4. Issues and Concerns

RATE REDUCTION FOR INTRASTATE LONG= DISTANCE CALLS

Social pressure on deaf individuals to purchase a telecommunications device for the deaf (TDD) grew as the network increased. TDDs installed in government agencies, retail chains, airlines, and a stockbroker's office in the mid-1970's increased the demand for TDDs and made them much more useful. As deaf people made more long-distance calls on their TDDs, it became evident that long-distance TDD calls are very expensive. Although Baudot-code TDDs can transmit a maximum of 60 words per minute, the average user rarely types faster than *45* words per minute; thus, a TDD call can easily take four times longer, and cost considerably more, than its spoken equivalent. According to Harry Levitt, a professor of communications science at City University of New York, the average person talks 150 words per minute, although New Yorkers often talk as fast as 200 words per minute (25).

Deaf individuals and groups began to lobby at the State and Federal levels to reduce the long-distance tariffs for TDD users. The National Center for Law and the Deaf, a public law service with some Federal and some private funding, has stated that the primary argument in favor of a rate reduction for TDD users is that charges for long-distance calls should be based on the value of service rather than on the cost of service. When the value of a call made by a deaf TDD user is exactly the same as the value of a call made by a hearing person, the cost of the call is approximately four times greater for the TDD user (30).

In 1977, the Connecticut Public Utilities Control Authority issued an order (docket No. *77-0250,* Dec. 16, 1977) allowing a 75 percent reduction in the telephone bills of deaf individuals using TDDs for intrastate long-distance calls. Over the next 4 years, similar reductions were adopted in 42 other States. States varied in their certification requirements for deaf users: some required an affidavit from a physician or an audiologist; others asked the user to take an oath that he or she was deaf. A few States certified both deaf and hearing people in the same household.

The National Center for Law and the Deaf continues to advise deaf consumer groups throughout the country on strategies for obtaining reduced intrastate rates for TDD users.

TELEPHONE CUSTOMER SERVICES FOR TDD USERS

In addition to rate reduction, there were other issues that concerned TDD users. Certain telephone services, such as business office assistance and 911 emergency numbers, are included in the monthly service charge, but deaf users could not take advantage of them. In 1981, an 800 number was established that TDD users can call to get information and assistance from an operator: information on numbers not in the telephone directory; and assistance with credit card calls, collect and person-to-person calls, and calls from hotel telephones. The National Center for Law and the Deaf has also worked with consumer groups to persuade local utility companies to install TDDs in their customer information departments so consumers can ask questions about billing services and communicate during power outages.

RATE REDUCTION FOR INTERSTATE LONG-DISTANCE CALLS

The 4 years of effort to obtain reduced intrastate rates culminated on August 21, 1981, when, in recognition of the International Year of Disabled Persons, the American Telephone & Telegraph Co. (AT&T) filed a petition with the Federal Communications Commission to reduce interstate rates for hearing-impaired TDD users. The tariff, which became effective October *30, 1981,* reduced rates 35 percent for daytime long-distance interstate calls and *60* percent for evening long-distance interstate calls; late-night and weekend rates remained the same.

One hundred five years after Bell invented the telephone, the deaf population, those Bell wanted to bring into the mainstream of society through improved communication, was officially invited by the direct descendant of Bell's own company to participate fully in the Nation's telephone linkage. According to W. E. Albert, Administrator of Rates and Tariffs, AT&T filed the tariff for calls "placed by residence customers who have been certified as requiring a visual means of communication to use Long Distance Message Telecommunications Service , . . to help to promote a fuller and more active participation in our telecommunications-oriented society" (1). Barry Strassler, Executive Director of Teletypewriters for the Deaf, Inc., the association of TDD users, said, "This is the Milestone!" (38).

ELIGIBILITY FOR REDUCED RATES

The certification process for interstate rate reductions for TDD users has not yet been decided, AT&T has suggested "friendly certification" for hearing- or speech-impaired TDD users who are already certified for intrastate reductions. However, some States have extended reduced rates to hearing persons who communicate with hearing-impaired TDD users (e.g., the hearing child of a deaf parent in another city, or the hearing staff of an agency that regularly communicates with deaf clients throughout the State over a TDD). The AT&T tariff applies only to hearing- and speech-impaired TDD users, but benefits hearing people in the same household. For States that do not have intrastate reductions, the deaf community will have to work with the telephone company to advertise the interstate reductions and certification process, because the telephone companies cannot identify deaf people from their records.

PUBLIC TDDs

Deaf consumer groups advocate placing TDDs in public places—shopping centers, libraries, transportation terminals—for use like conventional pay phones. The converted teletypewriter (TTY) machines are impossible to carry about, Many of the newer TDDs are portable, but they are not light enough to be carried comfortably all the time. In case of an emergency on the road, or a change of plans, the deaf TDD user has no access to a communication device. Although a few public TDDs have been put in places where there is a large deaf population (e.g., on the campuses of schools and colleges for the deaf), the access of deaf people to public telecommunications service remains extremely limited.

COST OF TDDS

TDDs are still very expensive. The reconditioned TTYs cost about $300 installed, with additional fees for paper supplies and servicing, plus the cost of the coupler ($250). For the past several years, reconditioned TTYs have been almost impossible to obtain and can usually be purchased only from someone who is acquiring more modern equipment.

A 1981 catalog of rehabilitative devices describes 10 portable TDDs made by different companies, with prices ranging from $300 to $700, accessories not included. One ultraportable model, with somewhat limited use, sells for $200 (43). A new Baudot model, the Minicom", introduced by Ultratec in 1982, is lightweight and sells for $259. All these devices are beyond the budget of many deaf families.

Recognizing that deaf TDD users would have to purchase an expensive device before they had access to the telephone lines, some States (Michigan, Illinois, Florida, Georgia, and a few others) lease TDDs for a monthly fee ($15 to $36 per month). Some States rent with an option to buy. Hearing-impaired persons who use an amplifying handset on their telephone pay $0.75 per month for this service in some communities, and *$1.50* per month in others; there seems to be no standard charge. Some telephone companies will sell the amplifier to the customer for a $40 charge, but it is difficult for the customers to find out about this. As other adaptive devices, it is not always easy for TDD users to know what is available and what is the most economical way to obtain it.

DISTRIBUTION OF FREE TDDS IN CALIFORNIA

An important step in distributing TDD units for access to the telephone system was taken in California in the fall of 1981. In 1979, owing to the work of deaf consumer groups (particularly GLAD, the Greater Los Angeles Council on Deafness), the California legislature passed a bill requiring the telephone companies to distribute free TDD equipment to certified hearing-impaired customers who could not use a standard telephone (California SB 597). Governor Jerry Brown signed the bill into law, and the California Public Utilities Commission was charged with implementing it.

In September 1980, the Public Utilities Commission began hearings to work out the practical aspects of implementing this law that applies to California's 40,000 deaf residents. Almost all TDDs owned by deaf Californians employed the 5-level Baudot code. TDDs were manufactured by a number of small companies, many of which *were* located in California and therefore had a financial interest in specifications for the devices. The issue of the modem code for TDDs was as significant in the hearings as was that of the system by which TDDs would be distributed.

Groups participating in the California hearings had different goals. The conflict was an example of the recurrent conflict between those with investments in "old" technology and advocates of "new" technolog, whose stand would inadvertently make existing technology obsolescent and necessitate the retraining of users. The telephone companies wanted to implement the law in the most economical and expeditious fashion. The manufacturers of TDDs were competing for the potentially lucrative equipment contracts from the telephone companies. In general, the manufacturers wanted to stick with the 5-level Baudot code, because changing over to the 8-level American Standard Code for Information Interchange (ASCII) would be expensive. They also feared competition from larger manufacturers who had not served the deaf market before. The deaf consumer groups were concerned about small matters: hard or soft copy, red or green letters in the light-emitting-diode readouts.

Other interested groups were also represented, SRI International, a California-based consulting firm, had just completed a 3-year grant project,

totaling $375,000, that the National Institute of Handicapped Research, Office of Special Education and Rehabilitative Services, funded to develop an ultraportable hand-held TDD terminal. (A prototype was made and tested with representatives of the deaf community; although the prototype was smaller than any other standard typewriter-keyboard TDD, it was expensive and never came to production.) The SRI team, which included technology-minded deaf members, was very concerned that deaf people, by using the Baudot code, would become isolated from the rapidly expanding world of computer communications. One objective of the SRI project was to develop a device that could be used with both Baudot and ASCII systems and thus bridge the gap between the two. SRI believed firmly that the Baudot system was obsolete and that communication systems for deaf people should be planned with the future in mind.

After hearing all points of view, the California Public Utilities Commission staff recommended retaining the Baudot system, and the administrative law judge followed their recommendation in setting the standard. In an unusual turn of events, however, the commissioners reversed this decision and recommended that all free TDDs had to have dual capacity, that is, to be compatible with both Baudot and ASCII systems. Two California manufacturers, Krown Research, which makes the Portaprinter", and Plantronics, which makes the VU-Phone@, received the first contract to produce the devices. * They agreed on standardized modems to comply with the ruling of the California Public Utilities Commission. A trust fund was established to pay for the distribution of TDDs. In October 1980, telephone customers in California began to pay a 15¢ surcharge on their monthly telephone bills. That surcharge goes to the trust fund for TDDs.

Distribution of free TDDs by the telephone company also began in October 1980, in Fremont, Calif., where there is a substantial deaf community. The distribution of free TDDs will continue in other areas of the State and should be completed by 1984. Customers will receive a free TDD regardless of whether they already own one. Consumer organizations in different California communities are working with the telephone companies to arrange to identify eligible consumers. There is also the question of possible loss or disappearance of equipment to consider. For example, when a deaf person moves, does the person take the free TDD along?

Although the California decision may seem like the pot of gold at the end of the rainbow, there are some members of the deaf community who do not support the free distribution of equipment. They are willing to make the purchase of a TDD a medical deduction on their income tax.** They agree that low-income deaf people should be provided with TDDs at reduced cost, but they don't want gifts. They worry about other consumers' reaction to having to pay for the devices with a surcharge on every month's phone bill, or about the stereotyping of all hearing-impaired people as "poor." (The charge on the telephone bills now reads "SB 597-TDD, " which puts the responsibility on the State legislature, At one point it was suggested that the charge be titled "DEAF," an acronym for Deaf Equipment Acquisition Fund, but that idea was rejected.)

As of July 1982, 4,000 units had been placed in California—fewer than expected. Many deaf people have no telephone or perhaps do not wish to reveal their poor language or typing skills. The trust fund has accumulated enough money that the surcharge may be reduced.

*VU-Phone is not currently being manufactured.

**The Internal Revenue Service began allowing a medical deduction for TDDs in 1971.

ASCII= BAUDOT STANDARDIZATION AND THE IMPACT OF COMPUTER TECHNOLOGY

The issue of standardizing modems is important. When deaf persons have dual-capacity devices, they will have access to additional less expensive communication systems, such as the Deafnet Electronic Mail system. * Also, the cost of TDDs might come down as has the cost of many pocket computers and other small electronic devices. The Superphone", made by Ultratec in Wisconsin, offers a dual-capacity model, and one can also buy a converter to permit a TDD to accept calls from both Baudot and ASCII units. Costs will go down significantly when the TDDs are planned to coordinate with the computer market that is growing among nondeaf persons. The prize-winning entry in a 1981 national contest on the use of personal computers to aid the handicapped consisted of a Radio Shack pocket computer with a coupler and a miniprinter to make an ultraportable TDD that could also be used as a computer—all with off-the-shelf items (26).

An issue that will arise as more deaf persons use TDDs that can access the *4* million ASCII-compatible stations is the possibility of tariff fraud. The deaf caller with reduced interstate rates or the nondeaf person calling from the residence of a deaf TDD owner would be indistinguishable from a profitmaking data caller.

● Deaf net lost funding in January 1982 and is currently operating on a much smaller scale.

NEW LEGISLATION

The California TDD distribution plan may be affected by decisions based on the Federal Communications Commission Computer Inquiry II. The provisions that are expected to take effect on January *1, 1983,* would cause AT&T to separate its role as operator of the telephone network from its role as a supplier of end-use or terminal equipment. When that occurs, there could be a conflict in the California subsidiaries of AT&T that are distributing free TDD equipment. The California distribution system may be only a transitional one; distribution of TDD terminals financed by a customer-subsidized trust fund could be considered a cross-subsidy. The full impact on the deaf of Computer Inquiry II and legislation being drafted in the U.S. House and Senate cannot be determined at this time.

DEAF POLITICS

Because the TDD system was so much a grassroots movement, one "by and for the deaf, " it has not been immune to divisions within the deaf community. The original impetus for the development of the device and its diffusion was dependent on at least four deaf men—Weitbrecht, Marsters, Saks, and Breunig—who were educated orally (i. e., to lipread and speak and to function with speech in their professional and personal lives). Marsters and Breunig were among the founders of the Oral Deaf Adults Section of the Alexander Graham Bell Association for the Deaf. The Oral Deaf Adults Section was begun in 1964 when the first TTY was demonstrated, and its growth paralleled that of the TTY system. The desire of these deaf individuals to communicate with each other from different parts of the country reinforced their work on the TTY system. In order that the whole deaf population of the United States be eventually included in the system, they included from the first representatives from the National Association of the Deaf, a much larger consumer organization of deaf persons who advocate the civil rights and vocational oppor-

tunities of deaf people. The National Association of the Deaf recommends the use of sign language in education and employment.

Federal agencies did not encourage the original developers of the system. However, Telecommunications for the Deaf, Inc. (TDI), established good rapport with AT&T and was able to use the connection to support the system's growth. Much later (1977'), the National Institute of Handicapped Research gave SRI International the grant to develop an ultraportable TDD; although the deaf community was consulted by SRI International in evaluating the prototype, deaf persons were apparently not consulted by the Federal agency when the grant was awarded. Considering that a group of deaf persons had developed the whole TDD system from two devices to a nationwide network, some people might say that deaf/deaf and deaf/hearing politics played a role in the decisions about Federal support.

TDI disseminates information about TDDs and has become increasingly social and political. Some deaf persons have suggested that it is now appropriate for AT&T to assume this organization's distribution and directory services. In at least one State, AT&T distributes equipment to deaf people through its subsidiaries. TDD users are listed in some regular telephone directories with a TDD symbol by their names. This method of listing may become more inclusive than the directory published by TDI, which does not contain the names of all TDD owners but only of those who pay dues to the organization.

Despite the tensions of deaf politics, almost everyone involved in the development of TDDs agrees that the growth of the TDD system has progressed smoothly in contrast to other developments in the deaf community, particularly those regarding the education of deaf children.