic cables are being planned.

Stepping in tune with customer needs this year, ISS took several steps that helped ensure its own future:

- It lowered rates an average of 13.6 percent in June.
- For the first time, it offered customers discounted rates for analog voice grade circuits in exchange for five-, seven- and nine-year contracts. Customers opting for a nine-year commitment, for example, could save as much as 31 percent over the monthly service price—and count on prices to remain stable over the period. The discounts proved so popular that within several months of their offering more than 88 percent of COMSAT's voice grade leases were under long-term contract.
- Its agreement with AT&T guaranteed that AT&T will send a substantial portion of its growth traffic via INTEL-SAT well into the next decade.
- The agreement also laid the groundwork for a new tariff that introduces a competitive \$200 voice-grade circuit, available to customers who convert to state-of-the-art digital transmission and take advantage of circuit multiplication techniques.
- The agreement also offered a marketplace alternative to FCC-administered facilities loading, which is the current method of distributing IMTS traffic between satellite and cable facilities.

Both COMSAT and AT&T have stated that the agreement is "consistent with the public interest," and forms a "basis for the withdrawal of all loading guidelines."

Looking back, Goldstein said, "Instead of the beginning of the end for satellites, 1987 is the year that satellites guaranteed their place in international telecommunications." ❁

Remember . . .



COMSAT Corporation's New Year's resolution is to provide a more comfortable, healthy and productive work environment for all employees.

Beginning Jan. 1, COMSAT employees and visitors who smoke will be limited to lighting up only in private offices or workstations. And smoking in those areas will be allowed only if a smokeless ashtray is used and others nearby do not object. Other than designated areas in lunchrooms and cafeterias, smoking will not be allowed in common areas.

These restrictions are the result of the new smoking policy announced in November. In implementing the policy, COMSAT joined a growing number of organizations that have severely limited areas in which smoking is acceptable. The Federal government, IBM, Contel, C&P Telephone and USA Today are notable among local firms implementing similar restrictions.

Managers are responsible for working out arrangements to the satisfaction of smokers and non-smokers if possible. However, if no accommodation can be made, the preference of non-smokers will prevail and smoking will not be allowed. ❁

**Charyk To Head
Draper Laboratory**

Retired Chairman and CEO Joseph V. Charyk has been elected chairman of the board of the Charles Stark Draper Laboratory, Cambridge, Mass. Charyk has served on the Draper board since 1981.

Draper is a non-profit organization dedicated to research, development and education. It is engaged primarily in the development of guidance, navigation and control systems, advanced spacecraft guidance and control, precision pointing and tracking system design and fault-tolerant computer development.

Charyk retired from COMSAT in 1985. He continues to serve on its board of directors. ❁

Telepathology Concept: Hospital Without Walls

Anyone who has undergone medical tests to diagnose an illness can tell you: waiting for the results can be agonizing. Delays of a week or more are not uncommon—especially if tests have to be sent away for expert analysis. Meanwhile, valuable treatment time passes and fears build.

An innovative business arrangement struck last summer promises to shorten that wait. It brings together advanced telecommunications and sophisticated broadcast and diagnostic equipment to enable experts located at distant locations to see and analyze test specimens and report back in hours, not days or weeks.

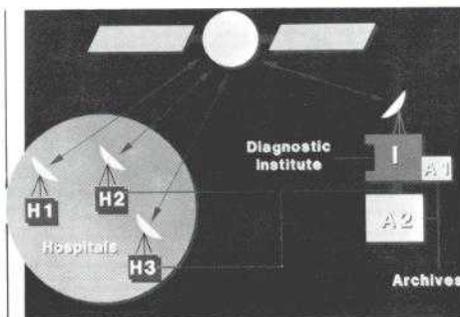
The arrangement combines the expertise of COMSAT Corporation and Corabi International Telemetrics, a privately held, Rockville, Md., company. Since its founding in 1985, Corabi has pioneered development of telepathology.

Telepathology, as diagnosis over long distances is called, holds much promise. Not only will it eliminate costly delays and contribute to improved patient care, but it also holds the potential for a worldwide "hospital without walls," one in which geographic distance no longer stands in the way of access to expert diagnosis.

"The overall system will not only enhance the quality of medical diagnostic care, but also reach segments of the U.S. and overseas populations that would not otherwise be served," said Gilbert Rye, president of COMSAT Government systems, the unit of the company managing the telemedicine business.

The heart of the Corabi Telemedicine System is high-resolution television and broadcast equipment, capable of producing clearly detailed, easy-to-see pictures of test specimens, as they are seen when looking through a microscope. The pictures produced by the Corabi system are two to three times sharper than those of today's standard TV sets.

It is primarily the sharpness of the pictures, and the detail that can be observed in them, that sets the Corabi system apart from earlier telemedicine techniques and makes long-distance diagnosis possible. For years, doctors have transmitted X-rays over telephone lines. But, until now, there has been



"It is one of those opportunities where we can get into a new business without a big investment."

no way to achieve the clarity and detail required by pathologists.

Through COMSAT's communications link, the pictures are sent "live" to the distant pathologist, who, by remote control of the microscope, can examine the specimen thoroughly. Simultaneously, the patient's medical history can be transmitted to the pathologist. With the diagnosis complete, the report can be sent immediately back to the patient's doctor.

COMSAT's decision to team with Corabi offers a chance to tap a new and growing market, said Rye. He also said he sees it "as an opportunity for COMSAT to be involved in a business that benefits people."

Joining with Corabi "allows us to penetrate a new market with the credibility that Corabi brings to the medical marketplace," said John Champagne, director of business development for Government Systems.

"It is one of those opportunities where we can get into a new business without a big investment," Rye said.

COMSAT's role in the venture will be primarily as architect of communications systems. These systems could use satellites, cable or microwave, or a combination. In instances where satellites are used, the company will provide the necessary capacity, using SBS-1

if practical. "We're also looking to be the integrator and installer of Corabi workstations," Champagne said.

Corabi brings first-hand medical experience to the team. Its staff includes doctors who have worked in the pathology field and know market needs. Corabi Chairman Ronald S. Weinstein is chairman of pathology at Rush—St. Luke's Presbyterian Hospital in Chicago and president-elect of the U.S. Canada Pathology Association.

Hospital administrators should find the Corabi Telemedicine System attractive on at least two counts, according to Champagne. For one, they should see it as a way to enhance the level of medical care their institution provides. Secondly, the quick and accurate diagnoses made possible by the system can have a significant impact on financial performance.

Today, medicare payments made to hospitals are based on the admitting diagnosis—and the length of stay assigned to the identified illness. Waiting for test results may require that a patient stay longer than the time specified under the original diagnosis. Each day over the specified time could cost the hospital hundreds of dollars, which would not be paid back by Medicare. Rapid and accurate diagnosis through the Corabi system could shorten the patient's stay—and keep hospital costs in line.

Already three hospitals have agreed to participate as beta test sites, according to Champagne. Those sites should be in service by year end.

Of the 7,000 hospitals in the nation, about 1,000 already have satellite antennas, said Champagne. Hospitals, particularly those that are part of a bigger corporation, have an increasing need for voice, data and image communications.

As COMSAT, through its association with Corabi, becomes a credible provider of hospital communications, the potential for additional business increases, Rye pointed out. "It gets us into a growth market," he said.

That could be good for other COMSAT businesses. "We'll be looking for possible synergies with other parts of COMSAT," Rye said, adding, for example, that the in-room video entertainment that COMSAT Video Enterprises provides to hotels might serve hospital rooms just as well. 

Review of
1987

**MARITIME SERVICES GROWS,
ENCOUNTERS COMPETITION**

COMSAT Maritime Services met with growing competition this year from cellular radio, which appeared to be making inroads in some coastal areas.

Despite the new competition, Maritime Services' business has grown rapidly in 1987, according to Chairman Irving Goldstein. The growth, he said, has resulted largely from the development of new satellite-delivered consumer services to passengers at sea. Credit card payphones aboard

ships are one of COMSAT's latest consumer introductions.

The number of ship earth stations continues to grow as well. By October, nearly 6,100 ship or transportable terminals were using the INMARSAT system.

Referring to the competition from cellular telephone, Goldstein said COMSAT is developing "new strategies, including new tariff structures, to compete effectively with this medium."

Allnet Offers International Service

Allnet Communication Services recently won FCC approval to provide long-distance telephone service between the U.S. and the U.K. Allnet's foreign carrier counterpart will be Britain's Mercury Communications. In entering the international marketplace, Allnet joins an elite group. According to the trade publication **FCC Week**, only AT&T, US Sprint and MCI—among all of the 500 long-distance companies formed since Ma Bell's break-up—have been able to offer overseas service. One obstacle has been trying to find a foreign carrier to provide the other end of the service. With

many countries' long-distance providers being monopolies that already have agreements with AT&T, finding one willing to do business with another U.S. company has been difficult.

Allnet expects to lease transponders from COMSAT initially, then switch some of its traffic to the Private Trans-Atlantic Telecommunications system fiber optic cable when it goes into operation in 1989.

Allnet has also told the FCC it wants to provide service between the U.S., Hong Kong and points beyond using satellites.

Electronic Media Exhibition Set For 1989

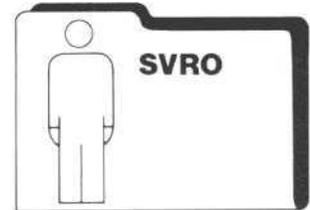
The First World Electronic Media Symposium and Exhibition has been scheduled for Oct. 3-9, 1989 in Geneva. It will be sponsored by the International Telecommunication Union (ITU).

The Symposium will provide an opportunity for representatives from the electronics, telecommunication and data equipment industries, radio and TV companies, national telecommunications administrations, computer technology researchers and regulators

to discuss policy, legal and technical issues.

The exhibition will serve as a forum for new technologies and services in such fields as interactive exchange of information, modern picture and text transmission, computer applications in mass communications, direct satellite broadcasting, high-definition TV and electronic news gathering and distribution.

**More Info Due On
Retirement
Opportunity**



During January, employees eligible for the Special Voluntary Retirement Opportunity (SVRO) announced last month will have a chance to learn more about what the program could mean to them personally.

COMSAT in late November announced that employees 55 or older who were on the active payroll as of Sept. 18, 1987, and who, as of March 31, 1988, would have at least five years of credited service would be eligible for a special voluntary retirement package.

In some cases, the effective date of the SVRO may be deferred until April 1, 1990 for those eligible employees who are deemed "essential" to the corporation. Only the COMSAT chief executive officer may authorize deferral.

Individuals who terminate employment with COMSAT prior to March 31, 1988, and the termination is not the direct result of a business divestiture, must have written permission for termination from their division president or corporate vice president to be eligible for insurance benefits after retirement.

A personalized benefits summary will be delivered to eligible employees in January. Later in the month, a seminar will provide a forum for employee questions. Retirement planning issues will also be covered.

Eligible employees electing to take advantage of the program will receive an unreduced benefit under COMSAT's retirement plan. In addition, they will receive a supplemental payment equal to 1/2 of 1 percent of base annual pay for each full month of service up to a maximum of 120 percent pay for 20 years of service.

The retirement plan benefit is available in a lump sum cash payment or as an annuity. Payments will commence on April 1, 1988 provided that the payment option is selected by February 29.

TODAY

PEOPLE

United Way Drive Brought 'Out the Best'



This year's United Way campaign at COMSAT has to go down as one of the most rewarding in company history. Indeed, it seems to have succeeded in "bringing out the best in all of us," this year's United Way theme.

Employees increased the amount of their contributions an average of 19 percent over last year. And 3 percent more employees participated this year.

As a result, COMSAT will turn over a check for more than \$145,000 to the National Capital Area United Way.

Approximately \$81,000 of the total came from employee giving through payroll deduction, check or cash. An additional \$3,500 was raised through special United Way events held at Clarksburg and the Plaza throughout the two week campaign. COMSAT's corporate contribution was \$60,000.

Susan Mayer, vice president of Corporate Development and chair of this year's campaign, congratulated

the
**United
way** campaign



all employees for their support. She also expressed appreciation for the work by campaign volunteers that made this year's drive successful.

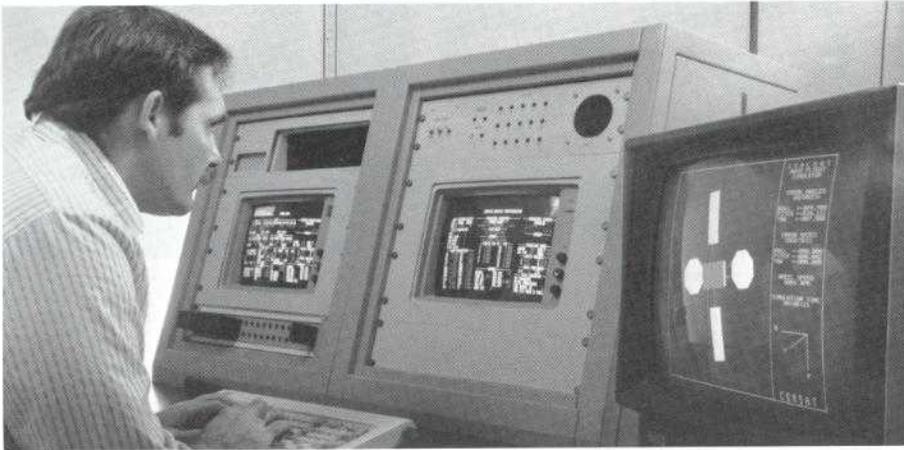
"COMSAT employees deserve a special thanks for exceeding last

year's levels of giving and participation. And I would like to say a special thanks to all who made it such a successful campaign," Mayer said. She said that about 150 employees worked on the drive.

This year's special United Way events created many COMSAT winners. Among the winners and their prizes were:

- Marvin Bowser, four-day cruise;
- Gene Bainbridge, two U.S. Air tickets anywhere the airline flies.
- Bernie Joyner, week's vacation in Florida Keys;
- Howard Flieger, \$300 gift certificate from Sharper Image;
- Jackie Reed, \$200 gift certificate from Garfinkel's;
- Irv Dostis, \$200 gift certificate from Best Products;
- Herb Bradley, \$100 gift certificate from Brookstone; and
- Eva Stemmer, \$100 gift certificate from Erol's.

Training Ground For Flying Satellites



In the world of satellite TT&C—telemetry, tracking and command—preparation is everything. And for much of the past nine years, Earl Main has been prepared for anything.

He's played a game of "what-if" hundreds of times, sorting through the possibilities of what could go wrong to knock a satellite's beam off course and what could be done to correct it—without unnecessarily wasting precious fuel.

Main hasn't been caught up in useless fantasy.

Instead, he, along with colleagues at COMSAT Labs' Stabilization, Telemetry and Command Department, have been developing and perfecting satellite simulators—a complex array of computer hardware and software. Similar in purpose to the flight simulators that airplane pilots use in training, satellite simulators give control operators a chance to learn maneuvers, to become familiar with contingency plans, to minimize panic and to prepare for a real emergency.

So far, Main and his colleagues have developed three satellite simulators—one each for the three-axis stabilized INTELSAT V and Satellite Television Corporation's DBS satellites and one for the dual-spin stabilized IN-TELSAT VI. The department, headed by Manager Al Ramos, is looking to build and sell additional simulators, which cost about \$1 million each and take about 18 months to complete.

Specifically, the COMSAT—developed simulators mirror the attitude and control system of a satellite. Attitude and control has to do with keeping the satellite antenna pointed on target. In order to provide uninter-

rupted service to an area on earth, the satellite must remain pointed precisely, despite forces that continuously work against it. If it shifts even by a fraction of a degree, some communications customers could find service interrupted.

With a COMSAT simulator, satellite operators gain a number of benefits, Main pointed out. Newly-hired employees can get hands-on experience with everyday attitude and control maneuvers—without jeopardizing a multi-million dollar investment in space. Satellite owners can develop and evaluate control system designs. They can test contingency plans drawn up in advance of a crisis.

A simulator can be especially valuable during crisis, Main said. Instead of experimenting with the real satellite, and possibly making the problem worse while wasting valuable fuel, experts can build the failure into the simulator, trying a range of procedures to correct it.

The simulator stationed in Main's office at COMSAT Labs has the bearing of a large computer console with a color monitor overhead. It is, he said, designed to look and feel as much like an actual control center as possible.

Several computer screens provide continuous stationkeeping information: which thrusters are enabled or firing, and the attitude error the satellite thinks it sees. A keyboard allows the operator to program in a failure—or take action to resolve it.

A high-speed, 32-bit minicomputer is at the heart of the simulator. Spacecraft dynamics, its sensors and actuators and most likely failures have been modeled into the computer software. The computer is capable of what Main

refers to as "real-time" simulation. That means it can interact with human give-and-take. As the operator keys in a maneuver, the computer provides immediate feedback.

With the cost of satellites, launches and launch insurance spiraling upward, satellite owners and operators are intent more than ever on protecting their assets—and conserving fuel supplies for longer service. A COMSAT-developed simulator could help them achieve both goals. 



A Clarksburg employee called to comment on the use of singing telegrams to publicize the recently completed United Way Campaign. "I'd like to suggest that soliciting donations is a serious and worthwhile cause that was made to look silly by the presence of a singing duck . . . it detracted from a useful purpose," the caller said. Bob Hunter, director of COMSAT Public Relations, responds: "The purpose was not to detract, but to bring some fun and spirit to what has often been a somber and sometimes distasteful experience which has, at times, been met with boredom and indifference. The goals of this year's campaign were to raise funds and to have fun. Those goals were achieved."

A Plaza employee suggested having a central location at the Plaza where employees could gather for lunch. According to Corporate Services Vice President Ron Mario, plans are under way for an employee lunchroom/lounge. "Our plan is to build an area on the first floor of the Plaza with a vending machine area and seating for employees. The schedule for completing this project is the second quarter of 1988." 