Problems and Related Suggested Solutions
To Deaf Users and Non-Users
of the Telephone

by

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While Pacific Telephone Company has generously offered to provide some material for advertising new phones and devices for the deaf, there still remains the need to advertise and make it possible for simulated trial use. The majority of deaf persons would greatly enjoy using the telephone, but their own fear and frequent unrecognized needs scares them from even seeking assistance.

The Problem: The need of selling the deaf on the idea of using the telephone as well as selling telephone companies on recognizing this unmet source of revenue. New equipment and new ideas for the deaf are abundant. What is lacking is some place for all these to be demonstrated.

Suggested Solution: Either the Public Utilities Commission and/or the telephone companies is Southern California to develop a place for hearing impaired persons to view and test use new equipment before actual use. Any and all information about such a place must be communicated to all departments of the respective telephone companies so that if a deaf person calls, say, the San Diego office, he will not be put off with the statement that there is no place for which he can try or observe new equipment or devices.

Other suggestions or comments
Another area of concern is the need to recognize the limited amount of information that occurs when either the teletype or speech indicator is being used by the deaf person. This has been accurately estimated as about one-third normal rate. In other words, where the hearing person can speak at approximately 120 words per minute, the deaf person with the teletype machine can put across, at best, only about 35 words per minute. The user of a speech indicator is even slower when attempting to receive a message. Why must the deaf person pay normal hearing toll and long distance rates for actually reduced telephone communication?

The Problem: Rates for deaf telephone users are not commensurate with the amount of information being communicated.

Suggested Solution: While realizing that this may present an extremely difficult problem, two suggestions hint at possible improvement. First, it might be feasible to defray this cost by reducing the normal monthly telephone charge for the telephone (In most cases, reducing this by 50% amounts to only about $2.50 anyway. But it is a start at equalizing charges). Second, and probably better, would be to simply deduct a percentage of the total monthly bill of those deaf persons who use the telephone. In other words, while most deaf persons are using the phone daily now (those who have special devices), they are paying rates far out of line with what the hearing person receives. They are adding revenue to the telephone companies without really using the phone as prices have been established. A percentage reduction could not only show them that the company is concerned with their welfare, it could increase use of the telephone and again increase the profit of the telephone companies.

Other suggestions or comments:
A subject of bewilderment among those selected few deaf persons who use the telephone is the added monthly charge for a light relay. The light relay is vitally needed by the deaf person to allow a visual signal when the person is being called.

The Problem: Why must the deaf person pay for a light relay by a lifetime of increased monthly charges when the hearing person does not have to pay extra for a bell? If the deaf or hearing person needs both, an extra charge is justifiable. But, if only one is needed and used, why charge extra per month for it?

Suggested Solution: Eliminate the monthly extra charge for a light relay when only the light is being used. In cases where both the light and bell are needed, continue the extra charge as now established.

Other suggestions or comments:
The Bell System has a traditional sense of responsibility toward communications for the handicapped. A recently developed three-phase program is part of this continuing effort.

Services for SPECIAL NEEDS

Dr. L. Holland Whitney, Medical Director
Personnel Relations Department, A.T.&T. Co.

Pick up a telephone; dial a number; hear an answer at the other end of the line, and order a loaf of bread—an action as automatic and familiar to most of us as putting one foot ahead of the other to walk down the street. But to many—those for whom talking or hearing (or seeing) is difficult or impossible—this simple and familiar use of the telephone is a challenge, one that often requires very special help.

Accustomed as most of us are to communicating with other people at the drop of an idea, we take the gifts of speech and hearing pretty much for granted. Unfortunately, to many, many people around us, life is not that generous.

Let us take as an example a fictitious but typical man in, say, Ohio. We'll call him Harry Adams. Harry has a wife, two children and an interest in selling. And, up to a date he'll never forget, a pleasant, resonant voice has helped him become a successful salesman in one of Ohio's major cities. Then it happens—cancer of the throat, an operation to remove his larynx and what would seem to be an inevitable voiceless future. What does he do now? Take this turn of events lying down—or try to take advantage of the corrective measures available to him? If it is the latter, the Bell System can offer some of the corrective measures which can help him.

Harry's case is far from isolated. And, instead of having speech problems, he could be hard of hearing or totally deaf. In this country, it is estimated that there are 750,000 people with speech problems, 300,000 who are totally deaf and 5,000,000 who are partially deaf. Obviously, communication with the world around them can present difficulties for these people. They need help.

A Legacy of Responsibility

The Bell System has felt a traditional sense of responsibility toward the handicapped, in terms of communication. An obvious reason, of course, is the fact that we're in the communications business. But it goes back further than that—as a matter of fact, to before the time the telephone was invented. Indeed, it goes back to the early life of Alexander
Graham Bell and to the family influences which helped mold the direction his later efforts would take.

Bell’s father was well known as a teacher of speech. He invented what he called “Visible Speech,” a code of symbols which indicated the position and action of the throat, tongue and lips when various sounds were uttered. Although originally planned for more general purposes, “Visible Speech” turned out to be a helpful guide for the deaf in learning to speak. Undoubtedly influenced by his mother’s loss of hearing—which started when he was twelve—Bell took a keen interest in his father’s theories and became expert in their use as he grew up.

He undertook a certain amount of speech research on his own, too. The story goes that Bell and his brothers made a model skull and fitted it with a reproduction of human vocal apparatus, operated with a bellows. They managed to produce such a lifelike “mama” wail from their skull one night that the neighbors turned out in alarm, sure that a baby was lost in the vicinity. About the same time, Bell trained his Skye terrier to growl steadily while he manipulated the dog’s mouth and vocal cords, trying to shape the growls into words. At the peak of the terrier’s career, according to ear witnesses, it was able to give out a reasonable facsimile of “How are you, grandmother?”

Later on, in Boston, Bell took up teaching “Visible Speech” in earnest. And he met with great success at schools for deaf children in the New England area. President of the Clarke School for the Deaf in Massachusetts, one of the schools at which Bell taught, was Gardiner Greene Hubbard, a Boston attorney. His daughter, Mabel, was one of Bell’s early pupils—and later was to become his wife. Another of his pupils, about that time, was the five-year-old son of a successful leather merchant named Thomas Sanders. So grateful were Hubbard and Sanders for Bell’s success in teaching their children that they financially backed the electrical experiments Bell was conducting at night. That backing was a long step toward the eventual birth of the telephone.

The Bell System’s sense of responsibility toward handicapped persons is evident in a number of ways. And perhaps one of the most striking of these is the spirit of public service and productive ingenuity of thousands of Bell System people that, over and over again, have combined to furnish equipment and service for these special needs. But our accomplishments in this direction are not as extensive as we would like them to be. We have made certain strides in developing equipment and services for special needs which are currently available to these people. Practically all of the equipment is standard and it can be used for many diversified purposes. There are also a number of items that are still experimental. Still, we don’t know yet enough of the answers to solve all the problems that must be faced. We are trying, however, all the time. And we like to think we are on the threshold of bigger and better horizons in this enormously important endeavor.

*Some of the Bell System equipment which serves the special needs of people with speech or hearing handicaps: (1) hard-of-hearing handset with volume control knob; (2) noisy locations handset with push to listen button; (3) bone conduction receiver; (4) electronic larynx; (5) auxiliary signal control device to activate lamp or other appliance when telephone rings; (6) extra-strength signals such as horns or gongs to indicate ringing telephone.*
SPECIAL NEEDS

Three-Phase Program

The Bell System, in this continuing effort, has instituted a three-phase program to discover these horizons. The first phase, described here, is to make Bell System people, the medical profession and the public aware of the standard equipment already available which can be easily and readily adapted to serving a particular need. In large part this involves making very sure that our own people, particularly the service representatives and installers, are informed about what can be done to serve these special needs. This includes the designation of one person in both the Marketing and Engineering Departments in each of the Operating Companies to now be responsible for coordinating all such efforts. In addition, this phase includes the expansion of informative advertising on this subject appearing in general audience publications and the preparation and distribution of a slide talk about this equipment to the Bell System Companies.

The second phase of this program will be to inform the Operating Companies of existing items of equipment to serve those with motion handicaps. Indeed, at this time A.T.&T. has already established a centralized pool of knowledge about what has been done locally in the Operating Companies to assist such people.

Phase Three is to assess the conclusions of present and future studies and research on what equipment is now available and what is needed—and then develop additional equipment where the need is indicated. The results of this phase of the program are probably several years away from being concrete in terms of equipment. But the research has already been initiated; for example, a Bell System grant is currently enabling Dr. Howard Rusk of the Institute of Physical Medicine and Rehabilitation of New York University Bellevue Medical Center in studies of how Bell System equipment can be adapted to aid those with motion handicaps and how we can best design more such equipment. This project, in which Bell System people will be collaborating will allow patients themselves to test the equipment. We are also initiating studies which attempt to

Watch case receiver enables third person to monitor telephone call and repeat incoming message so that a deaf person can lip read and still participate in the conversation.
find out what kinds of equipment are most effective for different types of speech and hearing handicaps as well as what is additionally needed.

**Speaking and Hearing**

Developing the right kind of tools to help compensate for speaking and hearing deficiencies requires detailed knowledge of the physical speaking and hearing processes, of course. Each process is remarkable.

For instance, talking, with all its importance, is a secondary skill: all of the organs involved in speech have other primary functions. The organs in the mouth and throat, first of all, are involved in breathing, chewing, swallowing and keeping things out of our lungs that don’t belong there. And yet they work together as a team to carry out the secondary function of speaking.

The sound of speech is caused by a series of organic functions, starting in the lungs and proceeding upward into the head. As air comes up from the lungs and passes through the opening in the larynx, it vibrates the vocal cords and produces an audible buzz. This buzz is amplified by the acoustic properties of our resonance chambers—the cavities we have in our mouth, nose and throat. At the same time, it is articulated, or shaped into words, a job that is done for us by movements of the mouth, by muscles of the throat, and by the lips, teeth, cheeks, tongue and palate.

The loudness of our speech depends on how much air is forced out of our lungs. The pitch is the result of the tightness of our vocal cords. The quality of speech depends on the shape and size of our resonance cavities. And the clarity and accent depend on habit and how skillful we are at articulating.

Unlike the speech organs, our hearing organs are designed primarily for one function, hearing. The ear is what scientists call a "transducer." It converts vibrations of the air molecules into nerve impulses which the brain can interpret. A healthy ear is an incredibly sensitive device and covers an enormous range of sound level. The human voice, like a symphony orchestra or the siren of a fire engine, is a parade of vibrations that first reach the outer ear, then travel to the eardrum, on through the middle ear to the inner ear, where tiny nerves are stimulated to carry impulses to the brain. Here, of course, the impulses are recognized as the sound they represent. Incidentally, deterioration of these tiny nerves from noise abuse—overexposure to horns, whistles, the high noise levels of cities and the like—often lessens the ability of older people to respond to and recognize high-pitched sounds.

When others speak, we use our ears to hear what they say. We also use our ears to hear ourselves. As we speak, our own ears tell us if we are saying what we intended to say—and saying it intelligibly. If it doesn’t come out the way we intended it to, we back up and try again.

"Bee hive“ lamps in place of or in addition to bell signals indicate ringing telephone.
SPECIAL NEEDS

This is why people who are totally deaf find it so difficult to speak well. Indeed, when you are talking on the telephone, your voice is carried not only to the ear of the person you're talking to, but also up through the receiver to your own ear. Undoubtedly you would find a phone conversation a pretty strange experience if you were unable to hear your own voice through the receiver.

Bell System Aids

To return to what the Bell System has done for people who have suffered impairment of either of these remarkable processes of speech and hearing, there are a number of ways the handicapped can be helped to gainful employment, as well as relaxed social adjustment to daily living, by communications equipment already in existence. The electronic larynx, for example, has solved a lot of problems for those who have lost the use of their larynx as a result of surgery or paralysis of both vocal cords and are unable to master the technique of esophageal speech—and could easily be one of the solutions for Harry Adams, our typical but fictitious man in Ohio.

In simple language, the electronic larynx is a device that substitutes electronic vibrations for the natural vibrations of vocal cords. If a vocally handicapped person holds it in the proper position against his neck the sound comes out of his mouth. Using his tongue, lips and teeth in the same manner as the normal talker reproducing speech sounds, he can learn to speak conversationally—even with inflections. As somebody has aptly said, "It might not sound like the best voice in the world, but it sounds pretty wonderful to somebody who can't talk at all without one." The device was developed by the Bell System and is sold at cost by local telephone companies to anybody in need of that kind of service. It is also distributed to other countries through the World Health Organization.

Bell System Aids

Equipment for the Deaf

Because partially deaf people vary in their hearing needs almost as widely as people who need prescriptions for eyeglasses, there has to be a good deal of flexibility in the telephone equipment designed to aid them. And so there is. One relatively familiar item of telephone equipment is the special hard-of-hearing telephone set with a small volume control knob in the receiver which amplifies the sound reception comfortably to the proper level within hearing range. There is a similar telephone that amplifies the voice of a person with weak speech who is talking on it. Another telephone, which looks like the other two, has a "push to listen" button beside the volume control knob and works effectively in noisy locations for both hard-of-hearing and normal hearing persons. The "push to listen" button amplifies the voice at the other end of the line and cuts out most of the noise from the background.

For certain types of serious ear damage, such as the loss of capacity to hear by air conduction, we also offer a
"bone conduction" receiver, from which sound vibrations are conducted through the skull, then analyzed by the inner ear and heard in the brain as in normal hearing. Another solution for those with serious hearing problems is the "watch case receiver" which enables a third person to "plug in" on a conversation and repeat what is being said on the other end of the line to a deaf person so that he can lip read what is being said and yet carry on his side of the conversation on his own. It might be additionally noted here that the Teletrainer—a device originally designed for teaching telephone usage—is being used experimentally to enable deaf children to learn to make brief but necessary calls.

By the way, you might think that, of all people, switchboard operators would be expected to have adequate, if not better than average, hearing capabilities. The truth is we’ve supplied thousands, in all kinds of businesses, with small transistorized amplifier devices that plug into their switchboards. When an operator plug her headset into one of these amplifiers, she can adjust the volume to her most comfortable level by turning a volume control knob.

When The Telephone Rings

Of course, conversing on the telephone is just one of the communications problems faced by the person with impaired hearing. First, he has to be made aware of the fact that somebody is trying to reach him—in other words, that the phone is ringing. There are various methods of tackling this, depending upon the degree of his deafness. We can, for example, provide a louder signal. We can also provide a signal in a different frequency range, where his hearing might be less impaired. Indeed, the standard telephone can be equipped with bells with any one of six different frequency ranges at no extra cost. In the area of sound, we offer such extra-strength signals as horns and large gongs (recommended only if you have distant or very understanding neighbors). We can also provide buzzers, which are particularly good when attached to some kind of sounding board, and the Bell Chime* signaling device, which usually is adequate for those with only moderate hearing impairment.

If the hearing problem is particularly acute, we can supply what we call an "Auxiliary Signal Control" device. This is an electrically-controlled switch that causes an appliance to go on when the telephone rings and off when the phone stops ringing. It will control any appliance the user wants to connect with it, such as a lamp to catch his eye or an electric fan to feel on the back of his neck. We have also provided, in some cases, "bee hive" lamps (called that because of their shape) that can be used in place of, or in addition to, bell signals. They light when the telephone rings and, naturally, can be seen to best advantage in subdued illumination.

*Trademark of the Bell System.
SPECIAL NEEDS

At the present time, there is no standard Bell System equipment for use by the totally deaf although special systems have been developed that have been successful in a number of instances. However, the people at Bell Telephone Laboratories are presently working on a standardized sight and touch set as well as other devices to ease these special communications problems in a variety of ways. One experimental set will include a small light the totally deaf person will watch when he wishes to make a call. A steady light will indicate a dial tone. A busy signal will be represented by a light flashing on and off at a rate of one cycle per second. And a ringing signal will show up in the same two-seconds-on, four-seconds-off rhythm that we hear on a regular receiver. When the light flashes irregularly, he’ll know the telephone has been answered. Another experimental set will substitute a little vibrating button, on which the deaf person can place his fingertip, for the light. The message he receives from the person he’s calling can be in the dots and dashes of the Morse code or in some other pre-arranged system. This type of solution is also possible with the visual light system.

So there is indeed help, and hope, for Harry Adams and the millions of other handicapped men, women and children around the country. And we are proud that we’re able to contribute to that help. In the not-too-distant future we hope to be able to offer standard aids to the motion-handicapped and more aids for the blind as well. (Present aids for the blind include a special device for blind switchboard operators.) We are experimenting with this kind of equipment at the present time.

The Bell System claims to have no panacea now—nor does it ever expect to have one—to end all the hardships these people are suffering. But we do have useful equipment and services to offer—and we have them today. Many of them undoubtedly can do jobs they’ve never been assigned to do before.

We are only beginning to cope with speech, hearing, sight and other problems of the handicapped. With continued research and study at Bell Laboratories and on-the-job trial and error experimenting by the local telephone companies, we hope to be able to bring these people better solutions and better communications tomorrow. Meanwhile, we are exerting every effort to make Bell System people and the public aware of the hope made possible by the capabilities of the equipment available today.

Jack-equipped telephone set with optional handset-headset operation is one of the aids of use to the motion handicapped that will be the focus of Phase Two of the current program.
In his article "Services for Special Needs" (page 25), Dr. L. Holland Whitney points out that "the Bell System has felt a traditional sense of responsibility toward the handicapped, in terms of communication." Dr. Whitney himself has been actively committed to implementing that traditional sense; in his capacity as medical director of A.T.&T. he has worked on the Committee on Communication for the Handicapped, which both serves as a clearing house for, and guides the progress of, Bell System effort in this field.

"Communication can mean many things to the handicapped person," says Dr. Whitney. "It may mean an opportunity for a job in the outside world. It may mean the ability to work in a Sheltered Workshop. It may mean the opportunity to live and work in dignity at home.

"Adequate communication doesn't just happen. It requires research, knowledge and know-how of a team—physicians, therapists, engineers, nurses, teachers . . . . Their combined efforts can help not only the disabled, but often also the members of their families, to sign their own 'Declaration of Independence.'"

Dr. Whitney took his M.D. at the College of Medicine of Syracuse University in 1928. He engaged in the private practice of medicine in Brooklyn, N.Y., for about a decade, and later held various positions in industrial medicine. In 1948 he joined the Bell System as medical director of the New Jersey Bell Telephone Company, and on August 1, 1955, assumed the same post at A.T.&T.

Among his professional affiliations, he is vice president of the American Academy of Occupational Medicine and a member of its board of directors; a Fellow of the American College of Physicians, the American College of Preventive Medicine and of the Industrial Medical Association, the American Public Health Association and the New York State and New York County Medical Societies.
SERVICES FOR SPECIAL NEEDS

For the handicapped, methods for communicating are especially vital.

For them, the ability to communicate can substitute for lost mobility, afford contact with other people and enable social, professional and community relationships to continue. Further, it increases their independence and plays an essential part in their rehabilitation.

To make communication easier, and, in some instances, to make it possible at all, the Bell Telephone System has provided equipment and services to meet unusual and special needs. This booklet describes those that are currently available. Still others are in the developmental stages.

If your requirement cannot be met by the equipment and services described in this booklet, ask your Bell Telephone representative to help you choose the right combination of equipment to suit your needs.
TO LET YOU KNOW WHEN SOMEONE CALLS

**Bells In Different Frequencies**
Like the regular phone ring but available in various other frequencies.

**8-Inch Gong**
Can be heard over extensive areas and above a very high level of noise. Not recommended if you have close neighbors.

**Loud Bell**
The regular phone ring with much more volume, but not as loud as the gong.

**Tone Ringer**
A new ringer that concentrates all of the sound energy in a frequency range where the majority of people with impaired hearing can still hear.
Bell Chime Ringer
Set it to your choice of three sounds: musical chimes, regular ring, and a louder ring to be heard at greater distances.

Buzzer
Vibrant buzz becomes even more penetrating when attached to a sounding board such as the panel of a desk or the headboard of a bed.

Signal Lamp
Desk or wall light flashes indicating an incoming call. Ideal for a person who needs to work in a quiet location . . . as well as by someone whose hearing is impaired—either partially or totally. Can be used instead of, or in addition to, the regular telephone bell.

Signal Control
To indicate an incoming call, this device can turn on a reading lamp or a flashing strobe lamp . . . or start an electric fan. It is therefore not only useful for a deaf person—but also for a blind or blind-deaf person.
IF YOU HAVE TROUBLE HEARING OR BEING HEARD

Bone Conduction Receiver
This receiver is designed for use with a regular phone. It is engineered to bypass a defective middle ear—transmitting sound vibrations directly to the inner ear when the receiver is placed on the bone structure behind the ear. The bone conduction receiver can aid persons with a conductive hearing loss.

Headset Amplifier
An aid for switchboard attendants with impaired hearing. A volume control knob allows the operator to adjust the degree of amplification to her needs. No complicated installation: simply plug the headset into the amplifier and plug the amplifier into the switchboard.

Volume Control Hand Sets
Available in three different models for three different needs. For impaired hearing: a small wheel on the hand set lets one family member increase the volume of the incoming voice, and lets another adjust it back for normal hearing. For users with weak speech: a second arrangement allows wheel to adjust volume on outgoing voice. For calls from noisy locations: a third arrangement has a volume control wheel and an additional button which, when pressed, lets you hear, but cuts down on background noise.
PHONE CALLS FOR THE TOTALLY DEAF

**Watchcase Receiver**
A deaf person who can lip read can use a regular phone with the aid of another person. An auxiliary ear-piece attached to the phone lets the helper listen to the incoming voice and relay the message by repeating the words so the deaf person can read his lips. To answer the calling party, the deaf person simply speaks into the regular hand set.

**Tactile-Visual Set**
This instrument converts sound signals into sight signals (via a flashing light) . . . and into touch signals (via vibrations of a half-dollar-size disc). If the signals are coded in some prearranged way—such as the dots and dashes of the Morse Code—the deaf person can read them by watching the blinking light or by feeling the disc with his fingertips. The deaf-blind person, of course, cannot see the light and must depend on his sense of touch, alone. Anyone without speech can send code signals out by pushing the sending button. The deaf or deaf-blind person would need to use the signal control to know when someone calls.
Data-Phone® Service
Data-Phone service provides a link between services used by the handicapped person and other machines, such as teletypewriters, facsimile devices and teletyping equipment.

Teletypewriter Exchange Service (TWX)
A totally deaf person can easily send or receive messages by operating a TWX machine. It works much the same as a standard typewriter. The deaf person can send a message across the street or across the nation to any one of approximately 50,000 subscribers.
TELEPHONE AIDS FOR THE BLIND

**Card Dialer**

For the blind, these pre-punched cards have names in braille at the top. Pressing the card into the slot on a card dialer phone and pushing the start bar automatically dials the number.

**Seeing aid PBX**

The blind make attentive PBX attendants with this instrument. A small box attached to the PBX board has a light-sensitive probe connected to it by means of a wire that reaches the length of the board. In one hand, the attendant holds this probe which buzzes in response to light points on the board. Thus "hearing" the board, the attendant proceeds to move the probe and handle the board with the same adequacy as a person with normal vision.
IF YOU HAVE TROUBLE HOLDING OR REACHING A PHONE

There are various types of headsets . . . but the important feature of all of them is that they enable handicapped people to enjoy "hands-free" communication. All headsets are composed of a transmitter and a receiver with a removable headband.

53-A Type Headset: When a headband is removed, as shown, this versatile unit becomes a lightweight handset.

52-A Type Headset: Headset is fully adjustable to facilitate positioning of the transmitter and receiver.

KS-19796 Lightweight Headset
This headset is outstanding because of its lightness; it weighs less than two ounces. It has a transistorized amplifier, and, to provide the most comfortable fit, it comes equipped with six sizes of plastic earpieces. It is also compatible with switchboards.
4A Key Equipment
Used with a headset. Has a simple ON/OFF switch—which requires hardly any physical motion. Key unit mounts on furniture or a wall. Includes a separately mounted dial.

Jack in Base
This is a telephone set with a jack in the back for a headset.
**Speakerphone**

Two small units in addition to your regular telephone instrument: a loud-speaker to listen to the incoming voice and a microphone for transmitting the outgoing voice. The Speakerphone may be placed at conversational distance from a caller who need not move at all to use this equipment. The effort is equal to holding a conversation with someone nearby.

**Single Button Telephone (with Adjustable Arm)**

When a person is not able to hold a handset, he can use a Single Button Set which has a small ON/OFF switch. Some kind of adjustable arm may be provided to hold the handset in a position convenient for telephoning. In this illustration, we show the Single Button Set with an adjustable arm. The adjustable arms are not offered by the Telephone Company. Information on these items can be obtained from your nearest City, County or State Rehabilitation Center. Your Bell Telephone Marketing Services for the Handicapped Coordinator also has a list of suppliers furnished by Institute of Rehabilitation Medicine, New York University Medical Center.
IF YOU HAVE TROUBLE DIALING

**Touch-Tone® Service**
Buttons are a very easy way to dial. Even where there is paralysis in the hands, a pencil or similar aid held in a utensil holder (on a cuff or splint) can depress the buttons. TOUCH-TONE service is not available universally, so check with your local Telephone Company.

**Trimline® Phone**
This unit may be used by a bedridden or hospitalized person. It enables him to dial while lying down. The weight and size of the handset may be limiting factors for a person with weak fingers. This unit allows the user to "hang up" between calls simply by pressing the button below the dial.

**Card Dialer**
Just drop the pre-punched card into the slot, depress the card, and push the start bar. The card dialer dials your number for you, minimizes dialing errors.

For persons with aphasia who can't read names or retain numbers, a small picture of a familiar person at the top of the card identifies the number being called.
THE VOICE YOU CARRY WITH YOU

Electronic Larynx

When the vocal cords have been surgically removed or cannot produce sound, this device, when pressed against the throat, transmits substitute vibrations into the vocal tract. Word sounds are formed normally by the tongue, lips and teeth. Available in both low pitch range for men and higher range for women. Battery operated. Switch and pitch control lever on inside curve of unit make it easy to handle. Only minimum training and practice are needed in learning to use the electronic larynx.
School-to-Home Service
This service is designed for the student who is away from his regular class.

Children who are physically unable to attend school need no longer miss out on their classwork...or their classmates. This invaluable two-way communication set-up allows a child to participate in lessons as if he were actually “in class”. He may ask questions, or answer them; he may become involved in group discussions or group projects.

Besides being an effective tool for communicating from home to school, this service is equally appropriate for home-to-church communication.

Tele-Class Service
Tele-Class equipment is used when all students of a class are handicapped and physically unable to attend regular class. Up to twenty students, each wearing a headset, may participate, from their own homes or hospitals. The Tele-Class teacher “card-dials” each student into her control board. When this roll call is completed, she can operate her control board to do any of many things:

1. allow all students to hear her and each other
2. speak with each student privately
3. cut off students from hearing each other while she hears and talks with all of them.
4. divide the class into smaller groups for separate discussions
5. transfer half the class to another teacher in another location
6. plug in a tape recorder to present prepared information to the class

Equipment includes a Speakerphone so that the teacher’s hands are free to conduct the lesson.
TELEPHONE ANSWERING SERVICES CAN ALSO HELP THE HANDICAPPED . . .

A handicapped or home-confined person may be comforted to know that he may subscribe to any one of many independent Telephone Answering Services and have his messages accepted, screened and relayed for him. The service is personalized, and the TAS girl can take on special requests—like making periodic check-up calls to the subscriber to insure his welfare and safety.

(The Bell System does not own or operate any telephone answering business; for information, look under "Telephone Answering Service" in the Yellow Pages.)

. . . AND THE HANDICAPPED CAN HELP THEMSELVES THROUGH TELEPHONE EMPLOYMENT OPPORTUNITIES!

A handicapped person does not want to be regarded as helpless. He is anxious to be productive, to be a wage-earner, to show he can contribute to his community through useful employment. And the telephone provides a vehicle through which he can find such employment. Here are some examples of telephone job positions for which employers have hired the handicapped:
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• Screening Mail Inquiries
• Answering Letters
• Making Appointments
• Retaining Current Customers
• Collecting Overdue Accounts
• Coordinating Distribution
• Wake-Up and Reminder Service
• Verifying Employment Application Information
• Material Procurement
• Credit Management
• Customer Service
• Expanding Coverage
• Coordinating Production
• Skip Tracing
• Telephone Answering Service
• Insurance Renewals (car, home)
TOMORROW’S SERVICE AND EQUIPMENT FOR SPECIAL NEEDS

Engineering research and experimentation are constantly in progress at the Bell Telephone Laboratories, with major efforts directed at expanding and improving our special services and equipment. We are dedicated to making the telephone a responsible aid and companion to those who have physical impairments. Right now, we are perfecting such modern equipment as amplification for coin telephones, a coin shelf for use by the handicapped and Picturephone® service.

We regard each technical development we make—not as an end unto itself—but rather, as a step to still further improvements for every subsequent “tomorrow”!
STEPS TO FOLLOW TO SECURE THE SERVICES AND RATES COMMENSURATE FOR THE DEAF POPULATION USING THE TELEPHONE.

By: Gregory C. Kimberlin

Having read the general information brochure concerning the function of the Public Utilities Commission, I have come to the conclusion that the strategy to use is one of direct confrontation. The following are designed to attain the services and rates needed by the deaf population:

(a) Contact Jim Marsters and inform him of my intentions. Attempt to set up, through him, a meeting with key deaf telephone users in Los Angeles.

(b) Contact Speech Indicator users, past and present L.T.P.
persons interested in this area.

(c) Seek their support, and ideas to the proposal.

(d) Prepare a draft, giving specifics and supporting evidence.

(e) Meet with Mr. Bruce Brown of Pacific Telephone & a General Telephone representative to ask assistance, and/or ideas to better present the formal document.

(f) Seek also the support of Pacific Telephone & General Telephone in recognizing the unique situation of the deaf population.

(g) Meet with Jeanette Struckman, Customer Service Representative, indicate intentions, show initial formal complaint and support and seek information regarding proper channeling of complaint.

(h) Await word from the Public Utilities Commission regarding hearing of document.
PROCEDURE FOR FILING FORMAL COMPLAINTS
(from the rules of practice and procedure before the California Public Utilities Commission)

2. (Rule 2) Form and Size. Pleadings and briefs shall be typewritten or printed upon paper not larger than 8½ inches wide and 13 inches long nor smaller than 6 inches wide and 9 inches long, and exhibits annexed thereto shall be folded to the same size. Unless printed, the impression shall be on one side of the paper only and shall be double-spaced, except that footnotes and quotations in excess of a few lines may be single-spaced. Originals of pleadings, if not printed, shall be bound at the top. Reproductions may be by any process, provided all copies are clear and permanently legible.

3. (Rule 3) Title and Number. Pleadings, briefs and other documents shall show the title of the proceeding before the Commission and the docket designation and number assigned by the Secretary.

4. (Rule 4) Signatures. The original of each application, petition, complaint, answer, or amendment shall be signed in ink by each party thereto. If such party is a corporation or association, the pleading may be signed by an officer thereof. Any attorney for or representative of a party shall also sign such pleading, and show his address and telephone number.

Motions, notices, briefs, and petitions for rehearing may be signed by an attorney or representative.

5. (Rule 5) Verification. Applications or amendments thereto shall be verified by each applicant. Complaint or amendments thereto shall be verified by at least one complainant. Answers shall be verified by at least one of the defendants filing the same. If the party filing the pleading is a corporation or association, the pleading may be verified by an officer thereof.

Verification may be made before a notary public or by certification or declaration under the penalty of perjury.

6. (Rule 6) Signature and Verification by Attorney. Except in transfer proceedings (see Rule 35), the attorney for a party may sign and verify a pleading if such party is absent from the county where the attorney has his office, or from some cause is unable to sign and verify such pleading. When a pleading is signed and verified by the attorney, he shall set forth in the affidavit the reasons why the verification is not made by such party.

7. (Rule 7) Copies. (see Rule 11)

8. (Rule 8) Amended Pleadings. Amendments to pleadings, and amended pleadings, may be filed before hearing, provided they are served upon all known interested parties, filed at least five days before the hearing, and contain a certification of service. Thereafter, pleadings may be amended as permitted, or directed, by the Commission or the presiding officer.

9. (Rule 9) Who May Complain. A complaint may be filed by any corporation or person, chamber of commerce, board of trade, labor organization, or any civic, commercial, mercantile, traffic, agricultural or manufacturing association or organization, or any body politic or municipal corporation, setting forth any act or thing done or omitted to be done by any public utility including any rule or charge herefore established or fixed by or for any public utility, in violation, or claimed to be in violation, of any provision of law or of any order or rule of the Commission.

No complaint shall be entertained by the Commission, except upon its own motion, as to the reasonableness of any rates or charges of any gas, electrical, water, or telephone corporation, unless it be signed by the mayor or president or chairman of the board of trustees or a majority of the council, commission, or other legislative body of the city or city and county within which the alleged violation occurred, or by not less than 25 actual or prospective consumers or purchasers of such gas, electric, water, or telephone service.
10. (Rule 10) Form and Contents of Complaint. In addition to being drafted to comply with Rules 2 through 5, complaints shall state the full name and address of each complainant and of each defendant. The specific act complained of shall be set forth in ordinary and concise language and the complaint shall be so drawn as to advise the parties and the Commission completely of the facts constituting the grounds of the complaint, the injury complained of, and the exact relief which is desired.

11. (Rule 11) Number of Copies. The number of copies of a complaint required to be filed is an original and conformed copies equal in number to twelve plus twice the number of defendants.

12. (Rule 12) Procedure Upon Filing of Complaint. When a complaint is filed, the Commission shall mail a copy to each defendant. A defendant shall be allowed ten days from the date of such mailing within which to point out in writing such jurisdictional or other defects in the complaint as, in defendant’s opinion, may require amendment. If it appears to the Commission that defects brought to its attention are so vital that the complaint should be amended, complainant may be required to amend the complaint. The Commission, without argument and without hearing, may dismiss a complaint for failure to state a cause of action, or strike irrelevant allegations therefrom.

If the complaint is in substantial compliance with these procedural rules, and appears to state a cause of action within the Commission’s jurisdiction, the Commission shall serve a copy thereof upon each defendant, together with an order requiring that the matter complained of be satisfied, or that the complaint be answered within ten days after the date of such service. In particular cases, the Commission may require the filing of an answer within a shorter time. Requests for extension of time to answer shall be made to the Commission in writing, with copies thereof to complainant.

FORM OF FORMAL COMPLAINT

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

John A. Jones, Complainant,

vs.

Smith Public Utility System, a corporation, Defendant.

Case No. __________________________

COMPLAINT

The complaint of (exact legal name, mailing address and telephone number of each complainant) respectfully shows:

1. That defendant is (full name and address of each defendant).

2. (Here, and in succeeding numbered paragraphs, set forth fully and clearly the facts constituting the grounds of the complaint and the injury complained of.)

WHEREFORE, complainant requests an order (here state clearly and concisely the exact relief desired).

Dated at ________, California, this ______ day of ____________, 19______.

(Signature of each complainant)

(Signature, address and telephone number of attorney, if any)

Verification *

(See Rules 5 and 6)

(Where complainant is an Individual)

I am the complainant in the above-entitled matter; the statements in the foregoing document are true of my own knowledge, except as to the matters which are therein stated on information or belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on ________ at ________, California.

(date) (name of city)

(complainant)

* Where execution occurs outside California, verification must be made in accordance with the law of the state where execution occurs.

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California
PUBLIC UTILITIES COMMISSION

THE COMMISSION

PETER E. MITCHELL
President
WILLIAM M. BENNETT
A. W. GATOY
WILLIAM SYMONS, JR.
FRED P. MORRISSEY
Commissioners

State Building, San Francisco
State Office Building, Los Angeles

Revised August, 1967
ITS HISTORY

The Public Utilities Commission (originally the California Railroad Commission) was created by amendment to the State Constitution in 1911 and implemented by legislation effective in 1912.

This act and subsequent legislation were codified in the Public Utilities Code, effective in 1951. A 1917 law provided for regulation of passenger buses and common carrier trucks, hauling for the public for hire. The Commission was given jurisdiction over additional highway carriers and city carriers in 1935 and over household goods carriers in 1951.

ITS DUTIES

The Public Utilities Commission is charged with regulation of intrastate rates and service of more than 1,500 privately owned utilities and transportation companies serving millions of Californians.

These include gas, electric, telephone, water and steam heat utilities; railroads, buses, trucks, airlines and vessels transporting freight or passengers in intrastate commerce; warehousemen, wharfingers, carloaders and pipeline operators. In addition to common carrier trucks, more than 16,000 operate for-hire trucks under a permit system.

The Commission does not regulate municipally owned or district owned utilities or transportation systems, unless ordered by the Legislature, or "mutual" water companies which serve only stockholders or members at cost.

It is the duty of the Commission to secure to the public adequate service at rates that are fair and reasonable, both to customers and shareholders. The law prohibits deviation from authorized rates or discrimination in charges or service.

Subject to certain exceptions, utilities which want to issue stocks or bonds or other securities or sell, transfer, lease or encumber utility property must obtain Commission authorization. Books of account must be kept and annual and other reports must be made as required by the Commission.

MILLIONS OF DOLLARS SAVED

To protect the public interest the Commission appears before federal agencies and courts as an advocate of the interests of Californians in interstate proceedings. Commission action has saved ratepayers of this state many millions of dollars.

Safety is of major concern to the Commission and better warning signals steadily are being installed at railroad-highway grade crossings. State funds aid cities and counties in paying for better signals, for crossing gates and for overpasses and underpasses, which are paying big dividends in saving lives.
The Commission also establishes rules for overhead power lines, for natural gas transmission and storage and for railroad operations.

**HOW RATES ARE SET**

The charges Californians pay for intrastate transportation and utility service result from rates authorized or permitted by the Public Utilities Commission.

Acting in behalf of the public the Commission holds rates and fares at the lowest levels which will enable utilities to earn "just and reasonable" returns on their investments. The United States Supreme Court has ruled that a public utility is constitutionally entitled to an opportunity to earn a reasonable return upon its investment which is lawfully devoted to the public use.

Present rates, having been so established, are presumed to be fair and reasonable. If an application for an increase in rates or fares is filed the burden of proof always is upon the applicant to show that additional revenue is necessary to provide a fair and reasonable return. Except in minor cases public hearing is held.

**PUBLIC HEARINGS HELD**

After an application for a rate increase is filed with the Commission, a public hearing is scheduled and announced so that everyone interested may attend. Hearings, in a major case, may require several days, extending over a period of weeks, with intervals between, if necessary, to allow all interested parties time to study exhibits and testimony presented and to prepare cross examination and their own testimony.

The applicant first states the reasons an upward adjustment of rates is requested. Company officials testify under oath, at a public hearing which anyone may attend, as to the utility's investment, its actual and requested earnings, its revenues and operating costs. These witnesses may be cross-examined by public representatives and by a Commission attorney, acting in the public interest. Commission staff experts challenge any statement or company claim they do not believe to be accurate or justified, and may present evidence on all issues.

The contents of this brochure constitute a very general statement of the duties and procedures of the Public Utilities Commission and are not to be construed as exhaustive of any of the subjects discussed.
Then, or at a later hearing, all interested parties will be heard. Public representatives may offer testimony by their own expert witnesses, who may be cross-examined by any of the parties in interest. Anyone with information which has a bearing on the case may testify.

As a result of intensive study of all factors involved, the Commission staff also presents testimony by engineers, accountants, rate experts, or others. When all the evidence has been heard the case is taken under submission.

All the facts put into evidence are the basis for the decision by the five Commissioners. An application may be denied, authorized in part or in whole, or with such modifications as the Commission finds to be justified by the facts.

Petition for rehearing of any case or for further hearing may be made to the Commission by any party to the proceeding. If this petition is denied, recourse may be had to the California Supreme Court. No California court, except the Supreme Court, and no other state agency or official has jurisdiction to review any decision or order of the Commission.

**COMMISSION INVESTIGATES EARNINGS**

Hearings on rates may be initiated by the Commission, and it has ordered investigations which have resulted in reductions by charges amounting to millions of dollars. The Commission staff continuously reviews earnings of regulated utilities. If earnings are found to be substantially above the level found to be reasonable in a utility’s latest rate proceeding, the Commission may require an appropriate adjustment in rates. If consultations fail, a formal investigation may be ordered. After public hearings, with opportunity for all parties to be heard, the Commission may, if it is found to be justified, order a reduction in charges.

**CALIFORNIA UTILITY RATES**

It is interesting to compare rates in California with those paid by customers in other states. A study as of June 30, 1967, shows that among the 25 largest cities in the United States, the combined monthly charges for 100 cubic feet of gas, 250 kilowatt hours of electricity, and individual line residental telephone service were lowest in San Francisco, with Los Angeles and low and San Diego tenth. For exactly the same amount of service for which San Francisco pays $16.25 per month, Los Angeles pays $16.24 and San Diego $16.31. Charges in other cities range upward to a high of $20.75 per month, Los Angeles has the lowest basic rate for one-party telephone service of any of the 25 cities. With San Diego and San Francisco charges for standard service both lower than in the other 22 cities.
IF YOU HAVE A QUESTION

... OR A COMPLAINT

The Commission and its staff always are ready to give the public all available information on regulation of public utilities and transportation companies under its jurisdiction. They operate under tariffs and rules which are on file with the Commission and also are open to public inspection at company offices.

The company should first be asked for information on rules, service, rates or fares. Most questions will be answered and most complaints satisfactorily settled. If not, the Commission staff upon request will investigate promptly, taking the matter up with the company and attempting to arrive at a reasonable adjustment of the matter.

Employees of the Commission assigned to receive and to take action on complaints give the most courteous attention to all requests. They will make every effort to speed investigation and to obtain prompt correction of any service found to be inadequate.

If the Commission staff is unable to obtain satisfactory adjustment the complainant may file a formal complaint, naming the utility as defendant. Usually this results in a public hearing, with sworn testimony, and a formal Commission order deciding the issues. The burden of proof in such a case rests upon complainant.

DISPUTED UTILITY BILLS

If a customer questions the amount of a utility bill he should ask the company for an explanation. If he still believes the bill is incorrect, the amount claimed due may be deposited with the Commission to avoid discontinuance of service. The remittance should be payable to the California Public Utilities Commission and a copy of the bill, with reasons for the dispute, should accompany the deposit. The Commission will investigate thoroughly and refund any excess charge to the customer.

WHERE TO GET INFORMATION

In Northern California, Fifth floor, State Building, McAllister and Larkin Streets, San Francisco. Telephone 557-0617. Address letters to: Secretary, California Public Utilities Commission.

In Southern California, Room 5100, State Office Building, 107 South Broadway, Los Angeles. Telephone 620-2357. Address letters to: Director for Southern California, California Public Utilities Commission.
WHY'S THE ANSWER?

Here are some of the most common questions asked, and the answers, which may explain what you have wanted to know about the Public Utilities Commission or the rates, rules or service of a utility.

Q. Are Commission records public?
A. All applications and formal complaints which are filed and the information they contain are matters of public record and may be inspected by the public. All annual reports of utilities are available to the public in both the San Francisco and Los Angeles offices of the Commission. Exhibits and evidence presented at public hearings, letters which have been made a part of the record in any case, the transcript of testimony and the Commission's decision in the proceeding are matters of public record and are open to inspection.

Q. Upon what basis may a public utility seek an increase in rates?
A. Regulated utilities provide service at rates established after public hearings and study of all factors by the Public Utilities Commission. Afterward, any major additional expense such as higher taxes or increased wages, would tend to reduce the earnings of a company, perhaps below the amount found to be just and reasonable. According to law, if that occurs, the utility is justified in filing an application for higher rates.

In an inflationary period utilities and transportation companies may face rising costs which reduce their net income. Inflation, in such instances, is the real reason rates and fares have risen.

Q. Does the Commission allow political donations and social club dues as chargeable operating expenses in determining rates and fares of regulated companies?
A. No. For rate-making consideration such expenditures are not chargeable as operating expenses. They must be paid for out of net return, by shareholders and not by customers.

Q. Why are minimum rates established for truck carriers who haul for the public for hire under permits? Why are they not allowed to charge as low a rate as they wish?
A. State law provides that minimum rates are to be established when necessary and that rates shall not be discriminatory. Before enactment of the Highway Carriers' Act, rate cutting was common and many truck operators went bankrupt or quit operating because they were unable to earn as much as their costs of operation. The public suffered because continued rate cutting brought chaos to the trucking industry and this meant uncertain and dependiable service. Rates were discriminatory and unstable, with higher rates for some shippers and lower rates for others.