

A Model Demonstration Center of Assistive Devices for Hearing-Impaired People

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The Fort Lauderdale Oral School organized a model demonstration center of assistive devices for hearing-impaired people in November, 1981. It is a permanent installation of operational technical devices for hard-of-hearing and deaf persons. The Assistive Devices Center (ADC) is manned during open hours by members of The Telephone Pioneers of America, a volunteer organization of active and retired telephone company employees. All of the equipment installed in the ADC has been contributed by manufacturers and dealers.

The ADC offers an opportunity for hearing-impaired individuals, and those who work with them, to experience a broad range of devices, from visual signalling devices to hearing enhancement devices for use in public buildings. Some of the devices are intended for use by individuals in homes or offices and some are intended for use in public meeting places.

The availability of a growing number of assistive devices makes it difficult for consumers and those counselling them to determine which devices would be most helpful under different circumstances. The ADC is a model program in which equipment selection, installation, staffing and public relations are being tested with the hope that over a period of time a large number of such centers will be established throughout the nation.

Since the end of World War II the availability of technology to enhance the lives of hearing-impaired individuals has increased dramatically. It began with the transistor which brought us the miniturized hearing aid. Now with a host of other new components and techniques, truly exciting developments have taken place throughout the developed nations of the world to apply these technologies to making life more comfortable and happier for persons with hearing impairments. The arrival of the microprocessor and all of its resulting opportunities in the form of personal computers and new communication

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systems, makes the future more challenging and exciting for persons concerned with the habilitation and rehabilitation of the hearing-impaired population of our nation.

In *Future Shock*, Toffler (1970) reminds us that the vast new developments impacting upon society will create the problem of deciding which choices should be invested in for the benefit of people. This has been the case in recent years for hard-of-hearing individuals who are beginning to learn of the exciting devices that are now commercially available and may be applied to meeting their needs in the home, the workplace, their house of worship, and in many other aspects of their community living. Given these developments, a demonstration center of assistive devices for hearing-impaired people is an idea whose time has truly come. Such an assistive devices center has been established at the Fort Lauderdale Oral School, Fort Lauderdale, Florida, and it is hoped this type of center will be replicated throughout the nation.

Rehabilitation specialists, audiologists and hearing aid dispensers have demonstrated, and in some instances sold, various assistive devices to individual clients over the years. Frequently such activities have concentrated on devices from a relatively limited area. The Audiology and Speech Pathology Service at the Veterans Administration Medical Center, Birmingham, Alabama, has created a model program in serving the needs of hearing-impaired veterans and their families. Gwenyth R. Vaughn, Chief, has conceptualized and conclusively demonstrated how many assistive devices, including the standard telephone hand set, can improve therapy service delivery in a cost effective manner (Vaughn, 1981). At the National Technical Institute for the Deaf, Rochester, New York, Diane Castle has led the development of a comprehensive program to train deaf and hard-of-hearing students to use the telephone (Castle, 1980). In addition Dr. Castle designed a traveling display of many of these devices and others for hearing-impaired people which has been shown at conferences and conventions across the country. The New York League for the Hard of Hearing is another organization which has consistently maintained an active supply of certain assistive devices and been able to demonstrate many others to clients who might be expected to benefit from them.

While collecting data for my doctoral dissertation in Sweden in 1972, I was impressed with the philosophy that fitting a hearing aid is the beginning, not the end, of the rehabilitation process for a hearing-impaired person (Fellendorf, 1974). In virtually every hearing and speech center visited, there was a special room with a display of assistive devices for demonstration to the hearing-impaired person who had recently been fitted with a hearing aid. These devices included flashing light systems, vibrating bed alarms, telephone devices, acoustic cushions, and loops for helping to hear radio and television. They were on display to enable individuals to try them out and determine which would be most helpful. In the Scandinavian countries when a decision

is made, arrangements are made through the appropriate government agency for the products to be delivered to the client's home and installed by state-employed engineers.

While the method of acquisition and installation of these devices might prove to be different in the United States, I was nonetheless impressed with the philosophy that the hearing aid alone is rarely enough to enable the hearing-impaired person to function normally in all situations. With this background and something of an inspiration, I returned to this country and prepared a formal description of a similar display for the benefit of deaf and hard-of-hearing persons here.

There are five basic elements necessary in the creation of a demonstration center of assistive devices for hearing-impaired people:

1. *Motivation*: Someone has to believe it is desirable and worthwhile to create such a center and be willing to work at bringing it about.
2. *Space*: There has to be sufficient floor space, wall space, security and other amenities available for the demonstration center.
3. *Equipment*: By definition, the purpose of the demonstration center is to demonstrate technical devices for hearing-impaired individuals and those who live and work with them. Obviously, working models of these devices are necessary.
4. *Staff*: There must be a person who understands the operation of the equipment, can train non-technical staff (either paid or volunteer) to understand the equipment and can describe it and demonstrate it to visitors.
5. *Public Awareness/Public Relations*: A mechanism is necessary to bring the demonstration center to the attention of potential visitors and users; i.e., consumers, families and professionals who will refer clients to the center.

THE FORT LAUDERDALE DEMONSTRATION CENTER OF ASSISTIVE DEVICES FOR HEARING-IMPAIRED PEOPLE

The following observations relate to the five basic elements listed above.

Motivation

In this instance the motivation came from a recognition that there was really no place in the United States where hearing-impaired individuals can see an active demonstration of currently available assistive devices.

The Fort Lauderdale Oral School, a facility with classrooms, dormitories and other buildings ideally suited for an educational institution, had few students in the Spring, 1980, when Fellendorf Associates, Inc. of Washington, D.C. was called in as a consultant. A farsighted Board of Directors readily accepted the concept of a five-year development program, in which the facility would be used as a community resource in addition to being an educational facility. Therefore, the Board of Directors enthusiastically endorsed

the proposed idea of utilizing some portion of the school building for a demonstration center of assistive devices for deaf and hard-of-hearing neighbors in Broward County and adjacent political subdivisions.

The Telephone Pioneers of America was organized many years ago to be a community service organization of active and retired telephone company employees. The Gold Coast Chapter and the South Fort Lauderdale Council of the Telephone Pioneers of America immediately saw in the demonstration center an opportunity to fulfill their commitment to community service utilizing their knowledge, resources and the commitment to hearing-impaired individuals.

Space

The Fort Lauderdale Oral School has an educational building which includes eleven sound-treated classrooms approximately 30' x 30' in size. The Educational Building is on the Oral School campus where there is an active program underway on behalf of deaf children from the local community and from distant points. There are teachers and administrative staff who are familiar with the need for assistive devices by hearing-impaired people, even though their daily duties do not permit them to actively man the demonstration center. The schoolgrounds are enclosed and there is controlled access to the campus and to the buildings. The classroom selected for the demonstration center can be reached without going through the living quarters of the children, administrative offices, or other classrooms. Electrical outlets are plentiful.

Equipment

The equipment currently contained in the demonstration center is described briefly in the Appendix. Each item of equipment is on long-term loan by the manufacturer or agent at no cost to the school. It is understood that a manufacturer can withdraw equipment at any time, but equally important, the manufacturer may update its product line by replacing an obsolete unit with a current version.

The equipment is installed on pegboard across one wall of the ADC. Switches are placed on the front of the pegboard so that the devices can be turned off and on individually and through a master switch.

Not every manufacturer or dealer of assistive devices for hearing-impaired people is represented in the equipment on display at the ADC. Those manufacturers which were approached first and which forwarded equipment promptly were included among the units on display. Racks with space for literature from manufacturers of devices which have application to hearing-impaired people are available. Other manufacturers are encouraged to send literature to be given to ADC visitors. Over time some manufacturers may be asked to withdraw their demonstration units to be replaced by others

whose equipment performs a similar function.

In addition to the working models of equipment and the descriptive literature, literature on national and regional organizations concerned with hearing-impaired people is on display. For example, membership information of the Consumers Organization for the Hearing Impaired, Inc. is available to visitors who would like to learn about this national organization committed to furthering the interests of hard-of-hearing persons.

Staff

The operation of a center of this type requires several kinds of staff support: (a) individuals to man the center and to welcome visitors, and (b) staff to maintain the equipment when some difficulty arises, or to install new equipment which is to be added. Staffing requirements at the ADC are being met by the Telephone Pioneers of America. Members of the South Fort Lauderdale Council assisted in designing the installation, mounting the equipment and ensuring that it was operating properly. These same representatives continue to maintain the equipment and are responsive to requests for repairs and for installing new devices when received. All of these services are contributed at no cost to the Fort Lauderdale Oral School.

The day-to-day manning of the ADC is carried out by the Life Members Chapter whose membership is made up of retired Telephone Company employees. One member accepted the responsibility of being the coordinator of the volunteer group and arranged for volunteers to come on a regular scheduled basis to work at the center. In addition, these volunteers address envelopes in response to written inquiries from throughout the nation about the ADC. These mailings consist of a copy of the ADC brochure and such other specific information as may be readily available from other sources at no cost.

The ADC in Fort Lauderdale is not intended to be a national information center. It is intended to serve those from the South Florida area. This is an important distinction because resources are not available, nor is staff available, to respond with copies of all the literature on devices that are on display at the center or to handle individualized responses to inquiries. This is undoubtedly a disappointment to many people from other parts of the country who write to the ADC for information.

I serve as the overall coordinator and director of the ADC in addition to my role as educational consultant to the Fort Lauderdale Oral School. As coordinator, I review new products for display, prepare background material on the products for use of the volunteers who man the center and answer inquiries, and work with others on publicizing the center and encouraging its use by local citizens. This responsibility is carried out by me with periodic visits to Fort Lauderdale from my office in Washington, D.C. Thus, much of the correspondence, telephone communications, and other coordination is

done by letter and telephone from a site some distance from Fort Lauderdale.

The staff of the Fort Lauderdale Oral School is peripherally involved with the ADC. In an emergency situation (e.g., when a visitor arrives completely unannounced) a member of the school staff may take the time to conduct a brief tour. In general, however, unannounced visitors are discouraged during non-scheduled hours because the school is not prepared to fulfill this function in addition to carrying out the educational duties which are the primary reason for their being on the campus. Telephone calls are handled through a telephone number manned by the Life Members of the Telephone Pioneers of America, which has been announced publicly and is on the ADC literature. The school secretary/receptionist handles direct calls to the school and refers them directly to the Telephone Pioneers for action.

Public Relations/Public Awareness

While it would be nice to say that having created a unique facility for hearing-impaired people in South Florida, the public has beaten a path to the door to see the ADC, this has not happened. An active program to make various publics aware of the Center must take place if it is to be successful and perform the job it was intended to perform. For example, at the opening of the Fort Lauderdale Demonstration Center of Assistive Devices for the Hearing-Impaired, arrangements were made for a major media event. Also, through the courtesy of the Southern Bell Telephone Public Relations Department, a substantial number of brochures describing the ADC were printed and made available for distribution.

Various national organizations, including the Consumers Organization for the Hearing Impaired, have actively publicized the Fort Lauderdale Demonstration Center of Assistive Devices for Hearing-Impaired People through press releases, through coverage in their journals and newsletters, etc. This has resulted in a continuing flow of inquiries from individuals from across the nation who would like to get more details on the Center, many with the idea of replicating it in their own communities.

Presentations at professional meetings, including the Florida Speech and Hearing Association and the American Academy of Rehabilitative Audiology, represent another step toward alerting professional colleagues of the existence of the Center and of encouraging replication of the Center in other parts of the country. These presentations also provide professionals associated with the Fort Lauderdale Oral School the opportunity to identify the Oral School's fine program for meeting the needs of many hearing-impaired children who are in need of residential placement and whose parents are seeking for them an educational program which focuses upon the teaching of speech, lipreading and the use of residual hearing.

Continuing efforts to publicize the ADC in Fort Lauderdale and the surrounding municipalities is necessary and is continuing. Speech and hearing

clinics, ear, nose and throat physicians, senior citizens organizations, religious organizations, organizations representing parents and local groups of hearing-impaired individuals are being approached. These efforts are being coordinated by the Auxiliary and Parents Group of the Fort Lauderdale Oral School and the Southern Bell Telephone Company. No professional public relations individuals have been engaged to carry out this effort to date, although over a period of time and with expanded resources such might be the case in the future.

CONCLUSION

In conclusion, each individual concerned with the acoustic-auditory habilitation and rehabilitation of deaf and hard-of-hearing persons is encouraged to actively consider the creation of a demonstration center of assistive devices for hearing-impaired people within their own setting. The conditions which made it possible for such a center to be established in Fort Lauderdale have been described in this paper and it is agreed that some of these conditions may appear unique. If the motivation exists, however, many other parts of the country could replicate this setting and provide a distinct community asset to their hearing-impaired population. If the initial element of motivation exists, the other elements of space, equipment, staff and public relations are possible.

Every audiologist engaged in rehabilitation, should seriously consider the potential for this stride forward in helping hearing-impaired individuals to cope with their hearing loss through the use of available technical devices. It is truly an idea whose time has come. Hopefully, members of the Academy of Rehabilitative Audiology will see it as such and move ahead.

REFERENCES

- Castle, D.L. *Telephone Training for the Deaf*. Rochester, New York: National Technical Institute for the Deaf, 1980 (Available from the Alexander Graham Bell Association for the Deaf).
- Fellendorf, G.W. *An Eduhealth Delivery Service Index*. Washington, D.C.: Alexander Graham Bell Association for the Deaf, 1974.
- Toffler, A. *Future Shock*. New York, New York: Random House, 1970.
- Vaughn, G. *Alternative Listening Devices for Hearing-Impaired Older Adults*. Paper delivered at the Mini Conference on Elderly Hearing-Impaired People, White House Conference on Aging. Washington, D.C., January 11-13, 1981.

APPENDIX

ASSISTIVE DEVICES AT THE ASSISTIVE DEVICES CENTER (ADC) FORT LAUDERDALE ORAL SCHOOL FORT LAUDERDALE, FLORIDA

Listed below are the assistive devices on display at the ADC in Fort Lauderdale at the time this paper was prepared.

Telephone Devices

All of the following devices are available from local telephone companies at a price determined by local tariffs.

Name: 8-Inch Telephone Gong

Description: The gong is a very loud telephone bell in the bass frequency range for people with severe hearing problems. It can be heard over high level background noise and at a considerable distance.

Application: While designed for use in factories and noisy environments, the 8-inch Gong can be used for people with profound hearing losses to alert them that the telephone is ringing. In an apartment house, the sound can be very disturbing to other residents, as it can be heard through walls and doors, so it should be used only where such disturbance will not occur.

Name: Tone Ringer

Description: The Tone Ringer concentrates more of the telephone bell's sound energy in a frequency range which the majority of persons with impaired hearing can hear more easily.

Application: This is for individuals who have selective hearing losses and who can be helped to hear the telephone ring better by adjusting the tone of the telephone ring. It can be used with or without a hearing aid.

Name: Amplifying Telephone Hand Set

Description: This telephone hand set has an adjusting wheel which increases the volume of the voice being received. Another model is available for individuals with a more severe hearing loss. It is equipped with a high-volume button which provides additional amplification. The volume on both sets can be turned down to a normal level.

Application: This is suitable for persons with moderate to severe hearing loss who may or may not be wearing a hearing aid. Simply hold the hand set to the ear and adjust the volume to a comfortable level.

Name: Signal Man

Description: This is an aid for persons who cannot hear the telephone ring. Any lamp, when plugged into the unit, will flash on and off each time the telephone rings. If the lamp is off, it will flash on at each ring. If the lamp is on, it will flash off at each ring. An additional feature is a small neon pilot light on Signal Man to indicate that the system is working.

Application: For someone who is blind and deaf, a small electric fan, when plugged into the Signal Man, will signal that a telephone is ringing by gently blowing air toward the person. Any electrical device may be plugged into the Signal Man and be activated when the telephone is ringing. This is appropriate for profoundly deaf persons or moderately hard-of-hearing persons who have difficulty hearing the telephone ring. The Signal Man is generally located close to the telephone.

Name: Telephone Bell

Description: The volume of the telephone bell can be adjusted on all telephones. Basic desk and wall telephones may have louder bells than other telephone sets. Bells will sound louder and clearer if the phone is placed on a hard surface. Extension ringers or extension telephones in other rooms may also help a customer hear a telephone ringing.

Application: For persons with moderate to severe hearing loss, with or without a hearing aid, adjusting the volume of the telephone bell and placing extension ringers in different rooms will often help the person who would not otherwise hear a normal telephone bell ringing in only one location.

Name: Telephone Adapter

Description: Most Bell System telephones emit an invisible electromagnetic field which can be picked up by hearing aids which have a telephone switch. This enables the hearing aid user to hear the voice coming over the telephone line. Most telephones that do not have this electromagnetic field can be modified. Those few styles that cannot be modified can be used with a Telephone Adapter. The adapter does not amplify sound; it simply generates an electro-magnetic field on which a hearing aid equipped with a telephone pickup feature depends for proper operation.

Application: This adapter is useful only for persons who wear hearing aids which have a telephone pickup switch (T-switch). If a telephone does not have sufficient electromagnetic leakage, the adapter will add sufficient leakage to permit it to be used with a hearing aid having a T-switch. (Phonic Ear Corporation, 250 Camino Alto, Mill Valley, California 94941; Telephone (415) 383-4000, has a similar instrument called Phone Ear.)

Teletypewriter Systems

Name: TDD - Telephone Communication Device for the Deaf

Description: Sometimes referred to as a TTY, this is a typewriter-like device which enables a person who hears little or nothing to communicate over normal telephone lines with another person having a similar instrument at the other end. Two TDDs are necessary, one at each telephone, for communication to take place.

Application: TDD is available to purchase or, in some areas, as a tariff item from the local telephone company to deaf and hard-of-hearing persons as well as relatives, friends, business establishments and other locations with which a deaf person may want to communicate. One must be able to type, although one or two finger typing is adequate. Many telephone companies offer reduced rates for long distance calls by individuals using TDD devices as the communication is slower than normal speaking and listening. A person can read (his) own words, and the words of the person at the other end of the line, on a piece of paper or on a readable display of lights on the TDD, depending on which model TDD is being used.

Manufacturer/Distributor: There are a number of these items on the market. The one on display at the Fort Lauderdale Demonstration Center is manufactured by:

C-Phone, Incorporated
553 Wolfner Drive
Fenton, Missouri 63026
Telephone (314) 343-5883 — Voice and TTY

Other Manufacturers include:

American Communication Corporation
180 Roberts Street
East Hartford, Connecticut 06108

Krown Research
1917 Greenfield Avenue
Los Angeles, California 90025

NY-NJ Phone TTY for the Deaf
14-25 Plaza Road
Fairlawn, New Jersey 07410

Specialized Systems, Inc.
11558 Sorrento Valley Road, Building 7
San Diego, California 92121

Teletym Corporation
P.O. Box 2817
Seal Beach, California 90740

Phonics Corporation
814 Thayer Avenue
Silver Spring, Maryland 20910

Estimated Cost: C-Phone 1A: \$695.00 each. Pocket Phone II: \$199.95 each

Hearing Enhancement Systems for Large Areas

Name: Infrared Public Address Transmission System

Description: This system consists of a transmitter and receiver. Sound from a movie screen, a speaker's rostrum, TV, a stage or pulpit, is transmitted over a beam of light to any number of individuals equipped with infrared receivers in the audience.

Application: This is intended for people with moderate to severe hearing losses, with or without hearing aids, who need assistance in hearing a speaker from a distance. The receiver is in the form of a small stethoscope and has a volume control. The receiver operates on a rechargeable battery which should be removed from the receiver and recharged after each use.

Manufacturer/Distributor: IPAS International Corporation, 1440 Broadway (Suite 2250), New York, New York 10018.

Estimated Cost: Transmitter is approximately \$150.00. Receiver with headphone is approximately \$150.00.

Name: Ampli-Sound

Description: This system consists of a transmitter which broadcasts a low-power AM radio signal and an AM radio receiver. The signal from the transmitter can be picked up by any AM portable radio carried by a hard-of-hearing listener and which is tuned to a designated frequency.

Application: This is intended for use in theaters, churches, and other places of public assembly where hearing-impaired people may be trying to hear an individual or sound coming from a distant source. One need not purchase a special receiver but can use any ordinary radio receiver like those purchased in radio shops or department stores. Upon entering a theater equipped with Ampli-Sound, individuals are advised of the correct frequency to which they must tune their radio. Then they may sit anywhere in the audience and hear the sound amplified from the stage, pulpit, screen, etc.

Manufacturer/Distributor: Cinema Radio Corporation, 1 Lincoln Plaza, New York, New York 10023.

Estimated Cost: Approximately \$1,500 for the transmitter. Receivers are provided by the listeners and generally can be purchased from \$25 up at local stores.

Name: Personal FM System

Description: This is a transmitter/receiver FM system utilized in educational settings by children and youth who are wearing hearing aids. It is intended to increase the sound of the teacher's voice (as well as each pupil's own voice) so that the person at a distance can be heard more effectively. It operates on the principle of a radio transmitting station using FM signal.

Application: At present this equipment is authorized for use by the FCC in educational establishments only, but it is expected to be available for use in churches, theaters, auditoriums, etc. in the near future. The teacher wears a small transmitter on a cord around her neck. When she speaks, her voice is transmitted over FM radio waves to the person wearing an FM receiver. The FM receiver receives the teacher's amplified voice and delivers it to the student's hearing aid.

through a direct wire connection or through an induction loop. The system works in a classroom, auditorium or playground and is not adversely influenced by electrical disturbances in the area. Signals are transmitted through wall, ceilings, around corners, and not distracted by sunlight.

Manufacturer/Distributor: Phonic Ear, Inc., 250 Camino Alto, Mill Valley, California 94941 (Telephone (415) 383-4000).

Estimated Cost: Transmitter No. 442T: approximately \$360. Receiver No. 442R: approximately \$350. Batteries are rechargeable in a recharging device which is also available.

Name: Williams Sound-Personal PA Broadcasting System

Description: This system consists of a transmitter which broadcasts a low power AM radio signal and a set of battery-powered wireless radio receivers. The receivers are fixed tuned to the transmitter frequency and may be used by a hearing-impaired person who has a hearing aid or by someone who has no aid.

Application: These systems have been used primarily in churches and other houses of worship though they could be used in any building where there are hearing-impaired persons assembled. The system enables a person with the radio wireless receiver to sit anywhere within the building and hear the pastor, priest or rabbi clearly and without strain. If one has a hearing aid with a telephone switch, a small induction loop is available to enable the hearing aid wearer to hear the speaker's voice through his or her own hearing aid.

Manufacturer/Distributor: Williams Soundcorp. 6844 Washington Avenue South, Eden Prairie, Minnesota 55344 (Telephone (612) 941-2896).

Estimated Cost: Basic Personal PA Broadcasting System consisting of power unit, transmitter, three (3) Receivers with batteries and earphones, and all accessories for a normal installation: \$375.00.

Other Products

Name: Amplifier with Built-In Speaker

Description: This is a small, battery-operated 200 mW audio-amplifier which increases the sound of a person's voice, radio or television signal, etc.

Application: This can be used by persons with moderate to severe hearing loss who may or may not be wearing hearing aids. The amplifier may be held next to the ear, placed on a bridge table, breakfast table, or used in an automobile to increase the volume of sound coming from a microphone connected to the amplifier. The amplification provided is the equal of low-level hearing aids, but is not the same as powerful hearing aids normally required by profoundly deaf people. Using the Amplifier with Built-In Speaker, persons wearing hearing aids get an increased signal into their hearing aid(s) and will thereby benefit from the use of this device in noisy situations. Hearing aids with telephone switches may be used too.

Manufacturer/Distributor: Radio Shack, a Division of the Tandy Corporation, Fort Worth, Texas 76102. Available at all local Radio Shack stores throughout the United States.

Estimated Cost: Archer Amplifier with Built-In Speaker Catalog #277-1008A: \$11.99. Dynamic microphone, Catalog #331034A: \$6.99. 9-volt battery: approximately \$1.50.

Name: Doorbell and Telephone Transmitter

Description: A small transmitter device is connected by two wires to a telephone or doorbell and then plugged into any ordinary wall outlet. When the telephone or the doorbell rings, one or more receivers located elsewhere in the home will cause a light to flash, a fan to blow, or some other electrical device to be activated.

Application: This device is intended to be used in homes where special wiring is neither desired nor available to connect a doorbell to lights in different parts of the home. The signals are transmitted from the transmitter plugged into the wall outlet to one or more receivers through the wiring in the walls. Because it requires no additional wiring to be run through the house, this system is extremely convenient to install in apartments.

Manufacturer/Distributor: Nationwide Flashing Signals System, P.O. Box 6146, Silver Spring, Maryland 20906.

Estimated Cost: \$98.95 for a transmitter and one receiver. \$47.50 for additional receivers.

Name: Doorbell, Telephone or Smoke Alarm Receptacle/Receiver

Description: This is the receptacle/receiver which receives a signal from the doorbell, telephone or smoke alarm transmitter.

Application: A number of these receivers may be placed within a home or even in the home of a next door neighbor to indicate that the telephone or doorbell is ringing or the smoke alarm has gone off. No special wiring is required; the unit is merely plugged into a wall outlet and then a lamp, fan, etc. is plugged into the receptacle. If desired, the receptacle/receiver can be moved from one part of the house to another where there is need for the signal to be received in a different location.

Manufacturer/Distributor: Nationwide Flashing Signals System, P.O. Box 6146, Silver Spring, Maryland 20906.

Estimated Cost: If purchased separately, \$47.50 each.

Name: Bed Vibrator with Variable Speed Control

Description: This item is screwed onto a person's bed. When the electric alarm goes off, the bed vibrates for as long as the alarm rings.

Application: This is intended for deaf and hard-of-hearing persons who are not awakened by an alarm clock with or without a flashing light.

Manufacturer/Distributor: Nationwide Flashing Signals System, P.O. Box 6146, Silver Spring, Maryland 20906.

Estimated Cost: Item No. BV 65012, Relaxed Bed Vibrator with variable speed control: \$39.95 (does not include the alarm clock).

Name: Copal Digital Clock with Sleep Timer

Description: This is an electric alarm clock to which one can connect a lamp or the Relaxed Bed Vibrator (item above). When the alarm clock rings, the bed vibrator and/or a lamp is turned on.

Application: For hearing-impaired individuals who have difficulty in waking up, this device will provide a visual signal or vibratory signal at the proper time.

Manufacturer/Distributor: Nationwide Flashing Signals System, P.O. Box 6146, Silver Spring, Maryland 20906.

Estimated Cost: Part No. Mg-130, Copal Digital Clock with Sleep Timer: \$55.00. Also available, WC-2208 Westclox clock with special built-in receptacle: \$32.50

Name: Smoke Alarm/Detector

Description: This is a complete smoke detector transmitter system with a receptacle/receiver to give a visual or other kind of non-auditory display when the smoke detector is activated.

Application: This is intended to be used where a hearing-impaired individual may not be able to hear the normal smoke detector alarm. This instrument, when activated, will turn on a lamp or other type of electrical device to alert the hearing-impaired individual that the smoke detector has gone off.

Manufacturer/Distributor: Nationwide Flashing Signal System, P.O. Box 6146, Silver Spring, Maryland 20906.

Estimated Cost: Part. No. 30-53R RR1-C, complete Smoke Detector Transmitter with Switch Receptacle: \$95.00. Part No. 30-53R RR2-C, complete Smoke Detector Transmitter with Audio (horn): \$95.00. Part No. 30-53R, extra Smoke Detector Transmitter: \$47.50. Part No. RR1-C, extra Switched Receptacle: \$47.50.

Name: Tele Caption TV Adaptor

Description: This device permits an individual to see printed captions on the television screen for those programs on which captions are broadcast. Printed words of a speaker appear across

the bottom of the screen.

Application: For individuals who are hard-of-hearing or deaf, seeing the text of what is being spoken on the screen will often substantially enhance their understanding and enjoyment of the program. Through a special adapter, television sets can show "closed captions" which are not seen on an ordinary television set which is not equipped with the special Tele Caption TV adapter. Any TV set can be used with such an adapter. As of January 1, 1982, approximately 30 hours per week of closed captions are broadcast to viewers in the United States.

Manufacturer/Distributor: Sears, Roebuck & Company, Sears Tower, Chicago, Illinois 60684 and all Sears department stores.

Estimated Cost: Tele Caption TV Adapter, \$290.00. Color television set with Tele Caption feature built in: approximately \$650.00