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Technology Advancement

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Association of College & University Telecommunication Administrators

THE VOICE OF TELECOMMUNICATIONS IN HIGHER EDUCATION

VOLUME 8, NUMBER 9

SEPTEMBER, 1979

RUTH A. MICHALECKI, EDITOR

PRESIDENT'S MESSAGE

It was no surprise to me that the annual conference was a total success in every aspect and I would like to express my sincere appreciation to everyone who worked so hard to make it so.

.....to host Connie Gentry, ably supported from start to finish by Susie and Jeff, from the Telecommunications Office at Emory University; and to Emory University itself, for providing the kind of support so vital to the success of any ACUTA function.

.....to the Speakers and Moderators, who put together some of the most interesting and informative presentations we have seen in a long time.

.....to Keynote Speaker, Jim Lovell and to Banquet Speaker, David O'Dwyer, who were both putstanding in their important roles.

.....to the folks at the OMNI, who did everything possible to insure that we enjoyed every minute of our stay.

.....to our Sponsors, who demanded little and contributed so much toward the educational and financial success of the conference.

....to those who accepted nomination and ran in the election for secretary and vice-president. Your interest and offer to work on behalf of ACUTA is greatly appreciated and valued and you can be sure that successful or not in the election itself, we will have a position for you on the team.

.....to the Spouses and Children, who made it all a truly family affair.

.....and last, but by no means, least, to all of you who simply came to participate in our 8th annula conference---to share experiences, to learn a little more, to express opinions and to offer to help in any way you can....to all of you, I say Thank You so very much for a truly memorable and enjoyable conference.

The year that lies ahead will be an important one for our association and I hope to involve as many of you as possible in the furtherness of our goals and objectives.

will have more to say on this and several other subjects in my next message, but for now I would like to close by saying:

"THANKS AGAIN CONNIE FOR A SUPER CONFERENCE!"

PARTY LINE

... Ruth Michalecki, Nebraska

I am still in a state of shock and/or disbelief, imagine getting an award for doing a job you thoroughly enjoy!

The ACUTA Past President's Award is one I will treasure always. No one can know how much it really means to me.

However, I know it truly belongs to many in ACUTA. Without their help and support, the newsletter would never happen, and without the encouragement of several others, I would not be the editor (or the recipient of the honor).

So, if I may take some privileges (I know the editor)....

Thanks Bob Devenish for introducing me to ACUTA and for getting me involved, for always being there providing frequently requested help.....

Thanks Doug Brummell for saying yes, when I asked you to let me try the newsletter and for your many words of advice and help...

Thanks Norm Sefton, for your continual support in way of articles, news items, suggestions, photos, etc....

Thanks Connie Gentry, what a super publications chairman! Always a great column, always helping....

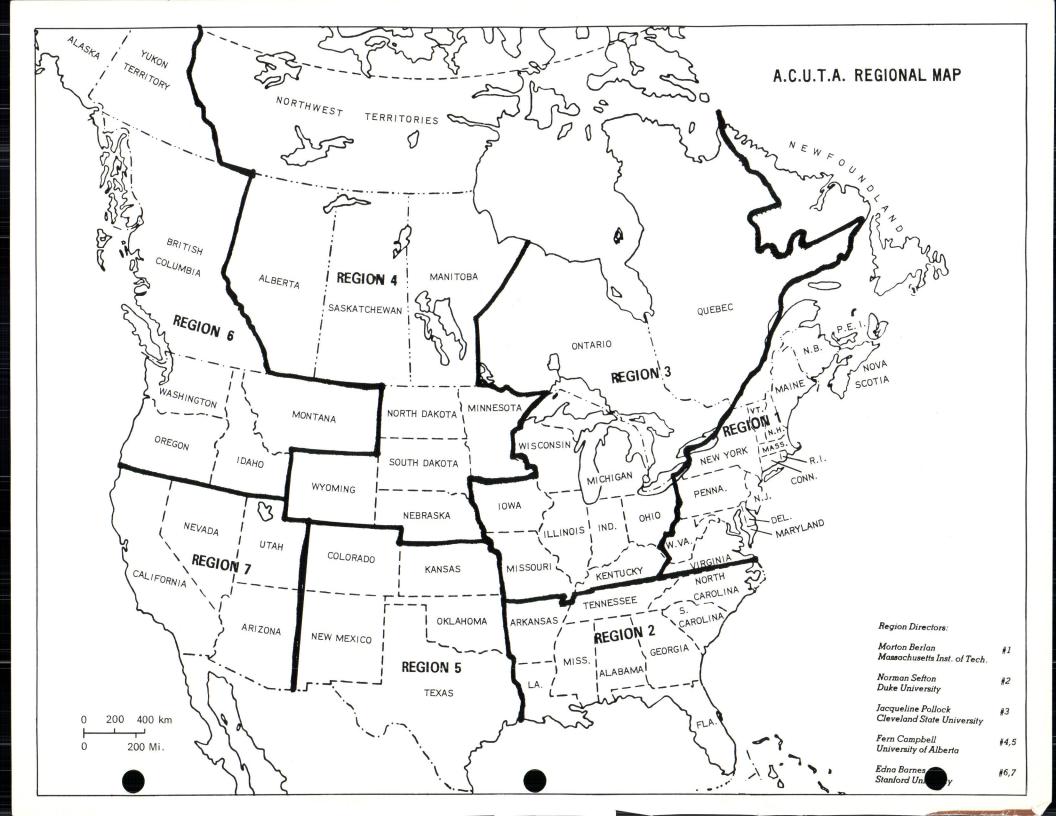
Thanks Mike Grunder for your article, always interesting, thought provoking, and always here....

Thanks to Mal Reader and the Board of Directors for their confidence and support; and I should add, courage, in letting me handle the newsletter without interference...

Thanks to all the others in ACUTA and in the industry for contributing to the newsletter. Please keep it up.

And a special THANKS to the Printing & Duplicating Department of the University of Nebraska. How those printers take what I give them and turn it into a professional looking publication will always be a mystery to me. They really knock themselves out for me, getting the newsletter printed quickly because I am running behind; super people!

Thanks again fellow ACUTA members!



acuta

ociation of College & University Telecommunications Administrators

Malcolm Reader, President York University, Toronto

Elwyn Hull, Exec Vice Pres University of Utah

Mike Toner, Secretary University of Wisconsin Connie Gentry, Vice Pres Emory University

James Dronsfield, Treas. Edinboro State College

Ruth Michalecki, ACUTA News Editor, Uni of Nebraska 211 Nebraska Hall, Lincoln, NE 68588 402-472-2000

BITS & PIECES

* * * * * * * * * * * * * * * * * * *

...Ruth Michalecki, Nebraska

The August, 1979 issue of <u>DATA COMMUNICATIONS</u> has some interesting bits of news, covered in their article Newsfront: (see below)

Western Union is still having problems, and recently withdrew its Information Systems (WUIS) from the commercial data communications market. They sold it to Halcyon of San Jose, CA; now Data Services Company. WU estimates a loss of \$2 million (WUDSC) for the year and they recently authorized the lay-off of 250 people in telegraph operations. In spite of its problems, Western Union cannot readily discontinue the operation, nor can it easily be folded back into the Telegraph Company, which must operate on a tariffed basis. This could have some complex repercussions on its current customers....

DEAD-DEAD, the work by a House subcommittee on the rewrite of the Communications Act of 1934. Death came when chairman Lionel Van Deerlin withdrew his support of the omnibus bill to change the regulation on broadcasting & telecommunications. Instead, he will seek to amend the existing act in stages, beginning with common carrier issues, particularly the structure of AT&T. Where the house bill left the structure question open, VanDeerlin wants to require AT&T to set up separate subsidiaries for its competitive product and service offerings, keeping standard voice telephone service a joint effort of AT&T Long Lines and operating companies. The new suggestions, already known as the "grandson of rewrite", would retain indefinitely the FCC regulation on basic voice telephone service....

XTEN (Xerox Corp)proposed electronic message network will be about two years before operational. They are now awaiting a rule-making decision from the FCC. They have already started developing marketing plans for the wide-band setup and they hope to operate in over 200 cities. They say their market is aimed at the medium-volume users. They see three major market ares for their services: a)data communications;

)) document distribution, facsimile & electronic mail; c) teleconferencing....

Speaking of Electronic Mail, GTE is making good use of an internal electronic mail network developed by David R. Lockwood of GTE. Estimated costs of each message is \$1.50 and the greatest

Bits & Pieces, continued:

benefit, according to Lockwood, is that the service is not time dependent. The network replaces both memos and phone calls in GTE marketing organization....

The new CBXs will probably be capable of a fuller mix of voice and data. "Integrated voice and data", says Peter Cassidy, director of product management at Northern Telecom, "is the key to the CBX. The trend is offering the complete system". Northern Telecom has recently upgraded its SL-1 CBX with an add-on data module (ADM). The ADM attaches to any telephone station connected to the SL-1 and handles synchronous data. Look for full-function CBX's which will serve as a controller for internal applications and will automatically select the lease expensive data service for communicating between widely dispersed nodes. Large users will be able to subscribe to many or all of the planned data services...."Sometimes I feel more at home among the old step switches and cord boards...."

Here at Nebraska, testing is due to start this week on our new Digital switch. It is being installed to handle our large IN-WATS traffic and to provide remote access for local use of our network. I am keeping my fingers crossed, and will keep all of you informed. When it is in and successfully working, I will have an article from our local telco to put in the ACUTA News.....

Meg John, Cornell University, sent me a copy of their "Cornell Communication Services" manual. Very well done and I would imagine it is very helpful to their organization. If anyone would like a copy, please write:

Meg John, Comm Systems Analyst Cornell University Telecomm Center Forest Home Drive Ithaca, New York 14853 607-256-4243

I have copied several of the pages in this issue of ACUTA News. Thanks Meg!....

The National AAU Junior Olympic Games (which we hosted at Nebraska during the same week of our conference in Atlanta) was a big success. We had three hours of live television coverage, national on NBC. We had 3000 athletes competing in 7 sports. All in all, we had about 8000 guests in Lincoln, most of them staying in our dorms for one week. Next year, they will be at Santa Clara, California. The University of Nebraska has been the home of the National AAU Junior Olympic Games for four years. They have asked us to invite them back in 1981 and 1982... Big job and really big communication job.....

FROM DON GAGNON:

Has anyone had experience with installing a teletype in the telephone office to converse with deaf persons and act as a liason between the deaf person and the office on campus they want to talk to?

Please call Don Gagnon at 313-764-7294 if you know anyone doing what he is asking... Better yet, send your reply to the ACUTA News and we will print your answers for the benefit of all. Thanks Don for a thought-provoking question....

s choice

several hundred in operation

PACX (Private Automatic Computer eXchange) is a sophisticated high speed data switching and port contention system designed to optimise the allocation and use of your resources.

PACX continuously scans all terminal channels. When a service request is received, the user is connected to an appropriate port in less than one second.

Plug-in port and terminal modules (some with integral short haul data sets) offer system expansion or reconfiguration without high cost or delay. As many as 510 terminals can contend for service from up to 254 ports.

gandalf

Regardless of system loading, all channels remain completely transparent to speed, code and data format up to 9600 bps asynchronous or 19.2 Kbps synchronous. Ports on both local and remotely located computers can be assigned up to 64 different class designations, accessible on request from the terminal keyboard. Reallocation of resources, at any time, is achieved by reassigning port classes via the control panel. Complete system

status is seen at a glance. Data suitable for statistical analysis is continuously generated. PACX puts control over data communications back where it belongs.

Shown here is Dual-PACX (up to 510 terminals and 254 ports). Standard PACX (up to 254 terminals and 126 ports). Mini-PACX (up to 48 terminals and 32 ports). Complete data is available upon request.

gandalf

Gandalf Data, Inc. 1019 S. Noel, Wheeling, Illinois 60090 (312) 541-6060 Gandalf Data Communications Ltd., Gandalf Plaza, 9 Slack Road, Ottawa Ontario, Canada K2G 0B7 (613) 225-0565 Gandalf Digital Communications Ltd., 4 Cranford Court, Hardwick Grange, U.K.:

Cheshire, England

gardalf

POTPOURI POTPOURI POTPOURI

... Connie Gentry, Emory Uni

Saturday.....got to check into the hotel by 1pm, meet Mal, get hospitality suite set up.....dear God, please let everything go well this week....

Sunday....board of directors' meeting...where are Susie and Jeff...got to get board of directors' name tags...go over last minute details...what do you mean Jeff doesn't know how to drive a straight shift????? what do you mean the Emory Physical Plant carryall only has two gears???? which two????is there a hole I can crawl into???dear God, this is your humble servant.... please?....

Monday....this is it, kid!..oh Lord!..did I unplug my coffee pot when I left home....board meeting again....how do they expect me to pay that one more time..... I voted for what????? attention to what's going on...sorry Mal,lunch with speakers and moderators.... wonder how registration is going....Norm can't take the pictures you dummy, he's got to be in the board meeting...oh hell...Dick Feingold... say didn't you tell me on the phone last week that you're a shutter bug too....thank you, God, for small favors!...Lovell coming in at 7:30pm, WHERE????that's twenty five miles from here!!!check room arrangements...get him from there to here....make dinner reservations....my God, it's five and the cocktail party starts in an hour....can't miss the first big event...only one drink, Connie....can't be ACUTA's first drunken conference host....this is 1141, I need a wake-up call for 6am....keep ringing until I

Tuesday...six already????..impossible, I just turned out the lights...pinched nerve beginning to complain...don't have time to go lame now... if I don't get a cup of coffee and a cigarette, I'll faint...first official session...keynote address...announcements...so far, so good....Susie check arrangements for picnic tonight,...confirm busses...you've got ten minutes to get the wives to Rich's...Jeff, where's the tape recorder...what do you mean the busses won't hold us all???..oh hell...well, a little togetherness never hurt anybody...hope everyone used Ban...what do you mean Stone Mountain Park never heard of ACUTA?????....of all the (#¢*¢*+"*¢#) foul ups!!!!, be calm Connie, get names,....already composing a nasty letter in my head...why me, God????...great picnic.....fantastic cloggers...Anetta Atkins just broke her WHAT????......

Wednesday....thank you operator, I' awake (I lie a lot)....find the shower...did I sleep with my contacts in last night???...my back feels like a herd of elephants camped on it....shut up and suffer....you've got too much to do...where's that agenda...what happens today???...if this is really Wednesday, it must be electronic mail....hurry up Susie, somebody's got to be down there on time...hi Elwyn...what do you mean you think you broke your foot clogging last night???...is this a conspiracy???...hi Mal, I'm taking Elwyn to the emergency room...what would I do without Susie and Jeff?????.....foot not broken, thank God...what do you mean the projector won't work, the session's ready to start...thank God and Elwyn for Steve Merrill....I've been elected WHAT?????....Tallapoosa, Georgia Journal-Beacon headline LOCAL GIRL MAKES GOOD....local girl good make????..honestly, my mind is

ATLANTA CONFERENCE: Mal Reader, Susie & Jeff (from Emory),
Doug Brummell, Connie Gentry & Elwyn Hull. (the pretty
little girl in front of Mal is his daughter).....



going....got to get some sleep....what do you mean I mis-counted the flowers for the banquet...
...oh hell...my back has been struck by lightning
....I'm too young to be falling apart...does my chiropractor make house calls....banquet tables look fantastic...oh everything looks so gorgeous
....the big night...send in the clowns...looking out at all the faces...so many good people...so may good friends....Susie, wake up!!!....I don't know what time it is....do something to my back, it's in terminal spasms....just get me through two more days, God.....

Thursday....six o'clock comes earlier at the OMNI than any other place in the world....unscientific conclusion....zzzzzz, my God, I overslept...wake up, Susie...what do you mean the space shuttle is coming in tomorrow at noon.... just what I needed to make my day....got to get this conference money to the bank...only five thousand off this time...let's add it again......call Picturephone Center...can we change lunch count for tomorrow...get that attendee list typedcopies made....Jeff, I've lost the Six Flags list....so good to get into bed before 2am... must have forgotten something...my God, the attendee lists...it was too good to be true... sort, stack, staple, glad Atlanta has all night TV....

Friday....have I been to bed...must have clean clothes somewhere...vision funny...just tiredlast day...is anyone left...thank God for these hardy souls...get to world congress center ...friends, relatives, lovers; children, invited to lunch...officially over!!!..meet hotel accountant in an hour....vision still blurred...contacts in wrong eyes, dumb butt...thought I was going blind...more financial matters....early to bed...late to rise...yum...fell asleep in the bathtub...sure, I'll come up and have a drink...got to go...so tired...can't sleep....



ATLANTA CONFERENCE: Attending board meeting, Jackie
Pollack, Jack Brown, Elwyn Hull, Mal Reader, Connie
Gentry, John Wright, Doug Brummell & Jim Dronsfield....



Mal Reader and Gayle Ziccardi sharing a humorous moment....

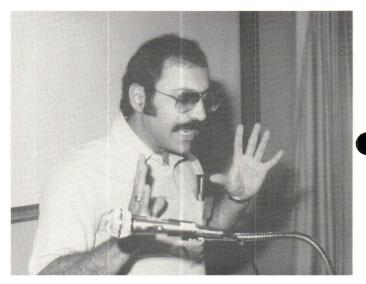


Newlyweds "on top of the world", the Don Gagnons from Michigan



Counting the ballots (with this trio in charge, who would question the count?).

Steve Merrill, Doug Brummell & Norm Sefton....



Explaining Networking & Engineering to fellow ACUTA members; Saleem Tawil, University of Texas at Austin....



Deep in thought - Dorothy Heinecke....



Wish I had heard that joke! Bob Folk from "Ole Miss"....



Sharing a few thoughts, John Curry from Thomas Jefferson and our 'Virginia View' editor, Mike Grunder....





This photo and the following ones are a picture history of an evening of 'clogging' with Elwyn Hull from Utah. What is 'clogging'?????

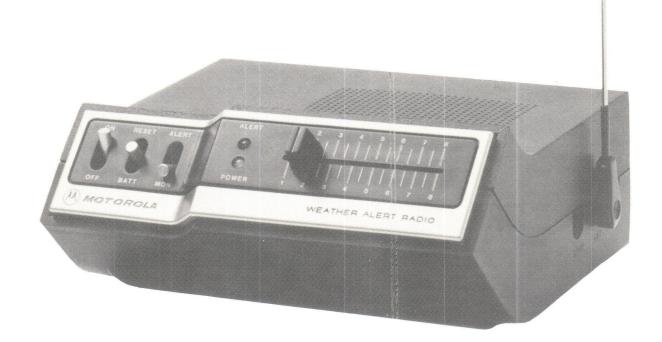






Having fun at the picnic, Vic Mason, the Don Gagnons and Henry Moriyasu....





THE WEATHER ALERT RADIO

Weather is an ever present danger to man, made even more ominous by the fact that man, with all of his advanced technology, has not been able to control it. However, man has used his technology to help protect himself from the weather. He has developed sophisticated forecasting devices and developed systems for warning about weather conditions.

In the United States, the task of weather watching falls to the National Weather Service (NWS), a branch of The National Oceanic and Atmospheric Administration (NOAA). The National Weather Service is responsible for forecasting weather developments in all parts of the country, tracking storms as they develop, and for broadcasting weather forecasts and emergency weather alerts. The National Weather Service broadcasting network is projected to reach 90% of the population by scheduled completion in late 1979. The broadcasts continuously update weather reports on one of three frequencies: 162.400, 162.475, and 162.550 MHz. If a severe weather warning is necessary, the broadcast is preceded by one of two single tone "addresses": one used for alerts of interest to the general public and one used for special advisory alerts of a less comprehensive nature and of interest to special groups such as schools. Slippery roads, frost warnings, and a rapidly changing weather forecast are examples of special advisories.

Motorola has developed the Motorola Weather Alert Radio in response to the growth of the weather broadcasting system. As a leader in the communications industry, and particularly in tone

activated receiving devices, Motorola has developed a product which meets all of the high performance specifications that are expected of a Motorola product. The Motorola Weather Alert Radio is available in each of the three frequencies of the National Weather Service and also in a three-frequency model which will receive all National Weather Service stations. Models are available with an emergency power source for protection in the event of a power failure. All Motorola Weather Alert Radios are equipped with both National Weather Service tone addresses.

Each Motorola Weather Alert Radio is equipped with separate ON/OFF and volume controls which enable the user to turn the unit ON and OFF without the need for adjusting the volume. A switch enables the user to constantly monitor the channel, if desired, or to have tone activation of the receiver. Another switch resets the unit and provides for a battery test in units equipped with a battery. There are green and red light emitting diodes (LED's). The green LED is illuminated as power is applied to the unit, and the red LED illuminates when the unit receives a severe weather message (even if the unit is already in the monitor mode). In addition, antenna and external speaker jacks are provided on the unit.

Because weather affects all our lives, the Motorola Weather Alert Radio is appropriate for an almost endless number of users. Anyone who has a concern about the weather, and particularly severe weather warnings, may find this receiver useful.

VIRGINIA VIEW

...Mike Grunder, Virginia Tech

"A Few Thoughts on Professional Development"

The term "professional development" entails many different things. Just about all of our activities in ACUTA are aimed at helping us become better and more professional communications managers. Our conferences and workshops are planned around the idea of gaining knowledge through formal classroom sessions and informal interaction between members. Even our hospitality suite has, as its basis, the idea of education through inter-action.

As Elwyn Hull mentioned at the recent Atlanta Conference, there are now a number of Bachelor's and Master's level programs available in telecommunications management. At least one of the programs is available on a video tape basis. Gayle Ziccardi at the University of Pittsburgh, is looking into having a pre-packaged workshop taught by the folks at Business Communications Review. These programs have an excellent reputation and, at this point, appear to hold great promise for our organization.

This is all good news to me because I am of the opinion that the professional status of the university communications manager is, in a general sense, not as good as it should be. Primarily this is reflected in salaries which are below the level of other comparable professions, ie., computer management.

The reasons for this are several. Intensive management of college and university telephone services is relatively new at most institutions. At many schools the full importance, cost and potential of telephone services is still not recognized. Change just naturally comes slow. Add to that the high pressure of running an institution and the change process is further slowed.

ACUTA, as an organization, must constantly strive to promote the role and status of university communications managers. We are professionals. We are a professional organization. Yet, to a certain degree, we are taken for granted and, at times, overlooked by our superiors.

ACUTA can help the individual member by continuous effort to improve quality of our conferences, workshops, and our newsletter. It can help by encouraging members to write articles for professional journals and then by assisting in getting them published. Wide and detailed publicity of our functions is also important; it is mandatory that the name "ACUTA" become widely known on its own terms, without the requisite three minute explanation of what each letter stands for.

We've gotten a good start, but we have a long way to go. I underline the "we" for good reasons. It's not just up to the Mal Readers and the Connie Gentry's to make ACUTA work. It's up to every one of us. Whether it's writing articles for the ACUTA News, putting on a workshop, or harrassing our officers when necessary; it is up to US, the members, to really carry this organization. Anyone who seriously thinks otherwise is mistaken and is doing both ACUTA and it's membership a dis-service.....

ACUTA WELCOMES THE FOLLOWING NEW MEMBERS

Region I:

J. P. Heinsohn, Director of Telecommunications New York State Office of General Services Rockefeller Empire State Plaza Albany, New York 12242 518-474-5575

Ben Moskowitz, Telecommunications Specialist Community College of Allegheny County 610 Smithfield Street Pittsburgh, PA 15212 412-237-2727

Region II:

E. Paul Rogers, President Jarvis Corporation of Georgia 1750 Peachtree Street Atlanta, GA 30309 404-873-2471

Daniel T. Calongne, Ass't Physical Plant Dir. Louisiana State University Baton Rouge, LA 70803 504-388-3186

George Ellis, Staff Assistant Accounting Services Louisiana State University Baton Rouge, LA 70803 504-388-3321

Region III:

Charles Welch, Manager - Education Ohio Bell Telephone Company 75 Erieview, Room 627 Cleveland, Ohio 44114 216-822-4189



ATLANTA CONFERENCE:

ACUTA Board Meeting, clockwise: Connie Gentry, Doug Brummell, Dale Pollett, Mort Berlan, Steve Harward, Ruth Michalecki, Jackie Pollack, Jack Brown, Elwyn Hull and Mal Reader...

"CORNELL COMMUNICATION SERVICES"

The following articles were reproduced from the Cornell Communication Services Manual.

Cornell Switchboard

The Cornell switchboard consists of three console positions which allow up to three operators to be working at once. Calls are routed to the first available board. Operators can tell when there are calls waiting but there is no indication of how many calls are waiting. Callers will never receive a busy signal when calling the switchboard during working hours; they will hear a ringing signal until they are answered. This sometimes confuses callers during a peak period since they assume that the operator is immediately aware of their call; the call is only apparent to the operator when it leaves the queuing arrangement and appears on the switchboard. The operator will answer the call as soon as it comes into the board.



The operators are responsible for campus number information, transferring calls, directing long distance calls, and giving dialing instructions. When a caller receives an out-of-order recording he is directed to call the Cornell operator; she must ascertain if:

- there is a new number for the party,
- no longer a listing for the party,
 there is a department that could give further information,
- if the number can be reached only by campus telephone (AOR restricted),
- 5. or if there is no way to reach that party.

Emergency calls that cannot be helped by the operator are transferred to the Department of Public Safety.

The switchboard is not equipped to place outgoing calls; they must be placed by the calling party directly, or through the WATSBOX,® or on a pay telephone. The switchboard cannot take messages but will refer parties to the appropriate department. Collect, person-to-person, and other operator assisted calls cannot be accepted at the switchboard because of billing misunderstandings. Operator assisted calls must go directly to the person or department for whom they are in-

The Cornell operators are trained by Bell Telephone and are expected to know all aspects of running the Cornell switchboards. Politeness and familiarity with the Cornell campus are job prerequisites. If a caller is abusive the operator may hang up, transfer the call to the Department of Public Safety, or transfer the call to her supervisor. (See also section on Switchboard Directories.)

Personal Telephone Calls

Personal calls should not be made from Cornell telephones unless they are of an Personal calls should not be made from Cornell telephones unless they are of an emergency nature. Long distance personal calls should be billed collect, to a personal credit card, or billed to a third party such as your home telephone number. Personal toll calls billed to a Cornell number cause extra work. To pay for a personal call from a University telephone the amount of the call plus the correct amount of tax must be deposited at the University Cashiers office with a University deposit slip indicating the account to which the call has been charged. Paying for, and making, personal calls from the University involves unnecessary administrative paperwork and should be strongly discouraged. administrative paperwork and should be strongly discouraged.

There are no "free" telephone calls at Cornell. Local calls involve the use of telephone services that have been paid for by the University. Personal calls made on breaks should be made on non-University telephones such as pay telephones. If there are no available pay telephones in a particular area, the department approves of personal use, and incoming calls won't be blocked, calls may be made on departmental telephones during breaks. made on departmental telephones during breaks.



Doug Brummell and his wife Nancy, at the ACUTA Conference in Atlanta, 1979.....

* * * * * * * * *

" TIME AND TEMPERATURE"

...Doug Brummell, Rochester

With ever increasing costs and ever tighter budgets, every organization attempts to cut costs without affecting service to the customer.

At the University of Rochester, we attempted an innovative cost reduction project. our operators with providing our faculty and staff with "Time & Temperature". The logic The logic was simple; if we could provide this information on to two-digit system, our faculty and staff could be convinced that it would be easier than dialing eight digits to produce the same end result. Easier for them and cheapper for us (8.3¢ per call exactly!).

We purchased a digital clock and a digital temperature display unit with a remote exterior sensing device which we mounted on our north wall. A two-digit level was modified to drop in on the consoles with a distinct visible light.

The first month's results were very pleasant. Our operators provided Time and Temperature to 8,000 callers. Random samplings showed a favorable response from our faculty and staff and surveys conducted in our operator's room show that the additional responsibility has not adversely affected customer service.....

Note from editor: Thanks Doug for this interesting article. In addition to the dollar savings, think of the positive image you have created for your operators, willing to take time to give the Time & Temp to callers.... Now let's see, what's 8,000 x 8.3¢ x 12 months????? WOW



TELECOMMUNICATIONS MANAGEMENT CORPORATION

40 Washington Street Wellesley Hills, MA 02181 Tel. (617) 237-7777

"WHAT IS TMC?"

TMC, Telecommunications Management Corporation, is an independent consulting firm specializing in Telecommunications Utilization and Management, and offering a full range of services including Equipment Analysis & Design, Computerized Network Analysis & Design, Preparation of Bid Specifications, Manufacturer/Vendor Interface, Department Organization & Efficiency, and Complete Implementation Services.

All contracted services include concise and complete Management and Financial Documentation, and thorough follow-through and follow-up services to insure the effectiveness of our recommendations.

"WHAT IS AN INDEPENDENT CONSULTING FIRM?"

TMC does not represent any Equipment or Facilities Manufacturer or Vendor. As Communications Consultants to your College, University, or Medical Center, our only function is to serve your best interests. This objective we pursue with all of the ability and energy at our command.

"DO YOU KNOW THE EDUCATION ENVIRONMENT?"

Our Education Specialist is a former University Telecommunications Manager who understands from 'Hands On' experience Telecommunications requirements and operation in an educational environment. Current clients in the education community include Boston College and The University of Virginia.

"WHAT DO WE DO IF WE ARE INTERESTED IN YOUR SERVICES?"

At your request, and at no cost to you, TMC will send our Education Specialist to your office for a mutual interview. From the results of the interview, TMC will prepare (for your review and analysis) a complete and detailed proposal of offered services and associated costs based upon your stipulated requirements. Upon acceptance of part or all of the proposal, the details will be incorporated into a contract. You will know what we will do and the associated cost to your institution before you enter into an Agreement.

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James J. McCullough / Member of ACUTA

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