

# PERSONAL VOICE AMPLIFICATION - Presented by Luminaud, Inc.

## ADVANTAGES TO USERS & LISTENERS, THINGS TO CONSIDER WHEN CHOOSING A VOICE AMPLIFIER, AMPLIFIER & MICROPHONE POSITIONING, INFORMATION ON USE & CARE

KEY WORDS for Internet search: Voice amplifier, amplification, microphone, weak voice, whisper, communication, any brand names or manufacturer's names

Personal voice amplifiers are usually wearable or carryable devices used to increase the loudness level of the user's voice. They are commonly made up of two parts - a circuitry/battery/speaker package and a microphone on a cord. Batteries, often rechargeable, are the usual power source, but a few medium size, portable amplifiers are line powered.

Voice amplification is helpful to those who can shape words understandably but have a voice volume too soft to be heard easily. If speaking is fatiguing, requires frequent repetition and/or the listener must be only a few inches away to hear what is said, a voice amplifier is likely to be very beneficial. Voice amplifiers are also valuable to people with no voice problems who speak to large groups or in noisy or wide-spread areas. They eliminate shouting, protect the throat and allow the speaker to reach a larger audience more effectively.

Voice amplifiers are useful to esophageal & TEP speakers and anyone with a weak voice or throat problem such as: vocal nodules, Parkinson's, PSP, ALS, MS, Guillan Barre, damaged or partially paralyzed vocal cords, impairment of throat or chest muscles, diminished lung capacity. They also can be used to amplify artificial larynx speech in large or noisy areas.

They are useful in almost any setting - home, office, factory, hospital, school, nursing home, church, retreat, park, camp, meeting, restaurant, party, ballgame, on the street, any place or event - for one to one conversation or for group activity. Personal amplifiers are ideal for people who have difficulty being heard above engine or other noises in a car, bus, plane or train.

People with no voice problems will also benefit from using an amplifier when talking to groups or in a large or noisy area. Amplification will eliminate shouting and voice strain and provide better listener understanding. Amplifiers are a major asset to tour guides, teachers, coaches, clergy, lawyers, morticians, business and organization leaders, entertainers, public officials, public safety officers, politicians, and public speakers of all kinds, whether or not they have difficulty with voice volume.

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### VOICE AMPLIFICATION OFFERS EASIER, LESS FRUSTRATING COMMUNICATION AND HAS MANY RELATED ADVANTAGES FOR BOTH USERS AND LISTENERS:

- > **Minimizes overall strain and fatigue** when physical condition makes talking a tiring effort.
- > **Rests the throat** to allow healing or to avoid damage or further damage.
- > **Reduces misunderstandings** & need for repetition.
- > **Makes life generally more pleasant** and less frustrating both for people who want to be heard and for the family, friends, care givers and teachers who want to be able to hear them easily.
- > **Promotes independence and self-assurance** in those who otherwise could not "speak up" and take charge of their own lives and care.
- > **Assists** conversation between someone with a voice volume problem and someone **with a hearing problem** - a great relief to both.
- > Lets those with **hearing impairment hear themselves better during speech practice** - after laryngectomy, stroke or injury, etc.
- > Allows **longer phrasing for esophageal & TEP speakers**.
- > Provides easier, more accurate **communication in a noisy workplace**.
- > Helps **develop poise and self-confidence** in those not accustomed to public speaking.
- > **Enhances enjoyment** for both participants and audience **at special events**.
- > **Increases effectiveness** of classes, lectures, meetings, sales presentations.
- > Furnishes a means of **easier, non-aggressive crowd control** in a variety of public settings.

## "HOW CAN WE TELL WHETHER VOICE AMPLIFICATION IS LIKELY TO BE SUCCESSFUL?"

Choose a quiet room and a listener with average hearing. Position the listener so that the speaker's mouth is about 12" from the listener's ears. (Listener should close eyes or turn head to avoid lip reading.) If the amplifier user can shape words properly and the listener can understand most of what the users say - 70% or more - then there is a probably enough voicing to make good use of a variety of amplifiers. If only about 10% to 30% can be understood, then it is still possible that a somewhat larger, though still portable, amplifier might bring the voice volume up to a usable level.

A successful amplifier user must be able to shape words fairly well - amplifiers improve only volume, not articulation. However, speech therapists often report that once a patient is freed of worry about volume, proper articulation is easier. Also, people with spastic dysphonia and others whose volume is variable and unpredictable sometimes find that the use of an amplifier allows them to produce more consistent voicing. And, amplifying the voice, even though not technically clarifying it, may bring words, weak consonants and speech nuances up to a level that allows the listener's brain to process them more easily, thus improving apparent intelligibility. These advantages cannot be promised to all amplifier users, but have been reported often enough to indicate that they definitely will happen with some individuals.

## "BUT I CAN'T WEAR THAT!!! EVERYONE WOULD LOOK AT ME !!!"

There is sometimes objection to voice amplification on the grounds that it is too noticeable and makes the user feel too conspicuous. This is similar to the resistance people have traditionally had to wearing hearing aids and eyeglasses. People of any age may have this response, but it is particularly frequent among teenagers. However, consider that, as well as the obvious advantages of voice amplification to both speaker and listeners, **a voice amplifier actually allows the user to be LESS conspicuous.** Voice amplification is no longer an oddity - entertainers and many others use it all the time. After a very short initial adjustment, both the user and the listeners will forget about the amplifier and give no more attention to it than they would to glasses on someone's face. Then everyone is free to carry on natural conversations without any undue attention to the person with the voice problem.

Of course, as with any equipment, the use of a voice amplifier will probably seem awkward at first, but it will become routine with a little practice. Often the amplifier becomes so helpful that the user will wonder how he/she ever got along without it.

## "OK - IT SEEMS LIKELY THAT A VOICE AMPLIFIER WOULD HELP - SO WHAT'S THE BEST ONE???"

Really - there isn't any one best! The ideal voice amplifier, of course, would be the size of a common pin, worn on the lapel!! Unfortunately, that kind of StarTrek technology is not yet available. In order to get good amplification for a weak voice - with reasonable sound quality and minimal feedback problem - at a reasonable price - the speaker/circuitry must have size, weight and bulk and there must be a microphone close to the lips. So choices must be made from what is available.

"Trade-offs" are often necessary. Some people may want or need more amplification even if it means dealing with a heavier instrument. Others want a smaller amplifier even if it limits their easy-conversation area to just a few feet away. Some may want very good voice quality for singing. Others just want reasonable amplification at as small a size and/or as economic a price as possible. Some want or need a "hands-free" mic. We feel, certainly, that some brands are generally preferable, but **overall, the best amplifier is the one has the most helpful combination of features for each specific individual user.**

**WHEN CHOOSING A VOICE AMPLIFIER THE USER, SPEECH PATHOLOGIST AND SUPPLIER MUST CONSIDER INDIVIDUAL NEEDS, PREFERENCES AND ABILITIES AS WELL AS THE FEATURES OF VARIOUS AMPLIFIERS AND MICROPHONES.** This may seem to be a rather long list, but it will all become second nature to someone who does a reasonable amount of work with voice amplification.

**Type of Vocal Sound to be Amplified**

- Whispy or breathy
- Soft normal
- Rough or gravelly
- Uncontrolled volume changes
- Deterioration of volume or voice quality after a period of use or when tiring
- Esophageal or TEP
- Electronic Artificial Larynx
- Communication board output

**Amplification Needs -**

- To be heard one-to-one or by just a few close people in a quiet area
- To be heard in a large group or in a large or noisy area
- To be heard by someone in the next room
- To be amplified during specific hours of the day or occasionally, when in special situations
  - or is 24 hour a day amplification needed?
- To have vocal rest to lessen damage or help prevent further damage to throat
- To carry on a conversation without using as much energy

**Individual Preferences**

- Wants equipment to be very inconspicuous
  - or is willing to use whatever is required to get the amplification needed
  - or wants to be heard loud and clear or even call attention to him/herself.
- Wants or needs to have hands free
- Is willing to wear something on the head and over the hair
  - or refuses to consider it.

**Positioning and Mobility -** whether the individual:

- Is strong and completely mobile
- Is mobile but weak
- Has balance problems
- Uses a cane or walker
- Uses a wheelchair or sits in the same chair most of the time
- Is in bed much or all the time. Sitting up or lying down?

**Head control -** whether he/she:

- Can keep head up
- Can move head forward and backward
- Can turn head side to side
- Has uncontrolled head movements
- Has a brace to keep head in position

**Hand and arm capabilities.** Is s/he able to handle and position and adjust equipment?

**Cognitive ability -** Is s/he able to understand and remember how to:

- Use off/on and volume controls?
- Turn mouth to mic when speaking?
- Charge or change batteries as required?
- Use device with reasonable care (will not throw it, sit on it, put things in openings, etc.)?

**Assistance available -** if user is unable to operate and care for device completely on his/her own, is there a family member, friend or caregiver available to assist?

## AMPLIFIER/SPEAKER FEATURES

**Amplification Potential** - is the maximum workable volume sufficient for current and future needs.

**Sound Quality - Clarity and Fidelity.** In general, the larger the speaker, the louder and clearer the sound. Many people will prefer a smaller amplifier with reasonable sound quality to a larger device with excellent sound quality. Note that high fidelity is not always desirable. Some good amplifiers for people with voice problems have a “controlled bandwidth”—they are tailored to emphasize the frequencies in the voice that are most helpful to communication and to dampen unwanted highs and lows. Good music amplifiers are often not the best choice for people with voice problems.

**Handling requirements** - Location of controls, knobs, switches. Can the volume level can be left preset or is combined with the on/off switch? How much dexterity is required to put the amplifier on/take it off and for changing or recharging batteries. Can controls be extended or modified for special needs?

**Weight, size, shape, arrangements for carrying** - Is there a shoulder strap, belt mount, carrying case? Does the amp fit in a pocket? Can the user manage the size and weight of the device if walking? (Some advertised weights are WITHOUT batteries - but the carrying or wearing weight will be WITH batteries.) If on a belt, is the user willing to wear a belt. (Some people, women especially, are not comfortable with the feel or appearance of a belt.) Is there a good location to set or hang or place the amplifier on a wheelchair, at bedside, etc.

**Power source, battery usage and/or recharge requirements** -Battery powered amps have no line power cord to limit movement and no danger of electric shock in wet areas, but the batteries must be replaced or recharged. People who move around will want battery power, but people who will be in one indoor place most of the time may want to consider an amplifier that plugs in to line power. How and how often must batteries be recharged or replaced? Is there a proper power source available for the amp or the charger? Will it be going to another country with different voltage?

**Compatibility with preferred microphone.** Will the amp work only with a supplied mic or are there other choices of mic available?

**Wireless capability (mic not attached by cord to speaker) if desired.** Does unit have a wireless receiver built in or can one easily be added? Will an added receiver require a separate power supply?

**Durability** - expected longevity and resistance to breakage of the brand of instrument. If the need will be short term, then a less expensive instrument with a shorter warrantee may be a reasonable choice.

**Price, Warranty, Return policy, Repair Service** on any particular instrument. Some warranties are only 3 months, some are as long as 6 years. Note that the warranty on the batteries and the mics is very often shorter than the warrantee on the amplifier. Is repair service available after warranty has expired?

**MUCH ADO ABOUT WATTS** - Many amplifiers advertise output wattage - the power delivered to the speaker from the amplifier. In general, the higher the wattage the louder the amplifier may seem. When using small, personal amplifiers, the types and characteristics of the mic and the loudspeaker and the weaknesses and distortions of the voice will all effect what the listener hears. Wattage listing alone is not the best guide to anticipated effectiveness. A better measurement is the overall dB gain from the microphone to a specified distance in front of the loudspeaker. (Usually 10 cm is the distance used.) This measurement represents the capability of any particular mic/amp system and these numbers tend to relate better to the logarithmic response of the human ear.

The wattage listed for amplifiers usually assumes a high fidelity output from very low to very high frequencies. With many portable amplifier systems made specifically for people with voice problems, this range has been narrowed to apply only to useful speech frequencies. The full wattage of the device can then be concentrated in this narrow band and the listener’s ear will hear that range as apparently louder, with less distractions from non-communication sounds in the voice such as air noises when breathing, heavy resonant vowels, and air injection of esophageal speakers.

## BASIC TYPES/SIZES OF AMPLIFIER SPEAKERS

**POCKET SIZE - OR ALMOST:** The smallest, generally pocket size amplifiers, are attractive because of minimum size and weight and bulk - often weigh only about 6 to 12 oz. - sometimes a very important feature for someone trying to remain mobile. Because they have a smaller speaker, the sound quality and/or volume may be somewhat limited, but many people find them convenient and helpful, especially when talking to a few people in a small to medium size room or in a vehicle. High-gain, uni-directional, noise canceling mics often work well with these units to make them useful even for someone with a very weak, wispy voice, but if the mic is too powerful and/or someone speaks into it at a loudness level above a weak voice or whisper, the sound may sometimes “overdrive” the speaker and become tinny or distorted. Some small amps can be worn in a pocket or on a belt. Some are a little too big for a pocket and go on the belt or on a strap around the neck. Note that a layer or two of cloth in a breast pocket or pants pocket will not interfere with the volume. The cloth might even help a bit in avoiding feedback.

**WAISTBAND OR FANNYPACK:** These tend to put out a lot of sound for their size, especially directly in front of the speaker. They are compact and fairly light weight (typically about 1 lb. to 1¼ lb) and can be very convenient for those who are comfortable wearing a belt. (If you wear an over blouse, sweater or shirt, the amplifier can be worn under it. The sound should come through with no trouble as long as the cloth is not extremely thick or dense). These amplifiers can be worn to the side or back if preferred - and also can be unbuckled and set on a table, hung on a chair back, etc., which might be needed to avoid feedback when sitting at a table if the chair has a back and arms. It is important to consider the size, weight and positioning and hand/arm capabilities of the wearer compared to the exact shape of the amplifier and the position and design of off/on switches and controls. This type of amplifier may vary a little in length and depth, may have knobs that stick up, may be difficult to position comfortably for larger people. Users must have reasonable dexterity to unbuckle and place it on a table or hang it over a chair. If hung, the speaker will point toward the floor. It will probably have the volume control and off/on switch in one knob or dial, so that turning it on will require adjusting the volume - you will not be able to leave it set at a preadjusted level that you know you prefer - but you can mark the unit with a bit of nail polish or felt tip pen so you can quickly turn to your most common setting.

**SHOULDER STRAP PURSE TYPE:** - Typically about 2 -6 lbs, they are quick and easy to put on and take off - or can be set or hung somewhere. If hung, the speaker will point out into the room, not toward the floor. When worn, they will swing and move a bit unless otherwise secured, so they may be more difficult than the pocket and waistband types for the person struggling with balance and mobility. However, this type of amplifier is often ideal for use with a wheelchair where it can be set, hung or mounted in various positions - and the user may be able to use a microphone held onto the chair by a gooseneck or clamp to avoid wearing a mic on the head or hand-holding it. The amp may have a volume control separate from the off/on switch so the volume can be left set and it will come right back to the preferred volume as the switch is turned on. The larger ones may be bigger and more powerful than most people need for personal conversation unless the voice is barely perceptible, but tend to have really good sound quality because the speaker is larger, so they can be a great asset to people who need to speak to larger groups or at a distance or where there is a high noise level. Some of the amplifiers in this category are also available in a **wireless version** (transmitter between the mic and the amplifier/receiver) so that the user and mic can be as much as 150 ft. to 200 ft. away from the speaker without a mic cord to trail around - a good feature for active people like gym teachers and coaches, for instance.

**TABLE TOP OR STAND ALONE:** About 6 lbs. up. The smallest of these can be dropped into a canvas bag and easily transported anywhere. Out of the Personal Voice Amplifier category, but of interest to many people for various work or group activities, these units can go up to about 40 lbs. and reach up to 5,000 people, still using battery power. Many are available with line power capability for those who are in the same room(s) most of the time and do not require “out and about” use. This will eliminate battery replacement or recharging schedules. Many will have wireless versions available. Many will also amplify other equipment - radio, tape or CD player, computer, musical instruments.

# MICROPHONES TYPES

## HAND-HELD MICS

Are convenient to pick up and use as needed, quick and easy to position.

Do not require "wiring" of head.

Do not interfere with hair or clothing.

Are quick and easy to pass from person to person for group use (such as laryngectomy club)

Often are the most satisfactory and least expensive choice.

Are subject to creating extraneous static noises if user rubs hands on mic or cord

Usually require that the user have reasonable control and movement of hands and arms,

But can often be "goosenecked" into position for hands free use by someone who is in the same place a lot of the time. (See section farther on)

Or can easily be held for the user, when needed, by a therapist, family member, friend or caregiver.

**HANDS-FREE MICS** for those who cannot use hands or arms or need hands free for work or activities.

### Headset and headband type mics

Stay with the mouth at all times unless deliberately moved - useful for those without good head control, those who must turn their heads constantly (for instance: special needs teachers), or who must bend over or jump around (doing craft demonstrations, bending over small children's desks, leading jazzercise classes).

Require user's or someone else's "hands-on" to get away from the mic - to eat, drink, or, if desired, to avoid amplification when coughing, sneezing, clearing the throat, etc.

Require a cord to the head and may interfere with hair style.

Some, especially heavier ones or those with rigid parts, are not comfortable to wear for long periods of time and are better suited to occasional short periods of use rather than all day, every day..

May require special adjustments for child or small heads or extra large heads.

**Note:** Some headband mics are versatile and can be worn two or three ways - around the back of the head, over the top of the head, around the neck with the mic sticking up in front of the mouth.

**Collar Microphones** - like long, bendable pencils - they curl around the neck and the mic end bends up toward the mouth.

Do not move with head - require head control and the cognition and memory of the user to turn to the mic when speaking.

Do not usually give as much of a feeling of being "wired."

Do not interfere with hair style or put any pressure on the head.

May be useful for someone who has head support brackets or any other hardware on the head that would interfere with use of a headband mic.

Need to be pinned under the collar or fastened down for an active user - otherwise may bounce around as user moves and will probably bump the user in the nose if he/she bends over

Some brands do not adjust small enough to stay in place well on children and people of small stature.

Others work very well for very small people. Some may not go far enough around very large necks.

Check neck size before purchase and ask supplier to confirm that the mic being supplied will be satisfactory for the size of the particular individual.

Some brands will hold their position better than others.

### Hand-held mics on goosenecks

Often an ideal arrangement for people using wheel chairs or sitting or lying at the same place for long periods of time.

Do not require that any cords or wires be placed or draped on the head or body.

Allow complete freedom of head and mouth.

Often work well for people lying in bed since other mics may be knocked out of place when turning head or be uncomfortable to lie on.

Are convenient if user must transfer or be lifted from the bed or chair - can easily be pushed out of the way without snagging and pulling cords as a mike worn on the head or body might do. Some handheld mics require that a button be held down when talking, but gooseneck clamp may serve this purpose.

Require control of head movement, the cognition to turn to the mic when speaking.

### **Lapel or Lavalier mics**

Are very seldom suitable for people with weak voices. (Those television announcers have strong voices, are not being amplified in the same room so the gain can be turned up with no feedback problems - and the station can spend big \$\$\$\$\$ on their sound systems!)

Are primarily useful for people with good voices using wireless amplifiers, with mic and amplifier speaker separated by at least several feet.

Have been used clipped to a ring or watch while the user at a table rested chin on uplifted fist.

Can be useful mounted next to a suck/puff motorized chair switch for someone with multiple needs.

### **Bone conduction and throat mics**

Pick-up varies - in general they have difficulty in picking up sound energy from a weak voice through the throat tissue or structure of the neck, so are likely to provide very limited amplification.

Scar tissue, irregular neck tissue, excessive fat tissue may decrease pick-up significantly

Even those that do a reasonable job of sound pick-up will not have the voice quality of other mics - voice may have "static" sounds, due to pick-up of body noises and mic rubbing on skin, hair and beards - swallowing is usually picked up and amplified, and even more so when food or beverage is being swallowed - so this kind of mic may be unacceptable for social use by someone who could use another type of mic.

Care must be used in positioning mic - especially those on a band that completely circles the throat - to avoid undue pressure on the carotid arteries.

All the negatives aside, a good throat mic may be very useful in some instances, especially for people who have multiple problems or unusual special needs.

Some of these mics work quite well artificial larynges - especially with intra-oral artificial larynges with no neck involvement such as the Cooper-Rand or neck held units with oral adapter.

### **Microphones (with the exception of the contact and throat mics) are available in broad field pick-up (omni-directional) and narrow field pick-up (directional), some with noise canceling features.**

Directional mics, particularly those with noise canceling features, are a better choice for personal amplification systems because they can increase the "signal-to-noise ratio" of the voice (pick up more of the voice and less ambient noise) and reduce problems with feedback. Directional, noise-canceling mics are especially valuable when a person with a weak voice needs to be amplified in a very noisy area such as a room with a TV blaring, a bustling gymnasium or a clanging factory.

**A microphone must be compatible with the chosen amplifier.** There are many microphones with greatly differing electrical properties. Even two mics that look very similar and are from the same source may not be interchangeable on an amplifier. In some cases, plug sizes differ and special adapters may compensate. In other cases, there is an electronic mismatch and a mic and amp just will not work well or at all together. A knowledgeable supplier is the best bet for information and should know the products that he or she handles, but the supplier will probably not be able to tell you whether a mic you have from another source will fit an amplifier that supplier handles or visa versa - in many cases it will be impossible for anyone to judge compatibility without direct hands-on testing of a mic and amplifier combination.

**IF AT FIRST YOU DON'T SUCCEED:** Some amplification systems in electronic supply stores have a poorly matched mic and amplifier. Sometimes an amplification system may have been tried without good results. **Don't give up! Keep looking for a good system and a knowledgeable therapist and/or supplier. If there is any audible voicing at all, with the ability to shape words reasonably well, there will be an amplification system that will help as long as the component parts are properly matched, positioned and adjusted.**

**FINANCIAL ASSISTANCE FOR AMPLIFIER PURCHASE** may sometimes be obtained through such agencies and organizations as the Veterans Administration, Sertoma Club, Lions/Lionesses, Telephone Pioneers of America, Easter Seal Society, churches, and local chapters of health, fraternal and service organizations. If one agency cannot help, it may be able to direct you to another that can. For those still working or wanting to get back to work, the Bureaus of Vocational Rehabilitation in the various states are a very important source of assistance with voice amplifier purchase.

An employer may be asked to provide amplification under the ADA act. For instance, many teachers have been able to get help from their school systems, but sometimes strings are attached like being required to leave the amplifier at school or to share the amplifier - or sometimes the employee feels that the employer may make life more difficult if pushed to provide the equipment. People may have to decide whether the assistance with the purchase of the equipment is worth any compromises or problems with the employer.

### **INSURANCE FOR VOICE AMPLIFIERS:**

**MEDICARE:** In mid 2001, Medicare announced that it would begin covering voice amplifiers. The wording was "voice amplifiers used for beneficiaries with impaired function of their larynx (which is still present) are eligible for coverage by Medicare." So it is questionable if coverage will be provided for people who have lost their larynges and need amplifiers. The announcement text said that the specific name and manufacturer of the amplifier must be given in the medical documentation. Nothing was mentioned about microphones. Hopefully if the statement of need mentions both amplifier and microphone, both will get coverage. Most Medicare suppliers will probably not risk "accepting assignment" (billing Medicare) but will require prepayment and then will file claims for customers to get reimbursement. The Medicare HCPCS code # for personal voice amplifiers is L8510. As of this writing, the Fee (amount Medicare allows, of which it will pay 80% and the beneficiary pays 20% Co-Pay) for voice amplifiers is about \$215 to \$220 depending on the state where you live (a little more in Puerto Rico and the Virgin Islands).

Some state **MEDICAID** programs cover voice amplifiers. The amplifier would have to be provided by a supplier who is a Medicaid provider in that state. Local pharmacies or medical supply stores who do not stock voice amplifiers could buy an amplifier from a regular supplier in order to resell it through the Medicaid program. The person/family wanting the product or a therapist would probably have to give the local supplier information on appropriate voice amplifier manufacturers/dealers to work with.

**PRIVATE INSURANCE COMPANIES** may provide coverage, depending on the user's policy. Often insurance companies follow the lead of Medicare on what they cover. Some will require pre-approval. Some suppliers may file claims for customers, but most will probably leave it to the customer to use "Paid" invoice copies and recommendations from their doctors to file their own claims.

Whether **Medicare, Medicaid** or other **Insurance**, top amounts allowed may be less than the full price of the amplifier wanted. **People who hope for coverage for amplifiers must expect to provide the supplier and/or insurance company with a physician's prescription for a specific amplifier and microphone by name and a detailed write-up (at least several lines) emphasizing the medical conditions requiring amplifier use, rather than the social or psychological benefits to the user.** If a claim is turned down, the individual or supplier should definitely appeal. It may require a lot of documentation to prove that coverage is warranted, especially for laryngectomees.

Originally presented to USSAAC, 08/99 by Dorothy Lennox, updated version at NCACA, 02/00 by Tom and Dorothy Lennox, further updates 08/00, 01/01 and 04/02, 04/03, 04/04, 03/08, 6/10

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## THE FOLLOWING INFORMATION APPLIES TO AMPLIFIER PURCHASES FROM LUMINAUD, INC. BY INDIVIDUAL CUSTOMERS.

Due to the excessive cost of the newly required Accreditation process to a small company, we no longer can send claims to **Medicare**. There is a slight possibility that you might be able to send in a claim yourself if you provide the right documentation and use the right form. We can provide the needed form to you on request. A surer thing is to get a local accredited Durable Medicare provider to order an amplifier from us, provide it to you and file a claim with Medicare. We sometimes can direct you to a company that might be able to handle this.

We cannot participate in any **Medicaid** programs due to excessive paperwork and frequent non-payment, but we can often work with a local Durable Medical Equipment provider - the kind of store that would provide walkers, commodes, wheelchairs, etc. - to provide a voice amplifier. An individual, therapist, social services worker or DME dealer may contact us for further information

We cannot bill **Private Insurance** - that is, we cannot send out an amplifier with no prepayment and then send a bill to an insurance company - but there are 3 possibilities for insurance coverage:

**1)** When we sell an amplifier to an individual, the package will include the original and 2 copies of the paid invoice. The customer him/herself may be able to obtain reimbursement by completing an insurance claim form and sending it to the insurance company along with one of the invoice copies and a physician's statement of need.

**2)** Some insurance companies will work with "proforma" invoices - we bill them, they pay us, then we send out the merchandise. The individual should check to see if his/her company will do this and to whom the invoice should be sent. If the insurance company agrees, we must be given the insurance company name, address, fax number, specific contact name and also the individual's insurance numbers, date of birth, any other information the insurance company wants on the invoice and a list of the equipment that is wanted. We will send the invoice and upon receipt of payment from the insurance company, we will send out the products ordered. Because this involves a great deal of extra paperwork for us, we cannot submit a proforma invoice for an order of less than \$100.

**3)** Any medical equipment company that is a recognized provider for an insurance company may purchase equipment from us at a small discount and then resell it to the individual and bill the insurance company. The insurance company will probably have a list of preferred providers to help locate a nearby equipment provider. If we are given the provider contact name and address, we can send information about products, prices and arrangements.

There are only a few brands of personal voice amplifiers available. At Luminaud, we offer a versatile and continually updated selection of high quality amplifiers and microphones - and over 35 years experience in providing communication equipment. We are happy to discuss specific requirements, preferences and capabilities in order to assist therapists and their patients in choosing the most appropriate voice amplification system for any individual's needs.

## **LUMINAUD IS:**

A northeast Ohio family owned and operated company with over 35 years experience in providing a wide variety of quality products for people with special communication needs. Tom and Dorothy Lennox and their family/staff offer personal attention and prompt service at reasonable prices.

Prior to forming Luminaud, Tom was a research and development engineer with the Rand Development Corporation, in Cleveland, where he was responsible for the manufacture of the Cooper-Rand Intra-oral Artificial Larynx. The Lennoxs purchased the rights to the Cooper-Rand in 1972. They have continued to upgrade its components and durability and have developed adaptations allowing independent use of the Cooper-Rand by people who have little or no use of their hands or arms.

Luminaud also manufactures and/or sells many other Augmentative, Assistive, Alternative and Adaptive Communication devices - several brands of artificial larynx, personal portable voice amplifiers, a device to use with the telephone to amplify outgoing speech, a small "real voice" communication board, a signal device and switches for minimal movement capability - as well as tracheostoma coverings and Heat Moisture Exchangers which provide some of the lost functions of the nose to those with tracheostomas, the Thermo-Stim and other devices used in the diagnosis or treatment of dysphagia, and larger voice amplifiers/portable sound systems for institutional and commercial use. Luminaud is an FDA registered manufacturer of medical devices and serves both U.S. and foreign markets.

The Luminaud staff is happy to respond by phone, fax, letter or e-mail to individuals, physicians, speech & rehabilitation professionals, and educators to provide information about products and associated advantages/disadvantages, to discuss individual special needs and applications, and to provide reference to other products and information sources. They can sometimes provide hands-on demonstrations, work shops, in-services and exhibits for classes, medical facilities, organizations and conferences.

*Luminaud is an associate member  
of the International Association of Laryngectomees..*



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# THE POSITIONING & USE OF MICROPHONES & SPEAKERS

**VERY IMPORTANT: When using a mic, especially with a weak voice, KEEP IT CLOSE! Having the foam windscreen touching the lower lip is best - ideally not more than 1/4" away.**

LET THE MIC DO THE WORK FOR YOU. With the mic close, you can get the greatest amplification with the least tiring effort and the least problem with feedback. You can get the full effect of any dynamics of your speech. And you can get natural, consistent sound without the amplification dropping off and coming back up if the mic and your mouth sometimes come close and sometimes are farther apart.

**The mic should be positioned just at or just below the lip-line. Keeping the mic to one side, not in the middle, will cut down on windy, hissy sounds as from "s" and "p" and make your voice much more pleasant to listen to. You may find a dramatic difference in pick-up from one side of the mouth to the other. EXPERIMENT to find your best placement.**

Many mics sound better if you talk over the top or across the face, not directly into them. And then listeners can see your mouth movements and facial expressions, an important part of any conversation.

People often find that the easiest way to use a **hand-held mic** is to put the cord around the back of the neck and let the mic dangle down in front, where it can be picked up and used when needed. **Be sure to start out, right at the beginning, holding a hand mic in your non-dominant hand.** The tendency is to pick up the mic with your "good" hand, but it is very difficult to switch later to the other hand in order to leave your dominant hand free for writing and other tasks.

SHAKY HANDS?? POOR GRIP?? You may be able to use a handheld mic by bracing 2 fingers or the palm or the heel of the hand on your chin. This often works quite well.

An amplifier's own handheld mic will often provide the best sound quality and greatest amplification at the least expense. However, those who cannot hold a mic or need both hands free will be able to get good results by choosing among several alternative mics and mic supports.

When a **headset mic, headband mic, or collar mic** is being tried for the first time, the user or therapist should hold the mic in the hand and experiment to find the best pick-up position first, before putting the mic on the head or neck. Once you know the spot you are aiming for, it is much quicker and easier and less annoying to adjust the mic and/or support than if you just put it on immediately and then start experimenting.



People at the same location much of the time (desk, chair, bed, etc.) and people using wheelchairs - may want to use a **gooseneck support** for the handheld mics. A pinch clamp allows mic insertion or removal in just a few seconds. For those with reasonable head control, this arrangement allows easy use of the mic, free of connecting wires and supports attached to the head. A slight turn of the head puts the lips near the mic to speak and a slight turn the other way will reduce the amplification of breathing, coughing, sneezing, etc.

For those special situations in which a **contact/throat mic** is being used, experimentation will be needed to find the best pick-up spot on the neck.

When POSITIONING AN AMPLIFIER'S SPEAKER, remember that it must face into an open area - not into a wall or piece of furniture or someone's body. In small rooms or elevators, the volume may have to be adjusted down to avoid feedback. Wheelchair users, with an amplifier mounted on the chair, must be careful not to stop to talk with the speaker facing right into a wall, cabinet, etc. If sitting at a table or desk, a waistband amplifier may have to be moved around to the side or removed and set on the table/desk.

**If using a wireless system** where the mic is using a transmitter and not plugged in to the speaker, the mic and speaker must be separated by at least several feet to avoid feedback.

NOTE: POSITIONING IS IMPORTANT FOR PEOPLE, TOO! A person who is positioned, as much as possible, with head erect, airway open and shoulders back to allow full use of the lungs will be able to produce a louder, clearer voice with less effort than someone who is slumped over.

# MICROPHONE HANDLING AND CARE

REMEMBER, IF HAND-HOLDING THE MIC, USE YOUR NON-DOMINANT HAND.

MICS AND MIC CORDS WILL OFTEN TRANSMIT SOUNDS FROM TOUCH, BENDING AND VIBRATION. **DON'T HANDLE THEM ANY MORE THAN NECESSARY.** If the mic is hand held, hold it steady. If you rub your hand up and down on the mic or fiddle with the cord, your listeners will hear very annoying scritchies and scrunches. If the mic is on a gooseneck or stand, keep your hands off the mic and mic support once you have them adjusted. And don't drum your fingers on the podium or table top.

**DON'T CUP YOUR HAND OVER THE MIC.** Actors or singers may do this to get a special effect - and they are usually using a mixing system. If you do it, you'll just have feedback and pick-up problems.

MICS AND MOISTURE AREN'T A GOOD COMBINATION. Spit happens! So if your mic has a removable windscreen, use it faithfully. If your mic has no wind screen, get one if possible. (It will improve sound quality too, by cutting down on windy and hissy sounds.) Meanwhile, check the mic covering or end of the voice tube for accumulation of food particles or hardened saliva. Clean them out gently with a softish, dry brush—don't get water into the mic or scratch it. (NOTE: Wash windscreens often for hygienic reasons. After washing, blot dry and then wait until well air dried before putting back on the mic. If a windscreen fits too loosely and drops off to easily fasten it with a small rubber band - or use a tiny dot of Prit-type paste or glue. Be sure the paste/glue does not get into any of the mic openings. Replace windscreens if they begin to break up.)

MIC CORDS ARE SENSITIVE TO CRUSHING - more sensitive than lamp cord, for instance. Take care to avoid cords being walked on or having something set on them or pinched in doors or drawers.

IF YOU HAVE TO REMOVE THE MIC PLUG, PULL ON THE PLUG, NOT THE CORD. On most mics, the cord and plug pull apart fairly easily. Also, use care not to kink or fold the cord sharply, especially at the mic and plug connection areas, which are the most vulnerable.

IF YOUR MIC CORD IS LONGER THAN NEEDED coil the excess amount loosely (around 4 fingers is a good size)and fasten gently with a twist tie. This is much safer than letting it dangle and get caught in things, which might pull it out of your hand or off your head.

MANY MICS CAN BE PERMANENTLY DAMAGED IF DROPPED ON A HARD FLOOR, SO IT PAYS TO BE CAREFUL. In general, the larger the head of the mic, the more likely it is to be damaged by dropping.

ALL EXTERIOR PARTS OF YOUR AMPLIFIER CAN BE CLEANED by wiping with a cloth just dampened with Lysol or similar disinfecting spray. DO NOT spray the instrument itself. DO NOT get actual drops of moisture into the mic, speaker or any other openings.

**DEVELOP GOOD MIC USE & HANDLING HABITS TO BEGIN WITH - IT WILL BE WORTH THE EFFORT!**

**IF YOU HAVE ALREADY ACQUIRED POOR HANDLING HABITS,  
YOU WILL FIND IT WORTHWHILE TO WORK AT IMPROVING THEM!!!**

**Most of these suggestions should apply to the use of any mics or amplifiers, ours or others.  
We hope they will help and that you will have easy and trouble-free use of your amplifier.**

If you have any questions about general mic or amplifier use and care,  
or problems with equipment purchased from us, please contact us.

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