

## Persian Gulf Related Communications Makes COMSAT World Systems' NCC a Busy Place

**T**hese haven't been ordinary times for Kenn Sweigart and the staff of COMSAT World Systems Network Control Center (NCC).

The NCC is normally a busy place. Tasked with the job of coordinating space segment for video services, it operates round the clock, 365 days a year, without a halt.

But after the start of the conflict in the Persian Gulf, activity shifted into high gear.

"I headed home on the Metro the day the air war started," said Sweigart, manager, operational services. "When I got there, my wife told me the war had started. I turned around, and headed straight back to work. Once I got here, all the phones were ringing."

Usually when customers call they request a specific time for a satellite link. This time customers were asking for capacity "whenever it was available. Everybody wanted anything they could get," said Sweigart.

The task Sweigart faced was an enormous one. The NCC usually coordinates the transmission and reception of 20-30 video programs a day. Once the conflict began, those numbers rose to 90-100 a day. Besides handling requests from the networks (ABC, CBS, NBC and CNN), the NCC had about 200 other customers who were clamoring for space segment.

To help ease the workload, NCC staffers, who usually work in three eight-hour shifts, temporarily moved to staggered 12-hour shifts. Some staff who were out on vacation were called in as well. "Individuals didn't feel as much pressure when they knew someone could step in and back them up," said Brian Murray, lead network controller. "It relieved some tension."

The lengthened shift didn't seem to



*A transportable earth station used by CBS News mounted on the roof of the Intercontinental Hotel in Amman, Jordan.*

bother the staff either. "It was so busy and so hectic that no one had time to realize how long the shift lasted," Murray said.

"If everybody keeps their cool it can be a fun place to work," said Sweigart. "If one or two people get frazzled, things could fall apart," Murray said. "But everyone realized they were all trying for the same thing. They did a good job keeping cool."

After the first few days, things began to settle down a little, said Sweigart. Then, Iraq launched the first Scud missile at Israel. Not only did the controllers have to deal with requests from the Gulf, but from Israel as well.

Sweigart seems pleased with the performance of his staff. "We've had several broadcasters tell us they think we've done a good job. I'm proud of that bunch (the controllers). They did an excellent job."

WSD's Communications Center, also was involved in support of the NCC during this period of sharply increased demands for communication services. Between December and January, outbound facsimile traffic increased 28% and 71% respectively, while inbound faxes went up 26.5%. Telex traffic alone increased by 88.7% to a staggering 10,337 messages in that period.

# COMSAT MOBILE

## Inmarsat Awards GE Astrospace Contract For Third Generation Spacecraft

**I**nmarsat awarded GE Astrospace a \$350 million contract to produce four Inmarsat-3 spacecraft in February.

The satellite will use the latest spot-beam technology to provide voice and data communications service worldwide to ships, aircraft and vehicles and other mobile terminals some as small as pocket size.

The new satellites will feature higher power - more than 20 times the power of Inmarsat's first generation of satellites, and approximately eight times the power of the second generation - making it possible for users to communicate via smaller and less expensive mobile terminals, and possibly resulting in eventual decrease in user charges.

A launch vehicle has not yet been selected; however, the satellites could be compatible with a number of launchers.

Each spacecraft will provide a global beam and five spot beams. The power and bandwidth can be dynamically reallocated between antennas depending upon communications traffic requirements. As well as boosting the power and capacity of the satellites, the spot beams will allow reuse of the scarce frequency resources allocated for mobile satellite communications.

Inmarsat-3 will also be the first commercial satellite system to carry

navigation payloads and mobile-to-mobile links.

The navigation payload is a dedicated equipment package which will transmit signals in the same frequency band as, and virtually identical to those transmitted by the U.S. Global Positioning System (GPS) and Soviet Glonass Navigation Satellites.

Continuously updated and independently monitored status information will be incorporated within the navigation message to enable GPS-Glonass users to verify the integrity of the system's position determination capability. The facility will be particularly important for applications where extreme reliability is paramount, such as air traffic control.

In addition, users of either GPS or Glonass will receive more accurate position determination information and, in some instances will be able to determine their position even where there are coverage gaps in the current systems.

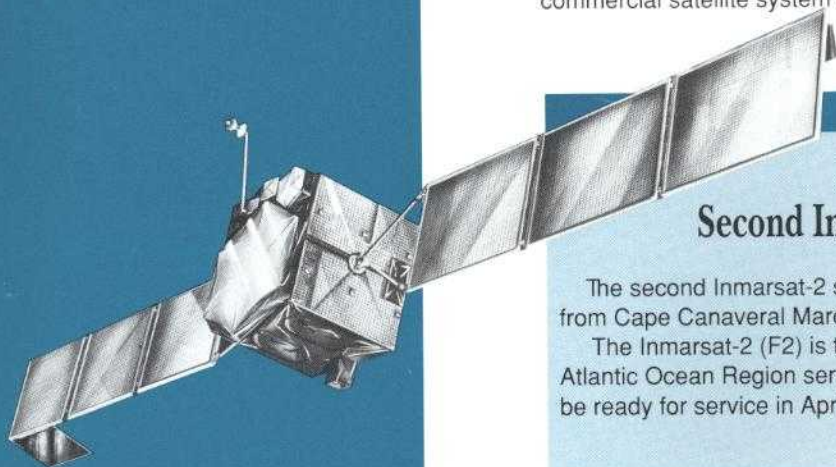
The mobile-to-mobile, or L-to-L band, package will provide a channel for direct communications, via the satellite, from one mobile to another. It is expected that this facility will be extremely useful for emergency land, air or sea search and rescue operations.

*The new satellites will feature higher power - more than 20 times the power of Inmarsat's first generation of satellites, and approximately eight times the power of the second generation - making it possible for users to communicate via smaller and less expensive mobile terminals, and possibly resulting in eventual decrease in user charges.*

### Second Inmarsat-2 Launch Successful

The second Inmarsat-2 second generation satellite was launched successfully from Cape Canaveral March 9 by a Delta II rocket.

The Inmarsat-2 (F2) is to be located at 15.5 degrees west longitude to provide Atlantic Ocean Region service. After in-orbit testing, the satellite is expected to be ready for service in April.



## Mobile Communications Sales Forces Face Varied Challenges

Since the launch of the first Marisat satellite in 1976, COMSAT has been a world leader in mobile satellite services - first in maritime, and now in international land mobile and aeronautical services.

In 1990, COMSAT Mobile Communications recorded a 30 percent increase in revenue. Much of this success can be attributed to the dedication of the sales and marketing staffs in Mobile Communications who routinely have to deal with customers with radically varied demands. Such is the case for COMSAT's Maritime Services which are targeted to three different markets: yachts and cruise ships; government vessels; and commercial shipping like transport and fishing fleets.

"We're a world-wide sales organization," says Ed Ryznar, vice president, maritime sales. The division has U.S. sales offices in northern New Jersey, Houston, and Seattle. An overseas office is in Brussels, Belgium.

"The division's overall philosophy is to have sales and marketing work closely together to increase the number of minutes of satellite time used by each individual ship," according to Ted O'Brien, vice president, maritime marketing and program management. In the cruise ship market this means that while sales efforts are focused on cruise line management, strong marketing programs are designed to appeal directly to passengers to increase business.

"Maritime marketing works closely with travel agents to make sure passengers are aware of ship-board phone services," said O'Brien. Included in the travel pack many cruise passengers receive is a coupon giving \$5 off any phone call to or from a cruise ship.

Another program targets radio audiences in the Midwest. COMSAT will help arrange for a local radio disk jockey to do a live remote broadcast from the cruise ship. "It's a win, win, win

situation. The cruise ships increase their business, the radio stations have an interesting gimmick to attract listeners, and we increase satellite usage," said Ryznar.

For cruise passengers who don't quite want to get away from it all, COMSAT helps install business centers aboard ship. These facilities combine fax, telex and personal computers for use by businessmen who like to stay in touch.

The commercial shipping market represents a different challenge. Since crews of commercial ships and fishing fleets are often far from port for many months at a time, they need less incentive to use satellite telephones to stay in touch with their families. "In this market we have to provide the best enhanced services possible," said Ryznar.

These include data services to handle payroll and personnel records, or keep spare parts inventories up to date. SeaMail, introduced last October in Boston, is one of these enhanced services. It lets mariners send and receive messages worldwide all the time. The service also gives access to a variety of marine-oriented information services such as news, ocean and weather maps, and navigation advisories.

International Land Mobile Services face a different set of challenges in the area of regulation according to Jim Pike, director, international mobile sales. Because of an FCC ruling, COMSAT is not licensed to market L-band land mobile communications services in the U.S. The American Mobile Satellite Corporation offers service exclusively in this field.

As a result, COMSAT's Land Mobile sales and marketing efforts are aimed at the international marketplace: government units operating overseas; foreign-based operations of U.S. companies; or foreign businesses. Land mobile satellite communications often is

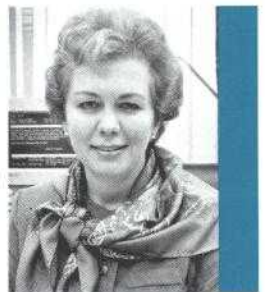
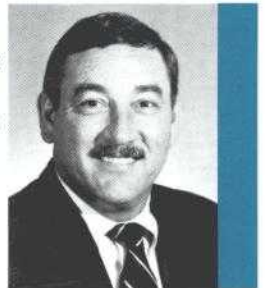
the only option to keep in touch with remote areas as was effectively demonstrated during the Persian Gulf Crisis. Other markets include situations where the public switched network has been destroyed by natural disaster or warfare.

Pike predicts a real boom in land mobile sales with the advent of the Inmarsat-C terminal "which will allow truly mobile communications." Inmarsat-C services will operate on the L-Band, and be more efficient than Ku-band mobile services now being offered. COMSAT will market these services under the name C-Link™. New services that will be available will include tracking, global positioning and data systems, security monitoring and data acquisition services.

In the latter case, Inmarsat-C equipment can tie into current monitoring equipment and help keep tabs on oil and natural gas pipelines, seismic readings, nuclear power plants, meteorological data and hundreds of other operations involving process controls.

The latest of the Mobile Communications services to come on board, and one which offers large growth potential, is Aeronautical Services. Describing this group's sales and marketing philosophy, Dr. Elizabeth Young, vice president, Aeronautical

*continued on page 8.*



*Liz Young, Vice President COMSAT Aeronautical Services and Ed Ryznar, Vice President, Maritime Sales.*

# FUTURE MARKETS

## Wussler Predicts 'Evolutionary Change' Ahead For TV Industry in Next Decade

The way Robert Wussler looks at it, the landscape of the television industry is slowly but surely being turned upside down.

"The pace of change in the 90's will be more rapid. You might be able to refer to it as the mid-90's revolution," says the President and CEO of COMSAT Video Enterprises, Inc.

Fueling these changes will be broad technical advances throughout the industry, and consumer demand for new and different services. Wussler outlined these changes in a speech he made to a special luncheon of the National Association of Television Arts and Sciences in New York in February.

Continuing to feel the pinch will be the broadcast networks says Wussler. "Prime time television audiences will continue to decline," perhaps to the 45 percent level said Wussler.

The change this has forced in programming is already apparent in the type of programming networks are offering. Low cost reality programming, already taking a larger share of network time, will continue to increase. "Networks are looking more like cable targeting specific audiences," said Wussler. Other changes will include running more re-runs and broadcasting more than one episode of a program on the same evening.

"One of the four networks will have to change radically," probably drastically cutting its staff and altering the type of programming it delivers. Wussler mentioned that while he was running the WTBS Superstation in Atlanta, his staff only numbered 225, while network staffs are many times that size.

The change in the networks will also force a change in their relationships with affiliates. "Network affiliation will mean less. Stations will buy programs from any source," Wussler said. Wussler cited the example of a few major network affiliates switching to CNN coverage of the start of the Gulf War instead of carrying network coverage.

Local independent broadcasters face extinction if they don't adjust to the new rules of the playing field. According to Wussler independent stations face the choice of developing specific programming (sports, news) or to "go dark."

The other industry faced with daunting changes is home video. Currently in the U.S. more households have VCRs than are connected to cable. Consolidation at the retail level in the industry will force "rental rates to increase. Instead of paying \$2-\$2.50 to rent a movie, it will rise to perhaps \$5-\$6," Wussler said.

The direct challenger to the home video market will be a combination of Direct Broadcast Satellite (DBS) services, and increased choices via Pay-Per-View (PPV). Wussler predicted there will be two players in the mid-power DBS with "10 million subscribers each by the end of the decade."

"Movie studios will use DBS to get into the home" a market that they were previously shut out from Wussler said. He said he foresees a day when movie studios will simultaneously open movies in theaters and in the home via DBS.

Although the U.S. cable industry will fight for restrictions on DBS, they eventually will abandon the domestic market and "take a dominant position on

foreign DBS services,"

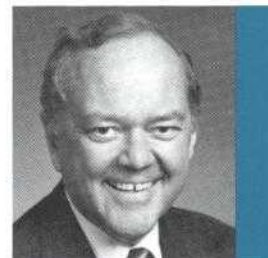
Wussler said.

Wussler also predicted the eventual migration of outer market sports programming to PPV by way of DBS. "Sports leagues have to go to PPV... If you are a Chicago Bears or Los Angeles Raiders fan" and you don't live in either of those cities, one will be able to buy their games "on a PPV basis by way of DBS."

Some sports programming will get a big boost from the advent of High Definition Television (HDTV). "It's going to remake soccer, football and hockey," said Wussler. "Demand will be at the high end" like the market for projection TV and expensive to start Wussler said. He predicted the first HDTV sets will cost around \$2,300.

Although some business will be hurt by these changes, none will completely disappear. "FM didn't knock out AM and TV didn't knock out radio. If you run your business well, you'll do well."

It seems the future of television lies with broadcasting specific programming to smaller audiences who are willing to pay for what they see. "The days of large audiences are gone forever," says Wussler.



**Robert J. Wussler,**  
President and CEO, COMSAT  
Video Enterprises, Inc.

### Who Will Be the Next 'Star Performer' at CVE ?

Recognizing top-flight performance has always been a top priority at COMSAT. That commitment is the inspiration behind CVE's new 'Star Performer' program.

Nominations can be made by any CVE employee. All non-vice president employees are eligible. A nomination can be made for either an individual or team effort. Nomination forms are available from the office of CVE Vice President and General Manager, Charlie Lyons.

A selection committee will choose winners every week. The committee may select more than one employee. Winning employee(s) will have the choice of a \$100 gift certificate from the W. Bell Catalog, or a donation can be made to a specified charity in the same amount. CVE will match all donations.

Prizes will be awarded annually to the top department and individual. The employee who is recognized most often will receive an all expenses paid, one-week stay at a resort.

## Deregulation, Advances in Technology Create Booming Global Marketplace Says Alper

"I've been in business over 30 years and there has never been a more exciting time than now," said COMSAT Systems Division President Joel Alper at the Satellite X Conference in February here in Washington.

Great strides in satellite technology and information processing, linked with burgeoning business opportunities overseas are what has Alper so optimistic.

"The advances in telecommunications technology combined with increases in computer power have combined to drive down the cost of information movement and management. Information is critical to our business environment," said Alper.

What may be even more important is the dropping of trade barriers around the world. Although the creation of a European Common Market in 1992 has grabbed most of the attention, the trend of market liberalization has spread worldwide.

A unified North American market of the U.S., Canada and Mexico would be larger than the EC, while special trade agreements between the U.S., Eastern Europe and the Soviet Union open up even more intriguing possibilities.

"The political events in Eastern Europe and the Soviet Union have knocked down the last substantial barriers to commercial opportunities," Alper said. "The blanket on information and information flow over the decades has crippled the telecom infrastructure in this region."

"This is one of the most serious barriers to the transition from centrally-planned to a market economy. The desire to upgrade the telecommunications infrastructure is strong throughout the region."

The desire to quickly upgrade communication facilities gives satellite-based communications a leg up on the competition according to Alper.

"Satellite-based communications are quick to implement, and low in cost. Access to in-orbit facilities means that the big investment is already made in the satellite system. Major cities can establish links quickly, terrestrial systems follow over time."

Alper cited COMSAT's planned joint venture with Radisson Hotels, Americom International, and the Soviet Ministry of Foreign Tourism, Intourist, as an example of the expanding opportunities in this area. The joint venture is equipping the first American-managed hotel and business center in Moscow with highly sophisticated telecommunications systems and services equal to Western standards.

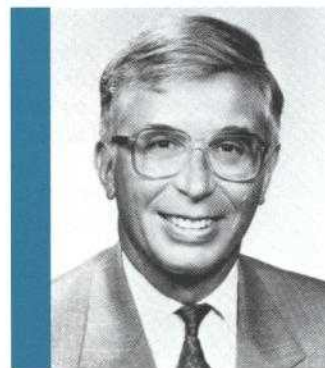
Voice, data, fax, teleconferencing and in-room entertainment will make the complex a world-class business center. Intourist owns the center, and leases it back to the joint venture.

The trend toward privatization has spread to developing countries as well. Privatization has taken a strong root in Latin America where the operations of public telephone companies in both Argentina and Mexico have been turned over to private companies from overseas.

CSD, through its COMSAT International Ventures (CIV) unit, has a strong base in Latin America as well with joint ventures in Chile and Argentina.

SATEL, a joint venture with ENTEL/Chile, offered the first IBS gateway out of Latin America. SATELITAL, a joint venture with IATA/ALCATEL offers domestic private line services via digital satellite links.

"All the ventures are competitive, require investment, and boast currency convertibility," said Alper. Although the ventures are on a small scale now, the potential is substantial. "Remember, on the formation of INTELSAT, forecasts



Joel Alper, President, COMSAT Systems Division

said that eventually 25 antennas would saturate the marketplace. Today, over 1,500 earth stations have been approved, with 650 in operation," Alper said.

Alper had more than a few helpful tips on how to do business overseas. "Condition yourself for long term rewards, there's no quick score. If that's what you want, go to Atlantic City." That's the road COMSAT took with the Moscow Business Center venture. That deal grew out of work done by COMSAT two years before installing a seismic data gathering and distribution network for the Soviet Academy of Sciences.

Personal relationships count for a lot in penetrating foreign markets. "Personal contacts build relationships, and relationships generate mutual trust - an essential ingredient for doing business in many, if not all, of these areas," Alper said.

"There are enormous opportunities abroad, but not for the faint-hearted or for people looking for a fast return," says Alper. "It's a long way to Moscow, Prague, Ankara, Sidney and Santiago. Success will take stamina and an iron stomach."

## Jefferson Picks Science Fair Winners, Readies For District-Wide Competition

**W**ith Science and Math education taking top priority at Jefferson Junior High, it is no wonder the annual science fair has become such an important event.

Students begin work on projects when they start school in the Fall and don't stop till the Fair begins every year in mid-February.

Even COMSAT was able to get into the act, with scientists from COMSAT Labs helping out students with their projects. Thanks go to Dr. Rene Bonetti, Dr. Dick Arndt, Dr. Dilip Paul, Andrew Meulenberg and Jeff Opiekun for offering their time and expertise to Jefferson students who needed their help. Extra thanks go to Arndt and Opiekun for coming down from Clarksburg to help judge the event.

"I've never seen a group of students so happy," said Jefferson Science Teacher Diane Brown of the children once they've completed their projects. She says her job is especially rewarding when she sees the results from students who normally don't do well in school.

"The use of computers more than enhanced" the quality of the projects says Brown. They also seemed to encourage students to do their work. "They (students) like the computers. It is a fight to see who gets the chance to work on them."

Last month 20 students got the chance to see how they stacked up against other students in Washington when they went to the District-wide Science Fair.

*"The use of computers more than enhanced" the quality of the projects says Brown.*  
*"They (students) like the computers. It is a fight to see who gets the chance to work on them."*



## Jefferson Science Fair Winners

Name	Category
Courtnei Brown	Biochemistry
Thomas March	Mathematics
Yolanda Coleman	Social Science
Yuen Chow	Computers
Neima Alvarez	Physics (tie)
Ismael Alvarez	
Stuart Washington	Engineering
Xiao-Ri	Earth/Space
John Turner	Chemistry (tie)
Sheri Hawze	
La Tisha McDuffie	Medicine
Mardi Pinkney	Microbiology
Marguax Hall	Environmental Science
Krishna Rampersand	(tie)
Jina Johnson	
Russell Brown	Botany
Stephanie McDain	Zoology

## Injured Jefferson Student Needs Your Cards and Letters

In some ways Akil Johnson is a typical 12-year old boy. "He's a bubbly, happy-go-lucky kid," says Jefferson Junior High Assistant Principal Debbie Holmes.

In others he's quite exceptional. He's active in school, and has been a regular member of the honor roll in his first year at Jefferson.

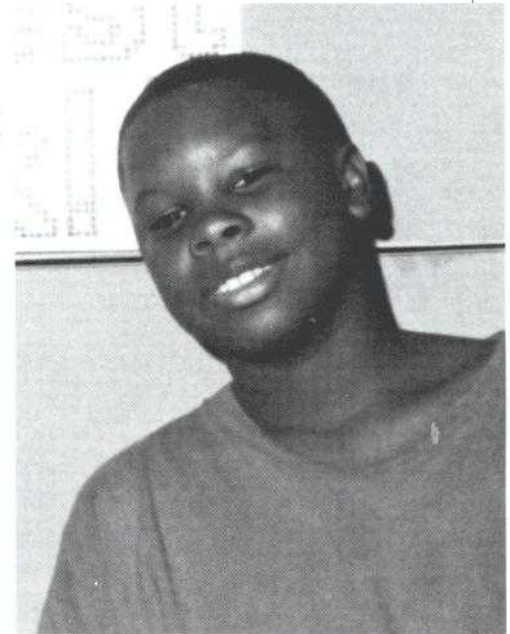
This past Christmas vacation, however, Akil almost became another statistic. While playing at another boy's house, the two found a loaded handgun. The two fascinated youngsters began playing with the gun, and it accidentally fired. The bullet struck Akil in the skull.

Akil was rushed to Children's Hospital, where hours of surgery succeeded in removing many of the bullet's fragments. Akil's fight to stay alive wasn't over though.

As part of the treatment to speed his recovery, doctors at Children's were forced to induce a life-saving coma. The young man only rose from it recently, and the results have been amazing.

Not only does Akil remember the incident, but the first thing he asked for after waking was materials to complete his science project said Holmes. Teachers at Jefferson had planned to send a teacher to work with Akil while he recovered. That won't be possible since he's been transferred to a rehabilitation hospital in Delaware.

The road to recovery is bright, but long. Akil could certainly use our support. If you'd like to send letters and get-well cards to Akil, send them to Corporate Communications (Room 8218) at L'Enfant Plaza and we'll be sure to send them along.



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## Dr. Joseph Charyk, Former Chairman, Inducted Into SSPI Hall of Fame

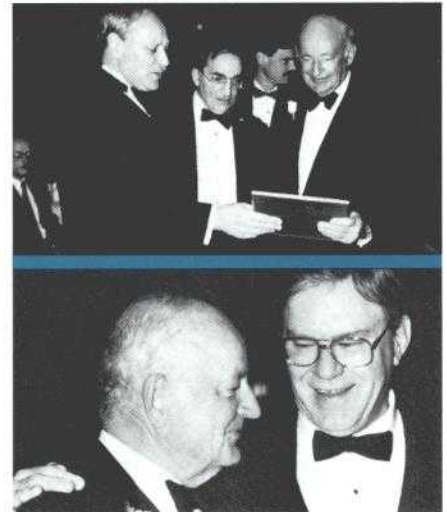
When Joseph V. Charyk was presented the Society of Satellite Professionals International (SSPI) Hall of Fame Award it simply confirmed what many at COMSAT and throughout the satellite communications industry already knew: without Dr. Charyk the satellite communications industry as we know it might never have existed.

Dr. Charyk, a former Chairman, CEO and President of COMSAT and a sitting director who has served on the board of directors since COMSAT's creation, was presented with the award February 13 at a black-tie dinner at the Ramada Renaissance Techworld Hotel. The dinner was part of the Satellite X Conference.

The Award was created in 1987 by SSPI to honor the men and women whose contributions have created and furthered the satellite industry.



*Above, Charyk is escorted back to his table by SSPI Chair Polly Rash after receiving the award. Above right, Dr. Charyk receives congratulations from COMSAT Chairman and*



*CEO Irving Goldstein, Vice President and Secretary Jerome W. Breslow and Vice President Corporate Affairs Richard L. McGraw.*

**MOBILE SALES & MARKETING** continued from page 3.

Services said, "We provide expert advice and assistance. We won't sell the customer something they don't need."

"There is a relatively small number of customers operating large fleets of aircraft. Personal contacts are very important. Getting a plane in the air equipped with satellite communications equipment takes a lot of coordination. It's a young market, a great deal of education is required. Much of our philosophy is to educate, it's not a hard sell," said Young.

In the commercial aviation sector, COMSAT is able to call upon contacts it has developed while working with its first customer, ARINC, the airline-owned consortium created to provide cockpit communications. COMSAT will

also benefit from working closely with GTE Airfone, now that the two have made arrangements to extend the reach of the GTE service globally.

The private jet market represents a different challenge. "There are approximately 1500 private aircraft worldwide, with only 500-600 in the U.S. flying international routes," said Young. In this market, COMSAT can take advantage of its membership in the National Business Aircraft Association. The association holds an annual convention where "virtually all potential users" are in attendance.

Other crucial industry contacts are airframe manufacturers and retrofitters. Contacts with companies like Gulfstream and British Aerospace, help COMSAT discover who's ordering

satellite equipment. Staying in touch with aircraft completion centers, COMSAT keeps them briefed on the details on installing satellite equipment and new service offerings.

In the government sector, good contacts have been made as well. This market, especially the Department of Defense (DoD), is a market that should experience a good deal of growth. "The DoD has requirements that are not being served by the current system. They don't have enough capacity to serve all their needs," said Young.

Developing new services like these has helped keep COMSAT on top in the mobile satellite business. Continued dedication to fully exploit existing markets, and developing new applications for existing technologies will keep it that way.