Former FCC member will deliver keynote at ACUTA conference

A Washington attorney who is a former Federal Communications Commissioner, former Trustee of Boston College and sits on the Motorola Inc. board of directors, will deliver the keynote address at ACUTA's 20th annual conference in St. Louis, July 8.

Anne P. Jones, who served on the FCC from 1979-1983, is a partner in the firm of Sutherland, Asbill & Brennan. She also serves on the corporate boards of C-COR Electronics and IDS Mutual Funds Group.

A Boston College Trustee for eight years – 1977-85, she served four years on the board's Executive Committee and remains a Trustee Associate.

She was graduated (1958) Magna Cum Laude and received her law degree (1961) Cum Laude, all from Boston College. The BC Alumni Association gave her its top honor for excellence in public service in 1978, and the law school presented her its 50th Anniversary Award in 1980.

Ms. Jones specializes in telecommunications and financial institution law and has served as (Please turn to page 2)

1-O-XXX-0 can be unblocked quickly, without undue expense or risk of fraud, AT&T claims

"Technology exists today to unblock the 1-O-XXX-0+ dialing sequence quickly and without an increase in fraud," AT&T has asserted in comments to the Federal Communications Commission.

Every consumer and consumer group as well as every public regulatory body to comment on the issue has endorsed 1-O-XXX-0+ because it is the "simplest, most efficient" method for consumers to reach their preferred operator services provider, the telecommunications giant noted.

The commission is considering requiring public phones to offer 1-O-XXX-0+ access, requiring all operator service providers to have their own 800 or 950 access number, or both, to fulfill the "equal access" mandate of the Telephone Operator Consumer Services Improvement Act of 1990.

"Unblocking of 1-O-XXX-0+ can be accomplished within five months at a total cost of $35 million," AT&T maintained. "As such, the Commission should require that all aggregator locations unblock the 1-O-XXX-0+ sequence no later than Dec. 31, 1991.

If technical problems do exist, the FCC has suggested that implementation of 1-O-XXX-0+ access be delayed for three years so aggregators may upgrade or replace their equipment. (The three year countdown began Jan. 15, 1991, when the Act took effect.)

"Because 1-O-XXX-0+ can be unblocked by the end of 1991 and because LEC operator transfer services can accommodate non-equal access end offices, there is (Please turn to page 4)
Conference Highlight session to focus on fraud prevention

The cost of telephone fraud in North America, by mosts estimates, exceeds $2 billion. But those who study the problem surmise that only 20 percent of fraud is detected and then reported to the authorities.

At the Highlight Session of the ACUTA Conference July 8, experts from the three major U.S. long-distance carriers – AT&T, US Sprint and MCI – and the Communications Fraud Control Association will look at the scope and variety of PBX fraud and how to combat it.

The session will focus on:
- How to prevent voice mailbox fraud.
- How to prevent PBX fraud.
- How to protect your system from illegal “call -sell” operators
- The legal remedies available to universities that find themselves the victims of fraud.

The panel of experts will include:
- Patrick McDonough – AT&T
- Bruce Wells – MCI
- Loren Procter – US Sprint, and
- Ramz Abuhamdeh – Exec. Director of CFCA.

The Highlight Session – “Security Fraud and Toll Abuse” – will begin at 10:30 a.m. Monday, July 8, the opening morning of the conference, just after the keynote address by former FCC Commissioner Anne P. Jones.

Former FCC member to deliver conference keynote address

(Continued from page 1)

As part of her speech, Ms. Jones will discuss many of the most controversial and important federal telecommunication issues affecting ACUTA members, including future regulation of AT&T (including Tarriff 12 and 15 issues), operator services, regulation of local exchange services and the continuing development of large, nation-wide private line networks, including government-sponsored telecommunications “super highways.”

“We are fortunate to have someone with so much experience in telecommunications law, higher education administration and the information technology business,” said ACUTA Executive Director Del Combs. “The changing regulatory environment and accelerating advances in technology have an ever increasing impact on telecommunications in higher education.”

College business management institute set for July 28 - Aug. 2

The 39th Annual College Business Management Institute, sponsored by the Southern Association of College and University Business Officers and the University of Kentucky, will be held in Lexington, KY, July 28-Aug. 2. For more information, contact: CBMI, Univ. of Kentucky, 204 Frazer Hall, Lexington, KY 40506-0031. phone (606) 257-3929.
MESSAGE
FROM
THE PRESIDENT

F. William Orrick,
Washington University
in St. Louis

Our 20th Annual Conference is just around the corner. But if you haven’t yet registered, you still have time to do so.

Come join us for a great program at a great hotel in a great town. Not that I’m prejudiced. I’ve only lived here all my life.

It’s a nice town with its own appeal among the attractions are: the famous “Gateway Arch,” Busch Stadium, Lacledes Landing, Historic St. Charles, Union Station, Six Flags Over Mid-America, Forest Park with its Zoo, Art Museum and “Jewell Box” plus Shaw Park with its Botanical Gardens. If you run out of things on this list, just see me.

The program has come together well and will provide attendees with the usual broad breadth of subjects that rule our lives, day in and day out. Our Keynote speaker, former Federal Communications Anne P. Jones, and the panel of experts from the major long distance carriers for the Highlight session on fraud prevention should have comments that are both timely and authoritative.

Also this year, you will find that we have attempted to identify sessions as “beginning,” “intermediate” and “advanced.” I say “attempted,” because what may be “intermediate” for some might be “advanced” for others.

If we find these ratings to be helpful, we will continue to refine the definitions and use them at future conferences.

This year we want as many members as possible to be involved as moderators or monitors of conference sessions. We have begun by asking State and Province Coordinators to serve and recruit others. With approximately 34 breakout sessions to be worked, we hope to have 68 of you involved. Look at your pre-conference brochure and decide which session you would like to work.

Then call your state coordinator or Bill Robinson at the ACUTA office - (606) 252-2882 – and volunteer.

At this writing, preparations are underway for our first board meeting outside of our quarterly events. We will convene at the end of the first week in June in Lexington, KY, to give our entire board a chance to visit the headquarters office.

A skywalk connects the Radisson Hotel, where we will be meeting, to the Lexington Financial Center, where the ACUTA office is housed. The Lexington Radisson will be the site of our Spring 1992 Seminar.

Among the items on the agenda will be recommendations for enhancements to membership services, stemming from your responses to the Membership Survey.

Discussion and preparations for the annual association business meeting in St. Louis also will be a highlight of the board meeting.

The formal call for nominations was published in last month’s issue of the ACUTA News, but this is a reminder that you still have until June 17 to submit nominations for Vice President, Treasurer and Secretary.

You should have all received your membership renewal notices by now. Hopefully, we will see a retention rate of 100 percent. If for some reason you are not renewing, I would appeal to you to contact your Regional Director, the headquarters office or myself. We would be most interested in understanding where we might be falling short.

Again, I hope to see you all in St. Louis. 

ACUTA Calendar

- 20th Annual Conference •
  St. Louis, MO
  July 7-11, 1991
  HOTEL: The Adams Mark
  TOPIC: Management, Regulatory Issues, Professional Growth, Voice, Data and Video

- Fall Seminar •
  Denver, CO
  Sept. 15-18, 1991
  HOTEL: Hyatt Denver
  TOPIC: Student Services

- Winter Seminar •
  Tucson, AZ
  Jan. 9-11, 1992
  HOTEL: The Westin La Paloma
  TOPIC: To be announced

- Spring Seminar •
  Lexington, KY
  April 26-29, 1992
  HOTEL: Radisson Plaza
  TOPIC: To be announced
AT&T for unblocking

(Continued from page 1)

no need for the Commission to require OSPs to use 800 or 950 access," AT&T said in a summary of its comments.

Consumer interest groups concur, AT&T continued, that "Call blocking artificially curtails customer choice.

"Only through the unblocking of the 1-0-XXX-0+ dialing sequence can the objectives of the (act) be satisfied," the company agreed.

Commentators who have opposed unblocking benefit financially from the practice, AT&T pointed out. And they continue to support proposals "which thwart end user choice and disadvantage competitors."

Those who stand to profit from call blocking continue to make the same "baseless claims that unblocking is technically impossible, cost prohibitive or would lead to significant increases in fraud."

AT&T did admit that the 1-0-XXX-0+ dialing sequence cannot be used in non-equal access end offices. But it added that in 1992, "less than two percent of all aggregator lines will be served by end offices of this type."

"Expensive equipment replacement and retro-fitting is unnecessary," the company maintained. With a "combination of central office features and/or inexpensive ancillary toll restrictors, the unblocking of aggregator locations can easily be accomplished.

"This has been proven by AT&T in field tests conducted at aggregator locations and through the unblocking of 30,000 of its pay phones. Nothing contained in all the comments filed by aggregators and AOS companies contradicts these facts."

"All LEC equal access end offices today are able to provide the necessary blocking and screening capabilities," AT&T argued. And "toll restrictors are available to permit the unblocking of aggregator locations quickly, inexpensively and without the risks of increased fraud."

Toll fraud actually decreased when AT&T unblocked its public telephones, the company pointed out. AT&T said it had recently developed a feature for use at LEC central offices to suppress reoriginated or second dial tone, a potential avenue for fraudulent calling.

"If an aggregator:
• Orders appropriate originating line screening (OLS) and 1-O-XXX-1+ blocking from an LEC
• Monitors its phones to ensure that these features are in service
• Periodically monitors its equipment to ensure that these features continued to function,
• then the aggregator would not be responsible for fraudulent calls which originate from its telephones," AT&T argued.

More than 35 states have ordered unblocking of the 1-0-XXX-0+ dialing sequence, and a number of aggregator telephones already have been unblocked," the company added.

The regulatory commissions of Texas, New York, Arizona and New Jersey, after conducting "extensive analysis," have concluded that 1-0-XXX-0+ unblocking is "both feasible and essential," AT&T pointed out.

FCC asked to assign bandwidth for interactive video

The Federal Communications Commission has proposed re-assigning 500 MHz of bandwidth for a service that would provide interactive video to viewers in their homes.

Interactive Video Data Service (IVDS), as the system is known, would feature user friendly, real-time interaction with broadcasts, including educational programming.

IVDS, being developed by a firm called Answer TV Inc., would permit real-time viewer responses for ordering pay-per-view programs, playing interactive video games, conducting financial transactions, responding to viewer pools and ordering merchandise.

It would also offer "exciting possibilities" for public TV and educational applications, according to a review by the law firm of Dow, Lohnes & Albertson.

Educational applications of IVDS could allow viewers to download educational materials, respond to instructors' questions, respond to pledge drives and order program materials.

The educational telecommunications community as well as public TV should support the reserving of bandwidth for interactive broadcast video, the study, commissioned by the American Council on Education, recommended.

IVDS could be carried by any video delivery service - broadcast TV, ITFS, cable and satellite, according to the study.

The bandwidth proposed for IVDS would come from the 216-220 MHz spectrum currently allocated to Automated Maritime Telecommunications. To avoid interference with nearby TV channel 13, however, no licenses have been issued for this frequency.

The report also encouraged the education community to urge the adoption of rules that would "guarantee access to IVDS at affordable rates."

The regulators might require commercial IVDS licensees to accommodate educational users in some manner, such as a priority for noncommercial use of a certain amount of system capacity at discounted rates. Or, the FCC might allocate an additional 250 kHz in the same band for an IVDS system limited to noncommercial educational applications. The commission has invited comments on this possibility.

The deadline for comments on this issue (Gen. Docket No. 91-2) is June 10 with the deadline for reply comments July 10.

Direct comments to: Office of the Secretary, Federal Communications Commission, 1919 M Street, NW, Washington, DC 20554.
Under the Operator Consumer Services Improvement Act of 1990, aggregators, including university resellers of interstate long distance service, are required to:

- Post on or near the telephone instrument, in plain view of operators:
  - The name, address and toll-free telephone number of the provider of operator services;
  - A written disclosure that the rates for all operator-assisted calls are available on request, and that consumers have a right to obtain access to the interstate common carrier of their choice and may contact their preferred interstate common carriers for information on accessing that carrier's service using that telephone, and
  - The name and address of the Enforcement Division, Common Carrier Bureau of the Commission (Washington, DC 20554), to which the consumer may direct complaints regarding operator services;

- Ensure that each of its telephones presubscribed to a provider of operator services allows the consumer to use "800" and "950" access code numbers to obtain access to the provider of operator services desired by the consumer, and

- Ensure that no charge by the aggregator to the consumer for using an "800" or "950" access code number, or any other access code number, is greater than the amount the aggregator charges for calls placed using the presubscribed provider of operator services.

ACUTA has relayed several requests from members for clarification to the FCC's Enforcement Division and has received some tentative responses.

- Even if student users must purchase their own phone sets, if the university charges them for access to the campus phone system, then the university is an aggregator.

The FCC has published that:

- "Each entity that exercises control over telephone equipment, whether through ownership of the equipment, control of access to the equipment or some other means, will be responsible as an 'aggregator' under the Act" and the FCC rules.

- There are no models for the posting of consumer access rights, according to an FCC official who agreed to make informal replies to the ACUTA inquiries. "Our main concern is for all the required information to be contained in the notices. These should be posted "on or near" the phones, as the Act specifies. In cases where the university does not supply phone sets, the postings should be in a noticeable position in the vicinity of the phone. "If the phone jack is near eye level, placing the notice near the jack would be acceptable," he said. "But if the jack is on the floor or base board, a notice placed there would not be very visible."

- Long distance calls which require a personal identification number or authorizing code are "operator assisted calls," as the Act defines them. The Act does not distinguish between "live" or mechanical operators.

- Also, neither aggregators or operator service providers may charge customers for unanswered calls.

- Any system which resells long distance service must allow customers "800" or "950" dialing access to the carrier or operator service provider of their choice. The only possible exception would be systems that make no long distance service available.

- Since the Act and the FCC rules focus on interstate calling access, a system that allows only local exchange calls, apparently, may block calls to local exchange operators, the FCC official said. He pointed out, however, that this question is not addressed by the Act, and other rules may govern in this case.

An FCC decision on whether to require aggregators to provide 1-O-XXX-O+ access, as the Act and the FCC seem to favor - is still pending, but should be made by early summer. (See story on page one.)

Workshop set for Oct. 23-25

ACUTA's introductory telecommunications workshop, "Understanding Telecommunications," will be offered Oct. 23-25 in Atlanta, GA. For information, contact Lisa McLemore, Lexington Financial Center, Suite 2420, Lexington, KY 40507. Phone (606) 252-2882.
Telex: An old technology that still has uses

By Joseph P. Mantione
Director, Northeast, Region 1
SUNY/Buffalo

Telex suffers from a kind of national technological arrogance that assumes whenever a technology replaces an older one in this country it is also implemented throughout the world. The telegraph, for example, is thought by many Americans to be an out-dated "relic" of the technological past.

Television technology, however, has an illustrious history, one that made it a truly global communications network. The term AT&T, American Telephone and Telegraph, attests to this.

Any person, department or company that hopes to conduct business successfully on the global market must be able to utilize this "older" technology. Its relative age has given it stability, reliability and global acceptance.

The Telecommunications Office at SUNY Buffalo can assist members of the campus community in accessing the value of telegraph services via computer link with Western Union. In addition to telegraph (Telex), Western Union also has numerous other services that you may find useful.

When most people think of Western Union, two visions come to mind. One is that of an isolated town in the old West nervously awaiting news 'over the wires' of the arrival of Billy the Kid. The other is that of the quaint grandmother phoning for bail money as a seven foot tall highway patrolman in smoked sun glasses looks on.

Both images are myth, one popularized by the movies, the other a TV commercial paid for by Western Union to replace the old myth. Additionally the notion that Telex was developed in the United States as an automation of Morse code telegraphy is also myth.

The popular conception that printing telegraphy was a later evolution of the manual (or Morse telegraph) system is another myth. Early 19th century entrepreneurs tried many ways to perfect paper-recording telegraph apparatus. The mechanical technology was complex, however, and the science of electrical signal transmission remained to be developed. That forced the large scale growth of printing telegraphy to wait many years.

In 1846, (only two years after the highly publicized demonstrations of Samuel F. B. Morse) a printing telegraph, similar in size and appearance to a small piano was developed by Royal E. House. The House printer was licensed to the New York and Mississippi Valley Printing Telegraph Company, which operated a 550-mile network. Altogether, the lines of about 50 other telegraph firms, crisscrossed the Eastern U.S.

Before there were interconnecting lines, a simple telegraph could cost $20 or more to send, with a new charge added by each company that handled it. The New York and Mississippi company set out to establish a unified nationwide network, and in five years of its 1851 inception, the company acquired 11 other networks in states north of the Ohio River. An extension ran west to Missouri, the eastern terminus of the fabled Pony Express.

Expanding national business and westward development were spurred on by this exciting new speed of communication. Each helped to push and pull each other forward.

All this rapid growth made the orderly use of the House printer impractical, and the Western Union Company, like others, grew on the talent of manual, Morse code telegraphers.

Development of telegraphy continued during the Civil War as the 10-day delivery time of the Pony Express from Missouri to California proved too slow and risky. A transcontinental telegraph line was considered in the best interests of the Union. Telecommunications pioneers completed the project in four months - a project that engineers had predicted would take 10 years. The era of a telegraph operator in every town was a reality by 1865 and would last until the 1920s.

Telex, in the sense of a 20th-century communication network, was largely a European technology commonly credited to German development before World War II. During that period, the United States had a number of competing "telegraph companies" with overlapping, nationwide and worldwide networks. None of these firms had the market, incentive, or capital to establish Telex, in the European sense, in North America.

In that era AT&T developed its Teletypewriter Exchange (TWX) service, operating at speeds incompatible with European systems. Federal action in 1940 sought to unify all domestic record communications under the monopoly umbrella of Western Union. WU agreed to withdraw from the international market in favor of a number of other companies that, in turn, withdrew from domestic operations to become "international record carriers" (IRCs).

These IRCs exchanged traffic with Western Union in a designated "gateway" cities. World War II prevented the monopsony from establishing Telex in the United States until 1957, and in 1962 Western Union purchased TWX from AT&T. Western Union then introduced its Infomaster service interconnecting Telex and TWX domestically. The company rapidly added interchange between other services such as public message telegraph and Mailgram services.

This might be considered the beginning of value-added, computer-based services, and Infomaster today has grown to provide a wide range of connectivity and information-based offerings.

Telex and TWX, with their long history, retain some limitations of their past in order to maintain compatibility with terminal equipment printers already installed in more than 220 countries. About 200,000 such terminals exist in the U.S. alone with more than two million worldwide.

These constraints include the variety of usable characters, the number of characters per line and the number of words per page. Error rates are low considering the low transmission rate. The longer the time on the circuit, however, the higher the chance for error.

Finally, Telex is indeed the transmission medium of international business and government. In troubled areas of the world Telex becomes a precious asset.

Telex transmissions are limited to the 26 alphabet letters, numerals, and punctuation marks. When transmitting from a computer with the 128-character ASCII set, common carriers will generally covert transmissions using a set of general conventions:

- There is no case distinction. Some nations use all upper case, while others all lower. Whatever is sent out-

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Penn State continues to pioneer in distance learning

(Editors Note: This article is taken from an address by Dr. Richard E. Grubb, Senior Vice President and Dean of Pennsylvania's Commonwealth Education System, to the Telecon X conference in San Jose, California, Nov. 5.)

At Penn State distance learning has a broad meaning. Even on-campus courses can become distance education experiences as we try to serve 70,000 students at 23 campuses across a state 400 miles wide and 200 miles from top to bottom.

In this effort we use satellites, compressed video, computers, broadcast and cable television, even plain old telephones.

Off-campus distance education has a long and active history at Penn State, starting in 1886 with a series of correspondence courses on drafting, going to radio-based nature education courses in 1924 and culminating in present-day technologies that reach some 80,000 students of all ages each year.

Penn State is also home of the American Center for the Study of Distance Education and the American Journal of Distance Education.

A main reason for the success of distance education at Penn State is the integration of media-based courses into the academic mainstream of the university. The faculties of each department are responsible for all instruction, regardless of medium and location. The University Division of Media and Learning Resources facilitates the offering of courses through media.

As the land grant institution for Pennsylvania, Penn State has teaching, research and public service responsibilities throughout the commonwealth. To fulfill these responsibilities, we have developed a system of 23 conveniently located campuses. Headquarters is the University Park campus in the center of the state.

We see ourselves as "one university geographically dispersed." Faculty of the total university are represented in single faculty senate with responsibilities for the complete academic program of the institution. Every faculty member belongs to a department based at University Park.

Admissions, record keeping, housing and food services, library services, computer services and other academic and administrative services are, for the most part, centrally planned and administered.

This geographic dispersion creates unique communications problems.

Resident education at Penn State can become distance education when central faculty are called upon to teach at one or more of the university's 22 other campuses across Pennsylvania. Working in close cooperation with Media and Learning Resources, the Office of Telecommunications provides electronic highways for voice, data and video that enable classes to be taught at other campuses without faculty leaving the central campus.

One such highway is compressed video.

Penn State has a long history in the use of television for instruction dating back to 1952 when the first closed circuit cable television system for higher education was built on our main campus. In 1986 we became the first university to use compressed video for instruction, using half of a digital T-1 data link.

Compressed video is an affordable way of extending video instruction to the university's 22 other locations, much more affordable than the experimental 100-mile two-way microwave system that existed between University Park and Capital College near Harrisburg from 1968 to 1970.

That demonstration was discontinued after two years because it was not regarded as cost effective. Today, our compressed video requires 1/480 of the bandwidth of that project, substantially reducing costs.

In January 1986, the first two-way interactive compressed video class was conducted between University Park and Penn State's Behrend College in Erie, Pennsylvania - almost 200 miles away. It was a simple one-credit course on careers in agri-business that used the system about four hours a month. This semester, the system is being used more than 40 hours a month for credit courses and administrative meetings.

In the spring of 1988, a second T-1 span was installed between University Park and the Penn State Hershey Medical Center 100 miles away. Usage has grown to 40 hours this semester, with courses in bio-engineering, nursing, individual and family studies and food service.

Physicians from Hershey teach in genetics, biotechnology and other departments at University Park, while professors from University Park teach medical students at Hershey. Given the high professional costs, the travel time saved contributes significantly to cost justification.

Next spring, we will be activating a link to our upper level and graduate campus near Harrisburg, the state capital. An even more ambitious schedule is planned for next spring with eight three and four credit courses. Some will originate at the Capital campus for students at University Park or Behrend College in Erie.

Students, faculty and administrative staff who have used the compressed video system have adapted to it very

(Please turn to page 8)
Penn State

(Continued from page 7)

naturally without much preliminary training. Full, two-way capability make teleconferencing seem more like a typical face-to-face class session.

Penn State was a beta test site for the new desktop video units from Compression Labs that can be used for smaller conferences involving up to three or four people at each location. A camera and microphone are built into the monitor's housing. The video display can also function as a computer monitor, and the desktop workstation can exchange computer data between sites. These offer a great deal of promise for the future when digital dial-up lines, such as the new ISDN telephone network, are available for service to the smaller campuses where T-1 lines would be too costly.

Desktop units have already become operational for the Career Development and Placement Service, which coordinates almost 30,000 corporate recruitment interviews each year. Graduating seniors at Behrend College and Capital College have been forced to drive to interviews hours away at University Park and to risk uncertain weather conditions during the winter months. Today, students at Behrend College can interview one-on-one with recruiters at University Park, thus saving time and stress. Both students and the interviewers have been favorably impressed. Plans are underway to make the interview system available at Capital College as soon as the T-1 link is fully operational.

Users are not being asked, at this point, to pay for use of T-1 and codec equipment. Central funds help subsidize new, but strategically important services until they mature. Then they will be charged back to users, like telephone service is today.

To complement the compressed video system and deliver courses to multiple sites, a satellite uplink on the Telecommunications Building can communicate with downlinks at all 23 campus locations and selected Continuing Education centers. Full-time audio feedback is provided through a telephone "meet-me" bridge in State College. Questions are led back into the satellite audio so all sites can hear.

We have averaged more than 1,000 enrollments each semester in courses as widely diverse as nutrition, science and technology in society, exercise science, and the arts. During fall semester, more than 1,000 students are enrolled at various campus locations for courses in anthropology, communications and acoustics.

Penn State has one of the leading acoustics programs in the world. Satellite delivery allows us to share that resource more broadly. A graduate-level acoustics course is being taught to classes of naval researchers near Seattle, San Diego and Philadelphia.

Also during fall semester, we began using the satellite system for a monthly academic conference between the Office of the Associate Dean of the College of Health and Human Development and the Directors of Academic Affairs at the Commonwealth campuses.

The Employee Benefits Office is using the satellite system to provide information to staff members at all locations about changes in the university's health benefits. We are moving over a period of years from a low employee contribution to one that will reach 20 percent of the costs.

Student Programs and Services is using it to coordinate programs at the campuses. Students at each location participated via satellite and conference phones to develop the agenda for a University-wide meeting this year.

Our Behrend College has an exemplary speakers program which we share with other campuses by combining the compressed video link from Erie with the satellite network.

We also use the satellite uplink to feed specialized programs to other users. We contract with the National Technological University to present some courses and programs. We provide noncredit courses to the National University Teleconferencing Network.

For the cable industry, we are conducting several conferences by satellite. Penn State is joining the University of Denver and the University of Colorado to present a conference in association with the Women in Cable organization.

Penn State has also pioneered in reaching people in their homes, most recently by using cable television as a delivery medium. PENNARAMA, Pennsylvania's Distance Education System, is a joint effort by the university and a non-profit corporation founded by Pennsylvania cable operators so cable customers can subscribe to higher education services. In 12 years, the system has grown to more than 800,000 subscribers. Credit and credit-free courses are transmitted 24 hours a day.

With other technology, we operate TIPS, Information Penn State, which has online more than 400 voice messages about university academic and administrative life, the weather and university calendars. Uses now exceed 400,000 a year.

We use voice mail as part of the counseling and advising system for Independent Learning. Our Independent Learning Computer Program was the first nationally to treat students in the context of year-round registration.

Students at all campuses can use Penn State's data network to access the mainframe at the Center for Academic Computing or the online "card" catalog for holdings at all locations through LIAS, the Library Information Access System. Off-campus students can dial into these and other services, either directly or through the network node at the nearest campus.

Independent Learning is the largest program of its kind in the U.S. with annual enrollments of more than 20,000. It has students in all states and 40 other countries. We provide training for the Marine Security Guard at all U.S. embassies and ministries around the world.

We operate learning centers at several businesses and industries, including one in Alice Springs, Australia, and another at the Mohawk Nuclear facility in up-state New York.

We have contracts with the British Open University and Encyclopedia Britannica for production of two courses, one in evolution and another in the neurosciences and behavior.

We are working with TV-Ontario in the coordination of space education projects.

Penn State's history and traditions in distance education provide the base to serve future students who will increasingly be older adults, part-time students and full-time workers.

They will demand more than ever that Penn State live up to its charter to "provide liberal and practical education in the several pursuits and professions of life, at low cost and at convenient times and places for all citizens of the Commonwealth who desire such instruction and are capable of profiting from it."

As the Board of Trustees stated in 1953: "much of the instruction can be most effectively presented only at places removed from the campus and/ or by techniques not ordinarily applicable to the classroom."
Telex remains useful

(Continued from page 6)

bound is received in one case.
• As Telex charges by the word and is rather expensive, senders tend to cut down on language. This led to a wide range of abbreviations that were assimilated into general telegram and Telex use over the years. A number of abbreviations have even been standardized.
• Telex is Half-Duplex by nature, meaning that only one party can send at a time.

There are significant business advantages to using Telex
• Geographic scope and availability
Telex provides on-demand connection to any nation and even ships at sea (when equipped with Marisat satellite equipment). When circuits are busy U.S. carriers offer “store and forward” operations in which they will accept a transmission, hold it, and periodically keep sending it out automatically. The option exists for switching to cablegram transmission if normal transmission is not successful. Cablegrams must be delivered within 48 hours. Furthermore, telegrams can be sent to telegraph offices or post offices for pickup by travelers, or to postal addresses. In addition, travelers can file notices for forwarding addresses for telegrams to airline and steamship companies to be held for travelers upon arrival.
• Cultural anthropology
Telex bridges the language barrier when used properly by compensating in the following area:
– Time Differences: International business can be conducted where days are offset by 8 or 12 hours. Telex can present your message to the recipient upon arrival in typed form. In reality very little business really requires personal speech.
– Calendars: The world’s political and religious holidays compound one’s difficulty in being certain just when contact can be made. The constant ability of your correspondent’s Telex machine to receive unattended calls and hold them for arrival makes it a worldwide electronic mail system, already in place and available for use.
– Languages: Typed text gives correspondents time to look up and study the full meaning of foreign terms.
– Delivery confirmation and security
In order for Telex and TWX subscribers to be certain they reach the correct line, each machine has a built-in automatic responder called an “answerback”. The security aspect of the answerback function is simply to send an identification that indicates you are in communication with the desired line. Then again, just before signing off, another identifier is sent and a distant answerback again is printed, confirming that the recipient has been connected throughout the transmission. With this confirmation in your file, you have assurance that the message was received. Most international firms print both their Telex number and answerback on letterheads. International directories are available that list more than 1.7 million subscribers and their answerbacks.
Telex has always offered a means to transfer your messages to alternative methods of delivery. Cablegrams, Radiograms and Telegrams, Mailgrams and FAX indicate the original charter and technology of the carrier. Ships at sea can use Marisat satellite links or marine radiotelegraph carrier’s shore station for transmission.
Western Union networks have interconnection to all former international record carriers on both TWX and Telex. One can either access an international carrier via WUT or dial a connection direct on WUT’s own facilities.
Western Union also offers a variety of value-added services:
• On-line Conversation Service (OLC)
These are the classic Telex and TWX lines of the past 50 years, for which there is a fixed monthly rental fee. Devices once limited to mechanical machines now include CRT’s, matrix printers and disk storage.
• Easy link (ESL)
Introduced in 1982 and recently purchased by AT&T, Easylink provides communication between computers and other WUT services. Because an Easylink subscriber may not be online at the time of an incoming call, each Easylink subscriber has a mailbox to dial into and check for received messages since his or her last session. A significant advantage of this service is that Easylink subscribers can dial-in from any location wherever a telephone and computer exist. Easy link can be accessed and operated manually or through special software.

Telex can provide on-demand connection to any nation in the world, even to ships at sea.

• Mailgrams
Deliver your message by mail, usually the following business day, at a rate considerably less than Telegram. Accessible via Easylink, users can address single or multiple messages with “copy to” forms of addressing as well.
• FYI News (FYI)
WUT’s news and database service on its Telex and TWX networks, with news, finance, entertainment, barter bulletin boards, and shopping available 24 hours per day, seven days per week. FYI is also accessible inbound to overseas Telex subscribers in 99 nations.
• Official Airline Guide Electronic Edition (OAGEE)
Available via Easylink, this service may be used to obtain flight information and reserve seats directly online.
• Easylink Mainframe Interfacing
WUT will arrange and provide interfacing arrangements customized to your mainframe or minicomputer, so it has connectivity to Easylink, Telex, and TWX.
• Infomaster Database Service (INFO)
Easylink users can access to more than 1,600 online databases at a cost lower than individual subscriptions.
• Telex Memory Mail
A Telex network service that provides for addressing and sending Mailgrams, Telex, Certified Mailgrams, Computer Letters, Business Reply Mail and standard Telegram

(Please turn to page 10)
Mysterious new element reportedly discovered

The heaviest element known to science was recently discovered by physicists at Whachtsamata U. The element, tentatively named Administratum, has no protons or electrons and thus an atomic number of 0. However, it does have 1 neutron, 125 assistant neutrons, 75 vice-neutrons, and 111 assistant vice-neutrons. This gives it an atomic mass number of 312. These 312 particles are held together in the nucleus by meson-like sub-particles called memos. Since it has no electrons, Administratum is inert. However, it can be detected chemically as it impedes every reaction with which it comes in contact.

According to the discoverers, a minute amount of Administratum caused one reaction to take four days for completion when it normally would take one second. Administratum has a normal half-life of approximately three years, at which time it does not actively decay, but instead undergoes a reorganization in which assistant neutrons, vice-neutrons and assistant vice-neutrons exchange places. Some studies have shown that atomic mass number actually increases after reorganization.

Research at other laboratories indicates that Administratum occurs naturally in the atmosphere. It tends to condense and concentrate at certain points such as government agencies and universities, and can usually be found in the newest, best-appointed and best maintained buildings.

Scientists point out that Administratum is known to be toxic at any level of concentration, and can easily destroy any productive reaction where it is allowed to accumulate. Attempts are being made to determine how Administratum can be controlled to prevent irreversible damage, but results to date are not promising.

Source Unknown

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Thanks, Mr. Postman

When Monday morning arrives at the ACUTA office, so does our mail carrier – with about 200 pieces of mail.

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Telex still has uses

(Continued from page 9)

formats for your messages.

- **Fastcode**
  A no-charge value-added feature of Telex, providing storage at WUT for up to 20 frequently called Telex and TWX numbers.

- **Store & Forward Service**
  A no-charge, value-added service to which a message can be sent for delivery to a busy number, or a list of up to 30 numbers. Progress reports are returned to your terminal advising the disposition of each stored message to each addressee.

- **Scheduled Delivery Service**
  A variation of basic Store & Forward in which you can specify the time for delivery to each addressee, from 31 minutes to 22 hours in the future.

- **Automatic Conversion to Scheduled Delivery**
  A variation of Store & Forward for single messages only that will automatically revert to Scheduled Delivery Service if your first direct connection attempt is unsuccessful. Time can be sent anywhere from 31 minutes to 22 hours in the future.

- **Redlist**
  A no-charge, value-added service for Telex that stores a large list of your Telex or TWX correspondents worldwide, with options to send a message to the whole list or parts of the list and placing some Schedule Delivery if desired.

- **Conversion to Overseas Telegram**
  A value-added service to automatically accept your Telex message for delivery as a telegram if your connection attempt is unsuccessful. To succeed, your message must contain the full delivery address for a telegram.

- **Directory Information Service**
  A no-charge, value-added service of Telex that prints on command the Country Code, Principal City Names, Telex Rates and Time differences for the country you enter.

- **Departmental Billing**
  A value-added service in which you can have WUT prepare separate bills for each user of Telex on your number.

- **Telex to Facsimile**
  A value-added service of Telex where in-bound messages can be forwarded to an unattended Facsimile machine.

With the widespread use of technologies such as facsimile, electronic mail and satellite communications the sun would appear to be setting on Telex/TWX market. Domestic Telex usage has, in large measure, been replaced by these newer, faster technologies, however, the global arena has yet to see these advances.

Deployment of technology occurs at different rates throughout the world thus by the time FAX becomes globally accepted, more advanced countries will be replacing it for even more advanced technology.
From ACUTA Headquarters

Despite the arguments that ACUTA officials and member institutions made, universities which offer interstate telephone services to residential students are to be regulated by the U.S. Federal Communications Commission as "aggregators."

This may not affect all or even most ACUTA members, because many of you neither block access to 800 or 950 calls nor do you charge for unanswered long distance calls.

But we are still waiting for the other shoe to drop.

Sometime this month or next, the FCC is to decide when it will require universities and other "aggregators" to provide their customers with access to the operator service provider or interstate long distance carrier of their choice via the 1-0-XXX-0+ dialing sequence.

That could affect all ACUTA members in the United States who offer long distance resale to students.

If your existing equipment cannot be converted to allow 1-0-XXX-0+ access - while blocking 1-0-XXX-1+ access - the Operator Services Act allows the FCC to delay enforcement of this provision until you replace your equipment. The Act does require all equipment manufactured or imported into the U.S. after April 17, 1992, to be capable of handling 1-0-XXX-0+ access.

If you have read the story that begins on the front page of this newsletter, you know that AT&T is quite confident that the 1-0-XXX-0+ requirement can be implemented without major problems or undue expense by the end of this year. Some ACUTA members who are honest and expert professionals are not so sure, however.

While the ACUTA leadership has not presumed to speak for the entire Association, President Bill Orrick, Vice President Coley Burton, Treasurer Howard Lowell and myself have spoken out on behalf of their own institutions and pointed out the problems that these new regulations can cause for many of our members.

After discussing the issue with a number of members and the ACUTA Executive Committee, Bill Orrick filed comments with the FCC last August arguing that universities were not aggregators. Since student customers have room leases lasting almost a year, they do not fit the description of "transient" members of the public. He also pointed out the potential for fraud if universities were required to offer 1-0-XXX-0+ access.

A copy of his letter was published in the September issue of the ACUTA News along with additional comments in Bill's column. At that time, the FCC had on its own proposed a number of new regulations for operator service providers and aggregators.

Before the FCC could issue a ruling, however, the Operator Services Act was passed by both houses of Congress and signed into law by President Bush on Oct. 17. The Act, which took effect three months later - in mid-January - was similar, but not identical to rules previously proposed by the FCC.

Still, some issues were left open to be interpreted and enforced at the FCC's discretion. And the agency decided to separate the 1-0-XXX-0+ access issue from the main body of the Act.

On Dec. 21 the regulators again asked for comments from users who would be affected. Again ACUTA officers made comments on behalf of their own and member institutions. Additional arguments against defining universities as aggregators were made.

No pattern of abuse by universities had been established, we pointed out. Indeed, we could show that universities generally obtained for their students savings that are greater than they as individual customers could obtain on the open market.

We also filed additional comments against opening up 1-0-XXX-0+ access, at least not immediately, after the FCC on March 11 asked for comments on that issue.

We have exchanged information with the National Association of College and University Business Officers, the International Communications Association, the Georgia Hospital Association and the Council of State Governments which share common interest in these issues.

Despite our best efforts and those of our fellow organizations, the commissioners acknowledged but would not accept our arguments. To them it seemed colleges were trying to preserve captive markets counter to the intent of the Operator Services Act.

While the first decision was still pending, we extended invitations for FCC members, starting with Chairman Alred Sykes, to address ACUTA's 20th Annual Conference in St. Louis. None of the current members would accept our invitation. We took their refusal as an indication that the Commission would not be sympathetic to our arguments. In any case, our reasoning was rejected.

We did succeed in getting a commitment from a former FCC...
Director's column
(Continued from page 11)
member who also has impressive credentials in higher education and the information technology business to address us in St. Louis. Anne P. Jones, a Washington attorney who served on the FCC from 1979 to 1983 will deliver the keynote speech at the conference on Monday morning, July 8.
She is a former Trustee of Boston College who also served on that board's Executive Committee. And she sits of the Board of Directors for Motorola Inc. and C-COR Electronics.
She should give us an insider's view of the regulatory process and advise us on how we might proceed in the future.
As a non-profit, educational organization, Internal Revenue Service rules do not allow ACUTA to act as a "lobby to influence legislation." When a federal agency, such as the FCC, or a congressional committee invite comments, as was done in the case of the Operator Services Act, ACUTA is then free to make comments without jeopardizing its tax exempt status.
The comments made in this case were not in behalf of ACUTA as an organization but on behalf of the ACUTA members who might be adversely affected.
The Association is a clearinghouse for information, and we try to alert you as soon as possible to changing laws and regulations. When you express your concerns to us, we pass those along to the appropriate authorities in the most compelling way we can.
Even with a monthly newsletter, however, regulatory issues can develop so fast that the ACUTA leadership must act without having time to get a consensus of the Association. By the time we have an opportunity to relay news of pending regulation to you, the deadline for filing comments may be only days away.
Association officers then have little choice but to use their knowledge of various members' needs and express them to the appropriate authorities. With the experience of the operator services/aggregator issue almost behind us already, the Board will be considering how to approach such issues in the future, consistent with ACUTA's general purposes.
If you are concerned about how ACUTA speaks for you in the future, let your officers and directors know your opinion. If you would like to see the Association take a more active role in this area, what would you like to see us do? How much money should we invest in such activity, and where should the money come from? ☺

Positions Available
Telecommunications Manager
Texas A&M University
Available Sept. 1991

Responsibilities: Management, development, integration of large, complex telecom service for TAMU campus and system; planning, evaluation, implementation of upgrades to 17,000 line service with GTO-5 digital Centrex; campus-wide fiber optic network serving 140+ buildings; 1-1 state-wide network supporting interactive video and high speed data; inventory, accounting and billing.

Qualifications: Demonstrated skill, five years experience in management, development, and implementation of major program involving voice, data, video and networking applications. Degree in computer science, electrical engineering or telecom.

To Apply: Send resume, references, salary requirements by July 1 to:
R.M. Sather, Chair, Telecom Search Texas A&M University
Mail Stop 1371, College Station, TX 77843

Communications Manager
Guilford College

Responsibilities: Oversee installation, operation, maintenance of campus phone system – 375 faculty/administration, 900 students. Voice network has NEAX 2400 PBX; data network is VAX/VMS system; interface with long distance carriers, local operating company; assist chief engineer with HVAC control, security alarm circuit design, fault location.

Qualifications: BS in electronics or communications engineering or equivalent experience.

To apply: Send letter of application, resume, three references to:
Personnel Office, Guilford College, 5800 W. Friendly Ave, Greensboro, NC 27401

ACUTA Welcomes New Members
The following joined ACUTA between April 18 and May 15.

Northeast, Region 1
Robert G. Kiley – MIT Lincoln Laboratory
George Pyo – Saint Francis College (PA)

Southeast, Region 2
Michael Jay Bobbel – Jacksonville University (FL)

Midwest, Region 3
Pete Bates – Franklin University (OH)
James Jeffers – Macalester College (MN)
Linda Marutz – Lake Michigan College

West, Region 4
Marilyn Marshall – Hastings College of the Law (CA)

Corporate Affiliates
(Copper)
Metro Tel Corp.
Pirelli Cable Corp.
Tele/Systems Inventory Management
Vikmatic Sales Inc.

Notice: Telecom experts – Don’t forget the family
ACUTA members should remember to share the many recreational opportunities available for spouses and children during the Annual Conference in St. Louis. Take home the flyers contained in the preconference brochure that list local attractions and organized activities. Plan a fun trip for the whole family. ☺