

NCRA Broadcast and CART Captioning Committee



Guidelines for CART Captioners (Communication Access Realtime Translation Captioners)

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Mission statement

In August of 2013, the National Court Reporters Association Board of Directors voted to combine the CART and Captioning Communities of Interest and approve the use of the term *CART captioning* within the organization. *Captioning*, in the general sense, is understood by the general public. This rebranding effort was undertaken in order to bring more awareness to the public at large about the skills and services provided by CART captioners. When using the term *CART* as an adjective, it clarifies the service being provided without eliminating the term *CART*, which is specifically mentioned in the Americans with Disabilities Act as well as Requests for Purchases and contracts across the country and Canada.

The purpose of this publication is to provide recommended style and formatting guidelines for CART captioners in the United States of America and Canada as well as to offer CART captioners insight into the environment and circumstances within which their consumers live and work. The material found in this manual is the product of the National Court Reporters Association (NCRA) Broadcast and CART Captioning Committee.

The goal of this manual is to assist the independent CART captioner by identifying and providing, through example, CART style and formatting guidelines to create a more homogeneous product for CART consumers in the United States and Canada, recognizing that there are regional differences and preferences of CART consumers and providers.

CART companies may have already established CART guidelines for their employees and independent contractors. This manual is not intended to usurp the direction provided by any established company. The direction provided by the company you are working for should take precedence over any instruction provided in this manual. Again, this manual is meant to serve as a reference for independent CART captioners and is a good starting point for transitioning to CART captioning. This in conjunction with seminars, hands-on training, and mentoring will aid in developing CART captioning skills and proficiency.

Therefore, the target audience for this manual may consist of:

- freelancers, official court reporters, and captioners who are transitioning into a CART career on their own without the benefit of a training program
- CART captioners in training with a mentor or apprenticeship program
- independent contractors or freelance CART captioners who have questions on the proper formatting or preferred style guidelines
- working CART captioners who need a refresher or validation in the basic formatting style guidelines

NCRA has issued a policy [statement about CART services](#), which is available on its website. It is recommended that the information in this document is used in conjunction with other NCRA documents, including but not limited to: [CART Captioner's Manual](#), [CART Consumer Bill of Rights](#), [Individuals with Disabilities FAQ](#), [CART Bill of Rights](#), [General Guidelines for Professional Practices](#), [CART in the Courtroom Model Guidelines](#), and others listed on [NCRA.org](#).

Know your consumers

The term *hearing loss* describes someone with any degree of hearing loss ranging from mild to profound. There are approximately 36 million people with some form of hearing loss in the United States. The term *hearing loss* can encompass both people who are deaf and people who are hard of hearing. People with hearing loss often use residual hearing and assistive technology such as hearing aids and/or cochlear implants. People who are culturally Deaf often use sign language as a primary mode of communication. CART consumers include all people with hearing loss.

Definitions of hearing loss

Hard of hearing: *Hard of hearing* is a descriptive term used when making the distinction among people with hearing loss, for example, *people who are deaf and hard of hearing*. People often use the term *hard of hearing* to describe themselves no matter the audiological level of hearing loss. Typically, people who use residual hearing, amplification, and/or hearing assistive technology and who do not use sign language as a primary mode of communication consider themselves hard of hearing rather than deaf. Generally, people who consider themselves hard of hearing, no matter their level of hearing loss, are committed to participating in the hearing world using speech reading, residual hearing, technology, and sometimes sign language. The term *hard of hearing* is always used with the people descriptor as in *people who are hard of hearing* or *hard-of-hearing people*. The term **the hard of hearing** should not be used.

Deaf: This term is generally used to describe individuals with a severe to profound hearing loss, with little or no residual hearing. Some people who are deaf use sign language, such as American Sign Language (ASL) or Langue des signes québécoise (LSQ), also known as Canadian Sign Language, to communicate. Others use speech to communicate using their residual hearing and hearing aids, assistive listening devices, cochlear implants, and/or speech reading. Still others use a combination of sign language and speech. Based on the age at the time of loss of hearing, people who are deaf are categorized into two groups: congenitally deaf – those who were born deaf; and adventitiously deaf – those who were born with hearing but whose sense of hearing became nonfunctional later in life through illness, accident, or aging (presbycusis). The term *deaf* should always be used with a people descriptor, for example, *people who are Deaf* or *people who are deaf*. The phrase *the deaf* should not be used.

Deaf culture: This term refers to individuals who identify with and participate in the language, culture, and community of people who are Deaf, based on sign language. Deaf culture does not perceive hearing loss and deafness from a pathological point of view but rather from a socio-cultural point of view, indicated by a capital D as in *Deaf culture*. People who are culturally Deaf may use many different types of strategies to communicate with hearing people, such as speech, residual hearing, hearing aids, cochlear implants, speechreading, sign language, writing, typing, and gesturing.

The book, *For Hearing People Only: Third Edition* offers this definition of Deaf culture: “One possible definition of U.S. Deaf culture (and there must be many!) is a social, communal, and creative force of,

by, and for Deaf people based on American Sign Language (ASL). It encompasses communication, social protocol, art, entertainment, recreation (e.g., sports, travel, and Deaf clubs), and worship.”¹

Deafened or late-deafened: These terms describe individuals who grow up hearing or hard of hearing and, either suddenly or gradually, experience a profound loss of hearing. Adults who are late-deafened usually communicate using speech, though they often cannot understand speech without visual cues such as CART captioning, computerized note-taking, speech reading, or sign language.

Service definitions

Communication Access Realtime Translation (CART): CART is a word-for-word, near-verbatim, speech-to-text interpreting service for people who have hearing loss and would not be able to fully participate otherwise. CART provides a complete translation of all spoken words and environmental sounds, empowering consumers to decide for themselves what information is important to them. CART is used primarily for live events, such as educational classes, conferences, business meetings, doctor’s appointments, legal proceedings, religious gatherings, and social situations. Depending on the situation, a CART captioner may be present on site or may be in a different location, using the Internet to deliver the text to the consumer. When the CART captioner is off site, the service is referred to as remote CART.

CART in these settings requires a skilled steno machine writer or voicewriter with a total error rate of 98 percent or higher. See page 40 for a detailed explanation of total error rate. CART may be performed at speeds up to and possibly exceeding 225 words per minute.

Closed captioning: A term describing several systems developed to display text on a television or video screen to provide additional or interpretive information to viewers who wish to access it. Closed captions typically display a transcription of the audio portion of a program as it occurs (either verbatim or in edited form), sometimes including non-speech elements. Closed captions are embedded in vertical line 21 of the broadcast video signal but are hidden from the viewer until the captioning is activated or decoded on the TV or Internet video.

Open captioning: Open-captioned text is permanently encoded into the film to integrate it with the image. Open captions do not need to be decoded and are always viewable. Open captions are also embedded in vertical line 21 of the broadcast video signal and are always visible.

The following methods are also used in some settings to provide speech-to-text communication access, but are not comparable to word-for-word CART services.

¹ Matthew S. Moore and Linda Levitan, *For Hearing People Only: Answers to Some of the Most Commonly Asked Questions about the Deaf Community, its Culture, and the “Deaf Reality”* (Ann Arbor, Mich.: Deaf Life Press, the University of Michigan, 1992)

C-Print: A trained operator, called a C-Print captionist, produces text of the spoken information using a software application called C-Print Pro and a computer with a standard keyboard. The C-Print captionist is skilled in text-condensing strategies and in typing using an abbreviation system, which reduces keystrokes. The text can be displayed simultaneously to one or more students in different ways, including additional computers (laptops) or display monitors. The captionist includes as much information as possible, providing a meaning-for-meaning (not verbatim) translation of the spoken English content. C-Print can be provided on site or remotely.

TypeWell: A speech-to-text transcription system that provides communication access and notes after class to students who need alternative or additional support. This service differs from traditional CART services as it is meaning for meaning, not word for word. As with C-Print, TypeWell captionists type on a standard computer keyboard. Prior to starting a class in which TypeWell is being used, the student should make an appointment with a TypeWell transcriber to familiarize herself or himself with the service. TypeWell can be provided on-site or remotely.

Assistive listening devices

Assistive listening device: An assistive listening device (ALD) is any type of device that can help a person who is deaf or hard of hearing function better in day-to-day communication situations. An ALD can be used with or without hearing aids and cochlear implants to overcome the negative effects of distance, background noise, or poor room acoustics.

Hearing aids: A battery-powered electro-acoustic device that brings amplified sound to the ear to improve hearing, generally.

FM system: Personal frequency modulation (FM) systems are like miniature radio stations operating on special frequencies assigned by the Federal Communications Commission. The personal FM system consists of a transmitter microphone used by the speaker and a receiver used by the listener. The receiver transmits the sound to a hearing aid either through direct audio input or through a looped cord worn around the neck. Personal FM systems are useful in a variety of situations, such as listening to a travel guide or book review, in a classroom lecture, in a restaurant, in a sales meeting, or in a nursing home or senior center.

FM systems are also used in theaters, places of worship, museums, public meeting places, corporate conference rooms, convention centers, and other large gathering areas. In this situation, the microphone/transmitter is built into the overall sound system. A person is provided with an FM receiver that can connect to his or her hearing aid (or to a headset if a hearing aid is not worn).

Telecoil or T-coil (commonly referenced as a T-switch): This is a metal rod encircled by many turns of copper wire. The telecoil works in conjunction with an induction loop by converting the electromagnetic signals into alternating electrical currents that are fed to the hearing aid. The hearing aid then converts the electrical currents into sound. A T-coil is commonly switched on for telephone usage.

Cochlear implant: A cochlear implant is a device that provides direct electrical stimulation to the auditory nerve. In sensorineural hearing loss where there is damage to the tiny hair cells in the cochlea, sound cannot reach the auditory nerve. With a cochlear implant, the damaged hair cells are bypassed and the auditory nerve is stimulated directly. The cochlear implant does not result in restored or cured hearing. It does, however, allow for the perception of sound sensation.

Induction loop systems: An induction loop wire is permanently installed (perhaps under a carpet) and connects to a microphone used by a speaker. (In the case of individual systems, a wire loop is laid on the floor around the user and the speaker.) The person talking into the microphone creates a current in the wire, which makes an electromagnetic field in the room. When a hearing aid is switched to the T (telecoil/telephone) setting, the hearing aid telecoil picks up the electromagnetic signal, and the volume is adjusted through the hearing aid. Loop systems are common in large group areas, taxis, public buses, countertops, desktops, and even drive-ups. They can also be purchased for individual use.

Theater captioning: Theater and moviegoers are hearing, deaf, or hard of hearing. Therefore, in order to provide equal access, some new techniques and products have been developed. Caption glasses are sort of like 3-D glasses, but for captioning. The captions are projected onto the glasses and appear to float about 10 feet in front of the user. They also come with audio tracks that describe the action on the movie screen for blind people, or they can boost the audio levels of the movie for those who are hard of hearing.

Another way to provide movie theater captioning is a system consisting of a small LED display on a bendable support arm that fits into the theater seat cup holder. The easy-to-read screen is equipped with a rechargeable lithium-ion battery that lasts up to 16 hours per charge. The high contrast display comes with a privacy visor so it can be positioned directly in front the movie patron with minimal impact or distraction to neighboring patrons.

For live theater, often a script is put into a computer and the text is projected onto a monitor, screen, or LED display located on the stage. As the lines are said by the actors, someone feeds the words up line by line from a computer or the lines scroll onto a LED display.

Products and companies: While not an exhaustive list of products and companies who serve people with hearing loss, some current technologies and companies are:

- Advanced Bionics
- Amplisound
- CaptiView
- Cochlear Corporation
- Harris Communications
- MED-EL
- Oticon
- Phonak

- Siemens
- Sony Entertainment Access glasses
- Starkey
- Ultratec

Working with sign language interpreters

The Registry of Interpreters for the Deaf is an organization whose goal is to ensure effective communication via excellence in the delivery of interpretation and transliteration services between people who are deaf or hard of hearing and people who are hearing.

To quote their philosophy: “The American Deaf community represents a cultural and linguistic group having the inalienable right to full and equal communication and to participation in all aspects of society. Members of the American Deaf community have the right to informed choice and the highest quality interpreting services. Recognition of the communication rights of America’s women, men, and children who are deaf is the foundation of the tenets, principles, and behaviors set forth in this Code of Professional Conduct.”

The ethical tenets that guide sign language interpreters also apply to CART captioners. These tenets include CART captioners who:

- keep communication and job information confidential
- develop and maintain professional skills and knowledge
- conduct themselves in a professional manner at all times
- demonstrate respect for consumers, colleagues, interns, and students of the profession
- maintain ethical business practices
- engage in continued professional development

To explore a little further how to work with a sign language interpreter, the most important thing to remember is that you and the sign language interpreter are both on the same team and have the same goal of communication access for the consumers who are deaf and hard of hearing. Your role is not one of advocacy, but rather one of empowerment of the consumer to speak up for themselves and be heard.

Prep materials should be shared with sign language interpreters. Both sets of professionals need the same information, and it is needed ahead of time. While a CART captioner will stroke out a name or phrase and then program it into the dictionary, a sign language interpreter will sign the word, see how well it flows, and how readable the sign or series of signs are.

When positioning the CART screen in conjunction with the sign language interpreter, be mindful of a few things:

- **Lighting:** The sign language interpreter needs to be well lit from above. Lighting from behind will cast unwanted shadows and render the signs unreadable. It is advisable to not have a light directly above the CART screen as it will make the text unreadable.
- **Eye glance:** The consumer ideally will see the speaker, the sign language interpreter, and the CART screen in one eye glance. When the CART screen is in one corner, away from the presenter, the PowerPoint, and the interpreter, the action of looking back and forth is known as eyeball Ping-Pong. Eyeball Ping-Pong is not a desirable setup! Ideally the CART screen and

the PowerPoint screen will be side by side, in front of the room. The presenter will be at the podium, and the sign language interpreter will be positioned near the presenter or sometimes even between the two screens.

- **Switching:** The sign language interpreters switch off with a partner every 20 to 30 minutes. There needs to be a clear pathway and a line of sight for the team to work effectively, so be sure the CART equipment is not in their way.
- **Support:** There are times when a speaker has a heavy accent and is using sign language as well as speech. Sometimes a sign language interpreter will come and sit near the CART captioner and give all the words or just a few missed words to the CART captioner. In turn, there will be times when a sign language interpreter will turn to the CART screen and point to a series of names or words, or they will interpret off of the CART screen. Again, it is a team effort with the goal of effective communication.

CART captioning in the legal setting

While CART provides communication access, it also provides equal access or a fair opportunity in the legal setting. Sometimes CART captioners in the legal setting are referred to as CART interpreters.

The legal setting is defined as any participant receiving CART captioning services in the global legal setting, which may include but is not be limited to a courtroom, hearing room, jury room, deposition, jail, police station, field stop, arbitration, or mediation.

Ethics

1. Refrain from working in the dual capacity of Official Reporter of Proceedings and CART captioner at the same time. When no other option exists, the role to be performed is that of the official reporter, and all present are entitled to read the display screen of the official reporter, which does not include the content and spirit of the speaker, as well as environmental sounds, that would normally be provided by the CART captioner. Disclosure must be made to the court and all parties, including the person requiring interpretive services, of this limitation with statement to be made on the record.
2. All conversations with the consumer will be CART captioned.
3. The sworn CART captioner will faithfully communicate the spoken word to the best of their ability
4. No file is to be provided unless by order of the Court.
5. If a consumer is a juror, the CART captioner will attend all deliberations.
6. As any other officer of the court, if the CART captioner has information that affects the proceedings or outcome of the case, they are required to report that information to the Court. However, all proceedings in jury deliberations are strictly confidential.

FAQs for CART in the legal setting

When providing CART in the legal setting, the consumer choices and courthouse rules are honored and followed. In the absence of any consumer choices or courthouse rules, the following are suggested solutions when working in the legal setting. These suggested solutions are gathered from the CART experts countrywide.

Question: Who hires the CART captioner?

Answer deposition: One of the attorneys.

Answer courtroom: The state court administrator, a member of the judicial team, the state Commission for the Deaf and Hard of Hearing, and/or an official reporter hired by the Court to act in a CART captioner role.

Question: How does the CART captioner prepare?

Answer deposition: Call the law firm ahead of time and arrive early to prep from exhibits, prior deposition transcripts, or pleadings.

Answer courtroom: Peruse the case file from the clerk.

Question: Where does the CART captioner sit?

Answer deposition: Wherever the CART captioner and the consumer can both have access to the realtime screen and where the CART captioner can hear what is being said.

Answer courtroom: The CART captioner sits in various locations in the courtroom, depending upon who is being served and where the proceedings can be clearly heard and understood.

For example:

- *When serving a deaf plaintiff or defendant*, when permitted, the CART captioner sits at the plaintiff's or defendant's table, being able to hear and write the proceeding, as well as any attorney/client discussions. The CART captioner must adhere to all local and courthouse security rules. The CART captioner would not write any sidebar discussions. The CART captioner needs to position the screen in such a manner that privacy and attorney/client discussions are kept confidential. A privacy screen placed over the laptop screen is advised.
- *When serving a deaf attorney*, the CART text may be placed on an overhead screen, thus allowing the attorney to move freely about the courtroom during examination. However, the deaf attorney may prefer to have the laptop on the table, ensuring all privacy measures are followed.
- *When serving a deaf witness*, the CART captioner will sit in a place that allows for the proceedings to be heard as well as ensuring the CART screen is visible by both the CART captioner and the witness. The CART captioner needs to be mindful of the seating location of the official reporter.
- *When serving a deaf juror*, the CART captioner sits in or near the jury box, allowing access to the CART text to that juror. When the jury goes to deliberate, the CART captioner goes into the jury room.
- *When serving a deaf judge*, the CART captioner sits near the bench and also in a place that allows for all of the proceedings to be heard. The judge needs to hear everything except for attorney/client discussions and jury room deliberations.

Question: Will I always have power to plug into when in the courtroom?

Answer: Power is not always available in convenient places in courtrooms. It can be dangerous to string cords across courtroom floors even using Gaffer's tape to secure them. Use of wireless technology such as Bluetooth or routers to send the realtime feed to a device in the courtroom is

recommended. Computers and steno machines need to be fully charged and able to run on battery power for a period of time, as needed.

Question: When does the CART captioner provide an official transcript for a deposition or in the courtroom?

Answer: Never. There should always be an official reporter.

Question: What if the judge or lawyers want a copy of the unedited CART file?

Answer: No file is to be provided unless by order of the Court. **Note:** This is why no “Q & A” is used nor the consumer’s speech included.

Question: Does the CART captioner write “Q” and “A” when writing testimony?

Answer: Use of “Q” and “A” is not recommended for CART captioning in any legal setting. The generally accepted CART format or CART company’s rules for speaker IDs should be followed in the legal setting. This means either first names, first and last names when known, or titles, such as:

>> DEFENSE ATTORNEY:

>> PROBATION OFFICER:

>> (Just a change of speaker)

Question: Do you write what the CART consumer says?

Answer: No. Do not write what the CART consumer says unless instructed to do so. This must be clarified beforehand. Put in an indication on the CART screen that the consumer is speaking. The reason is the movement of the screen indicates someone is talking, and therefore the screen needs to be watched. If the consumer’s speech is written, there is no halting of text, and the consumer is forced to always watch the screen rather than what is going on around them. Further, this distinguishes the communication access from the official transcript.

Question: Are the CART notes destroyed after the legal proceeding?

Answer: Notes are preserved in an unedited fashion for a reasonable amount of time. See page 19 for suggested wording of a disclaimer stating the CART file is not to be used as an official transcript in any legal proceeding, even if a file is mandated to be turned over by either state statutes or local rules.

Question: What does the CART captioner do if the witness or party who is deaf has a heavy accent or a difficult-to-understand cadence or speech pattern?

Answer: Since it is recommended that the CART consumer is not CARTed, this is a moot point for the CART captioner. The official reporter, the judge, or the attorneys will ask for a repeat or clarification, as needed.

Question: What if the witness or party who is deaf does not use his or her voice at all, but instead types the answers on the CART captioner's computer?

Answer: The CART captioner's computer should be connected to an overhead projector for all in the courtroom to view. Alternatively, at the request of the consumer and agreement of the parties and/or judge, the CART captioner may voice for the consumer in order to facilitate communication.

Question: Is the CART captioner sworn in?

Answer: Yes. Here is a sample:

- Do you solemnly swear or affirm to accurately translate spoken English into written text, to the best of your ability, so help you God?

Question: Does the CART captioner write sidebars?

Answer: It depends on who is receiving services. If it is an attorney or a judge, then yes. If it is any other party, then no.

Question: Does the CART captioner write voir dire?

Answer: Yes, if necessary.

Question: If a CART captioner is hired and paid by a state governmental body to provide CART for a state employee who has oversight of projects funded by the state and a rough draft of this quasi-official public meeting is sent to the consumer, is that rough draft a public record? Is that rough draft discoverable?

Answer: This is an issue for which the state needs to seek legal counsel. It is to be noted that under no circumstances is a CART rough draft to be used as an official record. The CART rough draft must contain a disclaimer in the beginning and end of the file. Here is a sample CART disclaimer:

This text is being provided in a rough draft format. CART captioning, Communication Access Realtime Translation captioning, is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings. Any video that has been reproduced in text format is to comply with the Americans with Disabilities Act under the Fair Use Doctrine. This file is not to be distributed or used in any way that may violate copyright law.

Question: If the case you are providing CART captioning services for is not the first case on the docket, do you need to CART everything that happens from the moment court starts and/or the CART captioner is set up?

Answer: Yes. Just make it clear when it is or is not the consumer's case.

Hardware and tips for on-site and remote CART

All CART captioners will need a computer, a steno machine that can hook up to the CART captioner's computer (or a mask if using voicewriting software), and CAT software.

On-site

When providing on-site CART, the text either is displayed on individual computer(s), handheld device(s), or screen(s), or may be projected onto a large screen. The hardware needed includes:

- access to power supply
- extension cord
- 2-prong to 3-prong ground cord adapter
- portable storage device (flash drive)
- chair/table
- tape for taping down cords, as necessary (preferably gaffer's tape)
- headphones (optional) — When possible, receive audio off of the audio mixer board directly or through an audio amplifier box. The audio amplifier box can receive a 1/8 inch, 1/4 inch, or XLR connection
- Internet access, if outputting via the Internet while on site (iCVNet, Bridge Mobile, 1CapApp, StreamText)
- wireless connection device (StenoCast), if outputting wirelessly
- iPad or tablet or netbook

Tips for providing on-site CART:

- Speakers should be identified whenever possible. It is most helpful to the consumer if you can, at a minimum, use a speaker ID to identify the moderator, meeting leader, or professor.
- All environmental sounds and even "(silence)" or "(papers shuffling)" should be noted.
- When audio is not discernible, a parenthetical such as "(inaudible)" may be written one time to let the consumer know there are audio difficulties.
- CART captioning setup in a room is dependent upon final approval and acceptance of the consumer, but the recommended setup tips for on-site CART include:
 - Sit closer to the front of the room near speakers and PowerPoints.
 - Protect equipment by staying clear of doorways and paths of heavy traffic.
 - Avoid the glare of sunlight through windows onto the CART screen or into the CART consumer's eyes.
- Some CART captioners work in teams, similar to the interpreter teams described earlier. Be sure to set up the equipment and line of sight so that the task is accomplished seamlessly.
- Introduce yourself and identify your role to the speakers, teachers, and moderators.
- Confirm with the CART consumer that communication access is comfortably achieved.
- Some consumers prefer to sit with their friends and not with the CART captioner. Thus, a wireless connection is necessary from the CART captioner's system to the consumer's computer

or any mobile device. This also assures that there are no obstructions due to the equipment being set up in an aisle.

- If there is a problem with the audio, the CART captioner has an obligation to interrupt. However, this needs to be clarified beforehand because some consumers do not want any interruptions or attention drawn to themselves by the CART captioner.

Remote

With remote CART, the provider is in one location and the consumer is in another. The CART captioner is listening to voices via the phone or over the Internet, translating the speech to text in real time, and transmitting the text to a designated Uniform Resource Locator (URL), Web page, Internet site, or other location or device. This is particularly helpful in areas where there is a lack of CART captioners. The hardware needed includes:

- Consumer needs:
 - computer or mobile device
 - Internet connection
 - URL or link from the CART captioner where the text may be viewed.
 - audio to be sent to the CART captioner via phone lines
 - speakerphones with or without extension microphone
 - a speaker may wear a wireless microphone with the speakerphone
 - audio to be sent to the CART captioner via VoIP (Voice over Internet Protocol)
 - When a phone line is not used, programs such as Skype, AIM, Google Hangouts, or Google Voice may be used to transmit the audio from the consumer site to the remote CART captioner. These programs need to be downloaded onto the consumer's computer and the remote CART captioner's computer. IDs need to be exchanged.
 - In a large group setting, the consumer will send the audio via Skype by connecting the audio mixer board output directly into the mic port of the computer housing Skype.
- CART captioner needs:
 - computer, steno machine or voice mask, and CAT software
 - Internet connection
 - audio source via phone line, VoIP, IM (Instant Messaging), or Web audio
 - headphones

A CART captioner should have backup power in the event of a power outage. All necessary CART components should be plugged into the backup power device. A couple of examples of recommended backup power sources include an uninterruptible power supply (UPS) or a generator.

A CART captioner should have a backup computer and steno machine, in case of equipment failure.

Tips for providing remote CART:

- Speakers should be identified whenever possible. It is most helpful to the consumer if you can, at a minimum, use a speaker ID to identify the moderator or meeting leader or professor.
- When others join the call, there is often a bell or beep, and that is important to indicate in the text.
- All environmental sounds and even “(silence)” or “(papers shuffling)” should be noted.
- When audio is not discernible, a parenthetical such as “(inaudible)” may be written one time to let the consumer know there are audio difficulties.
- If there is a problem with the audio, the remote CART captioner should notify the consumer via chat or parenthetically and suggest remedies. If given permission by the consumer, the remote CART captioner may interrupt the session and ask for a repeat or for a microphone to be readjusted.

CART may be displayed on-site and remotely simultaneously by connecting to the Internet while on-site and sending the text to the predetermined URL or link.

Web platforms that display CART captioning

Because technology, services, and CAT software programs are evolving rapidly, below is a nonexhaustive list of several of the current platforms and services that will facilitate remote CART text. It is suggested that a seminar, webinar, or a forum be used for details and training.

- 1CapApp
- Adobe Connect
- Elluminate
- Google Hangouts
- GoToMeeting
- StreamText
- WebEx
- join.me

Writing for CART

Realtime skills for CART

When it comes to CART, the focus needs to be on the word *realtime*. In the CART environment, the consumer is relying on the CART captioner's translation to get an education, to participate in a meeting or conference, to understand their medical condition and options regarding their health, to interact in social activities, and many other settings. Although a corrected transcript can be provided at a later time, the consumer's opportunity to react to, interact with, and respond to what was said has passed. Therefore, the accuracy and readability of the realtime text is essential. In court reporting, the record is the driving force. In CART, the consumer's understanding and equal access are the driving forces.

If the translation is highly accurate, as near verbatim as possible, and readable, the goal has been achieved. How the CART captioner achieved that goal should not be criticized or questioned. If the translation is not highly accurate, then it is the CART captioner's responsibility to improve. The first step towards improvement is acknowledging that the accuracy is not what it should be. The second step is to analyze the translation, identify the weak areas, and incorporate methods to improve. There is not a universally correct theory, method, or approach for writing realtime as a CART captioner, but there are universal principles and techniques that may be taken from different theories, adopted, and applied to one's writing to shore up the weak areas and improve the overall translation.

Know how you write

It is important that you know your theory and know how you write phonetically. The topics that you will encounter as a CART captioner are very diverse, and you cannot allow yourself to be overwhelmed by the content of what is being said. You need to hear sounds and have the confidence to automatically write those sounds according to your basic theory. If you hesitate to think about how you write a word, you will not be able to keep up with the dialog, you will have to push beyond your limits to catch up, and you will likely sacrifice accuracy. Confidence is at least half the battle. When your translation is good, it continues to be good. When it is not good, it can be so distracting that it interferes with your ability to continue writing, and consumer comprehension may be lost.

If you know which fingers are weak or which are heavy, you can make better decisions about how you should write certain sounds or how to incorporate brief forms. Some people can cleanly stroke a final –FN for words containing the syllable *ven*, such as *oven*, *heaven*, *muffin*, *Kevin*. If you cannot stroke –FN without dragging in the –R, then although it requires an extra stroke, it is better to write the word in two strokes. If you always misstroke words containing the final –TH, then consider a new way to write the final –TH. Improvement does not occur uninitiated.

Know your dictionary

It is also important that you know what is in your dictionary. Some words or names that are not in your dictionary may display as readable untranslates — meaning your phonics table will translate the steno letter by letter and will not allow raw steno to go out.

If you have a lot of brief forms and phrases in your dictionary, you cannot rely on readable untranslates. When phrases and brief forms inadvertently translate as part of misstrokes or untranslates, it can be very confusing to the consumer. If you are not sure if a word or name is in your dictionary, the safest bet would be to fingerspell the word. Even if it is not spelled correctly, at least it will be readable.

Brief forms and phrases

Everyone has an opinion on the use of brief forms and phrases, but the ultimate goal of readable translations needs to always be in the forefront. If you are able to incorporate brief forms and phrases successfully — without misstroking them and without the brief forms and phrases translating inadvertently in the middle of other words — then there is not much of an argument against using them.

This is such an important point, let it be repeated here: It is not important to discuss the philosophical merits of using brief forms and phrases or not. What is most important is whether or not a brief form or phrase is showing up in places where it shouldn't. Consumers do not know steno and cannot read through mistranslations like CART captioners and court reporters can. If a brief form keeps popping up where it shouldn't, it is time to take it out and replace it with a stroke you can better control.

While most CART captioners and court reporters use at least some brief forms, it is impossible to have a brief form for every multi-syllabic word or every multiple-word phrase. To be an effective CART captioner, you need to be highly skilled and accurate on the steno machine or with your voice model. Extensive use of brief forms and phrases is not going to make you a cleaner writer or a better CART captioner. You need core skills and speed as a foundation; from there you build upward.

Root words, prefixes, and suffixes

The goal is to strive for clean, accurate translation built upon what was mentioned above – confidence and knowledge of your dictionary and writing style. A positive way to expand the power of your dictionary and to ensure better translation is to incorporate a method of word building based upon stroking definitive root words and adding prefixes and suffixes. The prefixes and suffixes need to be dedicated strokes that serve only that one purpose. Once a stroke is defined as either a prefix or suffix, it is off-limits for any other purpose. As an example, you need to have a stroke that is defined to be the prefix EN- and a separate stroke that is defined as the suffix -EN, never to be interchanged.

Incorporating the use of dedicated strokes for prefixes and suffixes not only aids in automatic word-building, it also prevents word boundary translation errors. There are several published realtime books that may be used to help you incorporate prefixes and suffixes into your writing style.

Conflicts

Before computer-aided transcription (CAT) was invented, court reporters rarely concerned themselves with conflicts, such as *their/there/they're*. It was up to the typist to know the correct spelling based on the context of the sentence. However, with the advent of CAT, most software vendors have created artificial intelligence to assist the court reporter in making guesses at selections or displaying both/all

options to be chosen during the editing process. While this is extremely innovative and convenient, it is not sophisticated enough for CART captioners to rely on.

Therefore, it is important to resolve all conflicts. Of course, the obvious conflicts like *hear* and *here* are well known, but we must also consider conflicts that are created from misstrokes as well as stacking. For example, TPHR could be *in*, *from*, or *there*. It will likely become necessary for a CART captioner to change strokes learned early on to resolve these types of conflicts. For example, a common misstroke of WHR (*whether*) for WH (*when*) could be resolved by writing out *when* as in WHEPB and defining WH as *whether*.

Stacking presents a whole new set of problems. THAS (*that is*) is a very common stack for a disjointed plural followed by the stroke for *that*, such as –S/THA. A solution would be to define THAS as –s *that* and write *that is* in two strokes. Keep in mind, when you write realtime at high rates of speed, your stacking may increase.

Delete a space and add a space

Realtime writing requires the use of manually inserting a space and/or deleting a space to achieve the desired result and to avoid word-boundary issues.

That groundball play was the best we've seen in this game. [GROUND delete space BAL]

He used a bass net to catch the fish. [BAS space NET; otherwise it may have translated as *bassinnet*]

Inflected endings

There is a philosophy that coming back for inflected endings will decrease your chance of untranslates. The inflected endings being referred to are -S, -D, and -G. The primary purpose for coming back for inflected endings in a separate stroke is word building. The assumption is that those inflected endings – as well as any suffix – will likely attach to an existing root word that is in your dictionary whereas you may not have an entry in your dictionary with the plural and past-tense endings incorporated into the root word stroke. While it may be easier to write the word *hearing* in one stroke — HEARG — if you retrain yourself to always come back for the inflected ending, it will pay off when another word plus the inflected ending is not in your dictionary.

The result is cleaner, more accurate translation because you are building upon root words. Oftentimes, trying to incorporate the endings into the final stroke of a root word can make that stroke quite cumbersome and easy to misstroke. By coming back with a separate stroke, you likely will find that you can better control your stroking of the root word.

Dictionary building

Any and all information required for a CART dictionary can be found by searching the Internet through a search agent such as Google or Bing. Or you can purchase dictionary-building products and services.

Here are a few word lists you may want to find and add to your dictionary.

- animals, especially dog breeds
- assistive listening devices
- automobiles and motorcycle names (makes and models)
- biblical references
- CEOs of major corporations, especially those under indictment or involved in scandals
- cochlear implant companies and products
- countries, continents, and major international cities
- current administration, including president, first lady, president's family members, vice president, vice president's family members, White House spokesman, and cabinet members
- educational institutions for Deaf students
- election candidates, including unknown or unpopular presidential candidates
- fashion designers
- flowers, plants, and trees
- foods, herbs and spices, wines, liquors, and beverages
- governors, mayors of major cities
- holidays and holiday terms
- major U.S. counties
- members of U.S. Congress and the Senate
- oceans, rivers, lakes, mountain ranges, islands, volcanoes, etc.
- parts of the ear
- past and current U.S. vice presidents
- past U.S. presidents
- top entertainers (past and present), actors, musicians, TV personalities, models, reality TV stars, comedians, popular TV shows and their characters, and top movie titles
- U.S. states and their major cities (need briefs for all the states)
- world leaders (past and present)
- zodiac signs

While building your dictionary will take quite some time to complete, it is recommended that you focus on modifying your steno theory first. After all, if you build your dictionary first and then change the way you write second, you will have no choice but to go back through your dictionary and change those entries you have recently entered. Making theory changes is the first step. Implementing the changes with consistency may take months or even years. Dictionary building is an ongoing process and ought to continue throughout your career as a CART captioner.

After obtaining the above-listed types of information, enter the names into a CART job dictionary or your main dictionary. Be sure to enter odd-spelling names together and to have a unique way of writing the odd part of the name.

For example:

- BET/TI/DAIFS can be global defined as *Bette Davis*.
- BET/T*I can be global defined as *Bette*.
- KO*EK/LAOER can be global defined as *Cochlear* when referring to the Cochlear Corporation.
- KOEK/LAOER can be global defined as *cochlear*, when referring to the ear. This distinction needs to be made when using a mixed-case display.

Slang/poor grammar

In CART, it is acceptable to write slang or poor grammar, and it is sometimes even necessary in order to truly convey the flavor of what has been said. However, it is possible to overdo it, writing every instance of poor grammar or lazy speech. For example, *gonna* vs. *going to*, *runnin'* vs. *running*, and *shouldn't* of vs. *shouldn't have*.

The exception is when you are providing CART for song lyrics, particularly rap or hip-hop, where you will often hear things such as *doin'*, *workin'*, etc. In this case, writing what you hear helps convey the flavor of the lyrics.

Some CART companies have written guidelines to help the CART captioner with these decisions. It is best to check with your CART company for guidance.

Personal views

As the CART captioner, your duty is to write what is said, editing where necessary for clarity, translation, or brevity. While you may hear something during a meeting that offends you or that you personally disagree with, it still remains your duty to write what is said. For example, if you are providing CART for a political roundtable talk show, and the person speaking has political views that differ from yours, it is not acceptable to edit or drop any of the remarks where your opinion differs from that of the speaker. Likewise, if someone uses a word in a way that offends you, such as *God* or *Lord* used as an exclamation, or furthermore uses language that might be considered offensive, such as *ass* or *jackass*, it is not acceptable to edit or drop this word.

Again, it is recommended that you check with your CART company for guidance. Although you should write what you hear and not edit out words that offend you personally or that you think may offend someone else, you need to be concerned about these words translating inadvertently as part of misstrokes or untranslates. Imagine providing CART for a church service or a solemn ceremony and having an offensive word erroneously appear as part of the text. The best way to prevent this from happening is to delete the obscenities and offensive words from your main dictionary and redefine that steno as a word that is not offensive. Then you should create a special obscenities dictionary, and in that dictionary, enter the offensive words using an alternative steno stroke that would take some effort to use and would not likely translate as part of untranslates or misstrokes. You load this dictionary for assignments where you feel it may be appropriate.

Below is a chart that suggests some alternative strokes to be entered in your obscenities dictionary and also offers suggestions on ways to enter the basic strokes in your main dictionary so that they do not

inadvertently appear in your text. For example, enter BAO*B as *boob* in your obscenities dictionary and BAOB as *Bob* or *book* in your personal dictionary. Another option is to simply fingerspell all obscenities.

Obscenities and sensitive words

WARNING: The following chart contains obscene and offensive words. It is critical that these potentially offensive words be included in this manual in order to impart a possibly unforeseen aspect of providing CART.

In your main dictionary, the steno for obscenities should be defined as a clean word and fingerspelled if used.

Word	Suggested steno in obscenities dictionary	Steno in main dictionary defined as
ass	A*RS A*RS	AS, AE*US, A*S, 5-S, 5*S, 5EUS, 5E*US = <i>as</i> , <i>as-</i> , or <i>-as</i>
asses	-S	ASZ, AE*USZ, A*SZ, 5-SZ, 5*SZ, 5EUSZ, 5E*USZ = <i>as</i> , <i>as-</i> or <i>-as</i>
bitch/bitches/bitching	PW*EUFP	PWEUFP, PWEUPBLG, PW*EUFP, PW*EUPBLG, 3WEU67, 3W*EU67, PWAOEUFP, PWAOEUPBLG, PWAO*EUFP, PWAO*EUPBLG, 3WAOEU67, 3WAO*EU67, PWEUT/-FP, PWEUT/*-FP = <i>bridge</i> (add one-stroke entries as necessary, e.g. PWEUFPS = <i>bridges</i>)
boob/boobs	PWAO*B/PWAO*BS or /S	PWAOB, PWAO*B, 3W50B, 3W50*B = <i>Bob</i>
cock/cocks/cock sucker	N/A	KO*BG = <i>cock</i> ; KO*BG/S = <i>cocks</i> as in <i>cocks a gun</i> ; KOBG = <i>cook</i> ; KOBGS = <i>Cox</i> ; KOBG/S = <i>cooks</i>

cunt	N/A	KUPBT, K*UPBT, KUPBTS, K*UPBTS, KAOUPBT, KAO*UPBT, KAOUPBTS, KAO*UPBTS, KAOUPBTSZ, KAO*UPBTSZ, KU7B9, K*U7B9, KU7B9S, K*U7B9S, KU7B9SZ, K*U7B9SZ = <i>can't</i>
dick	N/A	TKEUBG = <i>Dick</i> as in a name; use judgment, e.g., if <i>kick</i> trans as <i>dick</i> often, may need to write <i>dick</i> with asterisk
fag	TPA*G	TPAG, TPA*G, TPAEUG, TPA*EUG, 235G, 235*G, 235EUG, 235*EUG = <i>tag</i>
fart	TPA*RT	TPART, TPA*RT, TPAEURT, TPA*EURT, 235R9, 235*R9 = <i>part</i>
farts	TPA*RTS or /S	TPARTS, TPA*RTS, TPAEURTS, TPA*EURTS, 235R9S, 235*R9S = <i>parts</i>
fuck	N/A	TPUBG, TP*UBG, TPAOUBG, TPAO*UBG, 23UBG, 23*UBG, 2350UBG, 235*0UBG = <i>truck</i>

fucks	N/A	TPUBGS, TP*UBGS, TPAOUBGS, TPAO*UBGS, 23UBGS, 23*UBGS, 2350UBGS, 235*0UBGS, TPUBGSZ, TP*UBGSZ, TPAOUBGSZ, TPAO*UBGSZ, 23UBGSZ, 23*UBGSZ, 2350UBGSZ, 235*0UBGSZ, TPUBGZ, TP*UBGZ, TPAOUBGZ, TPAO*UBGZ, 23UBGZ, 23*UBGZ, 2350UBGZ, 235*0UBGZ = <i>trucks</i>
fucked	N/A	TPUBGD, TP*UBGD, TPAOUBGD, TPAO*UBGD, 23UBGD, 23*UBGD, 2350UBGD
gay	TKPWA*EU	TKPWAEU, TKPWA*EU, 2K3W5EU, 2K3W5*EU = <i>guy</i>
gays	TKPWA*EUS or /S	TKPWAEUS, TKPWA*EUS, 2K3W5EUS, 2K3W5*EUS = <i>guys</i>
hell	HE*L	HEL = <i>hel</i> or <i>held</i>
kike	KAO*EUK	KAOEUK, KAO*EUK, K50EUK, K50*EUK = <i>kick</i>
nigger	TPH*EUG/ER	TPHEUG/ER, THP*EUG/ER, 234*EUG/ER = <i>finger</i> ; note: long vowel entries can be entered as <i>Niger</i>
piss	P*EUS	PEUS, P*EUS, PAOEUS, PAO*EUS, 3EUS, 3*EUS, 35EUS, 35*EUS = <i>miss</i> or <i>piece</i>

pisses	P*EUSZ	PEUSZ, P*EUSZ, PAOEUSZ, PAO*EUSZ, 3EUSZ, 3*EUSZ, 35EUSZ, 35*EUSZ = <i>misses</i> or <i>pieces</i>
poop	PAO*P	PAOP, PAO*P, 3507, 350*7 = <i>pop</i>
psychobitch	SAOEUBG OE PWEUFP	N/A
psychobitches	SAOEUBG OE PWEUFP/S	N/A
punk-ass	PUFRPBG/A*RS	N/A
queer/queers	KWAOER/KWAOERS	KWAOER, KWAO*ER, KW50*ER, KW50*ER = <i>year</i> ; KWAOERS, KWAO*ERS, KW50*ERS, KW50*ERS
shit/shits	N/A	SHEUT, SH*EUT, SHAOEUT, SHEO*EUT, 14EU9, 14*EU9, 1450EU9, 1450*EU9 = <i>shut</i> ; SHEUTS, SH*EUTS, SHAOEUTS, SHEO*EUTS, 14EU9S, 14*EU9S, 1450EU9S, 1450*EU9S, SHEUTSZ, SH*EUTSZ, SHAOEUTSZ, SHEO*EUTSZ, 14EU9SZ, 14*EU9SZ, SHEUTZ, SH*EUTZ, SHAOEUTZ, SHEO*EUTZ, 1450EU9SZ, 14EU9Z, 14*EU9Z, 1450EU9Z = <i>shut</i> or <i>shuts</i>
slut	SHR*UT	SHRUT, SHR*UT, SHRAOUT, SHRAO*UT, 14RU9, 14R*U9, 14R50U9, 14R50*U9 = <i>shut</i>
tit	N/A	T*EUT = <i>tit</i> as in <i>tit for tat</i> ;

		TEUT = <i>tut</i>
twat	N/A	TWAT, TWAUT, TWA*T, TWA*UT, TWAEUT, TWA*EUT, 2W59, 2W5U9, 2W5*9, 2W5*UT, 2W5EU9, 2W5*EU9 = <i>'twas</i>
whore/whores	WHO*R/WHO*RS	WHOR, WHO*R, HOR, HO*R = who or hour; WHORS, WHO*RS, HORS, HO*RS = <i>whose or hours</i>

Cock words

Many permitted words contain the word part *cock*. You may enter the following words in your main dictionary, both with an asterisk in the KOBG stroke and without:

Cockade	Cock-brained	Cockleshell
Cock-a-doodle-doo	Cockchafer	Cockloft
Cock-a-hoop	Cockcroft	Cockney
Cockaigne or Cockayne	Cocked	Cockneyism
Cock-a-leekie	Cocker	Cock of the rock
Cockalorum	Cockerel	Cock of the wood
Cockamamie	Cockeye	Cockpit
Cock-and-bull story	Cockeyed	Cockroach
Cock-and-hen	Cock-feathered	Cockscomb
Cock-a-whoop	Cockfight	Cock's-foot or cock's foot
Cockatoo	Cocking	Cockshut
Cockatrice	Cockhorse	Cockshy
Cock-beaded	Cockle	Cockspur
Cockboat	Cocklebur	Cocksure

Cockswain (pronounced KOK/SIN)	Cock-throttled	Half-cocked
Cocktail	Cock-up	Petcock
Cock-tailed	Cocky	Turkey-cock
	Bibcock	

Parentheticals

Parentheticals are commonplace in CART and should be used to indicate nonverbal sounds that may or may not be apparent to the consumer. It is recommended that parentheticals be used sparingly. Either parentheses or brackets are used in CART in the United States.

Some companies use this style: (Cheers and applause)

While others use this style: (Cheers and applause)

And others use this style (mainly Canada): (cheers and applause)

A parenthetical should appear on a new line by itself (exception: (inaudible))

No punctuation should appear inside or outside of the end bracket.

Although the following is a list of common parentheticals used in the industry, there are times when it becomes necessary for the CART captioner to manually insert a parenthetical. Create briefs for some or all of the following common parentheticals and be prepared to write others not listed manually:

(applause)	(no audio) [<i>used during technical difficulties</i>]
(bell ringing)	(phone ringing) or (cell phone ringing)
(cheers)	(please stand by)
(cheers and applause)	(silence)
(fire alarm)	(singing)
(inaudible) or (comment inaudible) [<i>used sparingly such as in press conferences</i>]	(sirens)
(laughter)	(speaking Spanish)
(laughter and applause)	(talking at the same time)

(whistle)

Another common parenthetical is (speaking in a non-English language), which should be used when the CART captioner cannot with certainty identify the language being spoken.

Parentheticals should be in mixed case or all caps to match your format.

Phonetics

CART captioners must turn on the phonetics feature in their CAT software. Check with your vendor regarding tweaking the default phonetics table to match your writing style. For example, a default table may contain the entry -PBLG for *j*. Some writers may use -PBLG for *th* sounds, and therefore, that entry would need to be changed from -PBLG for *j* to -PBLG for *th*. You should go through every line of the table and make changes as necessary. It may also be necessary to tweak the phonetics table going forward as you notice phonetic translates that do not produce a readable translation.

The phonetics table entries are not to be confused with a brief entry in a dictionary, a suffix, a prefix, or a root word. In the example above, where -PBLG can equal either the sounds of *j* or *th*, this will not interfere with or replace a define for -PBLG as *knowledge*, for example. Check with your CAT software vendor for information on how to develop your personal phonetics table.

Editing, paraphrasing, fingerspelling, and accuracy

One of the tools CART captioners use to achieve accurate text is to edit or paraphrase. It is acceptable and appropriate to do so when the accuracy of your text would be otherwise compromised. However, contrary to popular belief, a good CART captioner will always strive to write verbatim.

The skill of editing takes time and practice. Sometimes CART captioners are trained first as court reporters. As such, writing verbatim has always been the goal. However, there are times when getting every word will come at the expense of accurate translation. One tool that a CART captioner can use when the dialog is too fast is to reword and/or to drop clarifying or unnecessary clauses and phrases, being mindful not to alter the intent of the speaker or the meaning of the text. The following are examples of when and how to edit or paraphrase.

➤ Spoken:

>> Jane Sierpinski is the regional representative of the HKNC, Helen Keller National Center. Jane Sierpinski's region covers four states in the western region.

Edited/paraphrased:

>> Jane Sierpinski is the regional representative of the HKNC, Helen Keller National Center. **Her** region covers four states in the western region.

➤ **Spoken:**

>> Judy will assist with group 2, which will include John, Jim, Tracy, Doug, and Wolfgang. John, Jim, Tracy, Doug, and Wolfgang's group will meet in the front left corner of the room.

Edited/paraphrased:

>> Judy will assist with group 2, which will include John, Jim, Tracy, Doug, and Wolfgang. **Group 2** will meet in the front left corner of the room.

Editing and fingerspelling are crucial tools in CART to ensure the highest quality. Although it is acceptable and appropriate to replace names with nouns such as *he*, *she*, and *they* after fingerspelling or building the name at least once, it is the goal, whenever possible, to give the consumer a name, even if the spelling is not readily available.

➤ **Spoken:**

>> A professor from Columbia University was introduced as the new dean of students; 58-year-old James Goforth will be installed at the end of the month.

Fingerspelled:

>> A professor from Columbia University was introduced as the new dean of students; 58-year-old James G-o-f-o-r-t-h will be installed at the end of the month. Note: The hyphens or stitching do not appear when fingerspelling a word or name because it is not in your dictionary.

Glued:

>> A professor from Columbia University was introduced as the new dean of students; 58-year-old JAMES GO (delete space) FO*RT will be installed at the end of the month.

Edited:

>> A professor from Columbia University was introduced as the new dean of students; **he** will be installed at the end of the month.

>> A professor from Columbia University was introduced as the new dean of students; 58-year old James will be installed at the end of the month.

Fingerspelling takes practice. Running through some basic finger drills each day is recommended. Start by going through the alphabet, but do it slowly and return all fingers to the home-row key between each stroke. Next, pull out a book or magazine, and practice fingerspelling words randomly. Finally, close your eyes and practice fingerspelling names or words that are familiar to you, visualizing the letters in your mind.

Alphabets

Alphabets are an integral part of CART. Most CART captioners have several alphabets that they use regularly. Check with your software vendor for dictionary definitions. The following is a list of examples of some common alphabets:

Steno examples

English display

A-FPLT	A. (acronyms with periods)
A-FRPBLGTS	A- (stitching)
A*	A (capital letter that glues)
A-FRPB	“A” (quoted letters)
A-RBGS	a (lower case letter that glues)

Flush (or forceout) stroke

In CART, it is important to be able to force out your last strokes so that the complete text is put on the screen. You can choose any stroke you like, but the most commonly used stroke is ***#**, which is the asterisk and pound/hash sign. If you are writing at a steady pace, it may not be necessary to force out. However, if you reach the end of a sentence, stroke a period, and must wait for the next sentence to begin, you must flush out the pending strokes. Practice flushing often so that it becomes a regular part of your writing. Check with your software vendor for the dictionary definition.

Clearing screen

Clearing simply refers to clearing the screen of text. It is appropriate to clear your screen:

- in between two distinct events, such as the beginning of a new class or a new seminar
- when there is a captioned video being shown
- if you have such an egregious error and you cannot delete it. An example would be a body part or swear word that was not said

A general rule when clearing is to wait at least three seconds before doing so or read the last lines that appear on the screen to make sure there is enough time for them to be read before clearing.

Scripting in CART

Creating script files

Oftentimes, CART captioners are provided with a script. Some CAT software allows the CART captioner to send the script file one line at a time with a single keystroke. Check with your CAT software vendor to see if scripting while providing CART is a feature. This is sometimes referred to as a CART window in various CAT software packages.

There are three options to prepare a script:

1. Convert the script from Word or other program into the CAT software, and send the file.
2. Start the realtime session in realtime software, and create a script file by writing the provided script; edit the new file, and send.
3. Prep from the provided script and write in realtime on the job, without sending a script file.

Some scripts contain information that the CART captioner doesn't need, such as stage directions and other instructional type material. In this case, it would be time-consuming to convert and edit the provided script, and a CART captioner may be better off either prepping from it or writing it into a new script file.

Other scripts may be perfect for converting and importing into a CART captioner's software but may arrive at the last minute, in which case prepping from it would be the best decision. The most important thing to remember is if a script is provided and there is ample time to convert it and import it, or to write it and create a new script file, then that is the ideal scenario. Sending a script file that has been edited beforehand will almost always yield a cleaner or more accurate product than writing live.

When editing a script to be imported into realtime software, the text must match the display preferences of the CART company, i.e., ending punctuation on format, speaker IDs/tokens, and mixed case or all caps.

Scripting and realtiming

The most important thing to remember when sending a script file is to wait until the second-to-last word of a line is spoken before sending the line. Often speakers deviate from the scripts, and many people ad lib. A CART captioner could end up sending words that were not spoken. It may be necessary to write what is being said rather than send text from the script file in the event the words spoken do not match the words in the script. This exercise is a unique skill and should not be attempted without practice. The end result should be seamless, and there should not be long pauses between live realtime writing and script sending. Practice going back and forth between writing and sending, moving the cursor from the line that is being spoken to the next line that will be sent. If ever you become lost in the script, abandon it and continue writing live realtime until you can perform a search within the script, perhaps at a break.

Once a CART captioner becomes skilled at writing and scripting, it will be possible to quickly search for keywords in the script to get back on track; however, a new CART captioner should not attempt this if the result is missed text. In addition, a skilled CART captioner will be capable of editing text in the script on the fly, making small corrections before sending a line.

Sending script files

Most realtime software has a macro or command for sending the script. It is also possible to create a steno stroke associated with that macro or command to send the script. Check with your software vendor for more information on loading and sending script files.

Quality control

CART quality considers three parts in its guidelines: completeness, accuracy, and timeliness. CART is considered to be complete if the text is readable, makes sense, and nearly verbatim so as to convey the essential information being given.

The following items are to be considered when determining the completeness of CART:

- Realtime text is complete and appears continuously from the start to the end of the event.
- Nonverbal communications affecting the substance and flavor of the event are included.
- The realtime text contains meaningful punctuation, and speakers are identified by symbol or name.

The relative difficulty of a CART event will affect the completeness and quality of the realtime text. Factors that can impact the quality and completeness of realtime text are as follows:

- incomplete preparation material
- equipment failure
- clarity of audio
- overlapping speakers
- speed of the speakers
- density of material
- speaker accents

A CART captioner has met the accuracy guideline if, after review, it is determined that the text meets a minimum accuracy level of 98 percent total error rate (TER).

Total error rate formula

To calculate your TER, convert the raw transcript (unedited) into a .txt or .rtf file and open in it Microsoft Word. Count all the errors, keeping in mind that a two-stroke word that does not translate if broken into two English words counts as two errors. Multiply the number of errors by 100. Divide that number by the total word count, which can be found in Word by clicking on Tools and then Word Count. Then subtract that number from 100. That is the score. A score of 98 percent is considered entry-level CART quality. The ultimate goal, however, is above 99 percent. An alternate name for this formula is a TAR, or total accuracy rate.

A new CART captioner should track his or her own progress by reviewing and scoring raw transcripts frequently. It is helpful to categorize errors to identify areas of weakness. See chart below.

CART trainee correction sheet

Speaker ID 	Wrong word ++++	Plural	Spelling/dictionary entry
Misstroke ++++	Apostrophe	Numbers 	Quotes
1,2 Word/hyphen (1/2 point) 	Extra/missing word	Inflected endings 	and/an
Punctuation (1/2 point) ++++	Stack/split stroke	Style 	Other

Errors: 30
 Word Count: 2,000
 Errors x 100: 3,000
 divided by Word Count: 1.5
100 – 1.5 = Score: 98.5%

The following list includes items that should be counted as errors in determining accuracy:

- omitted or improperly used possessives
- missing essential words
- extra words or strokes
- misstrokes
- misspelled words that were not fingerspelled
- untranslates (unless it results in the correct spelling of a phonetic output)
- wrong numbers
- wrong words
- homophone conflicts
- speaker ID errors
- missing or incorrect punctuation, including hyphens and slashes
- extra/missing space
- style

CART is considered to have met the timeliness guideline if the text is delivered with a minimum delay, trailing the audio by an amount of time that the delay, in and of itself, does not significantly impact the meaningfulness of the text.

When an incorrect word is displayed, it is acceptable to use dashes and rewrite the word. Alternatively, a correction stroke (an asterisk) is used to remove the incorrect word and then the correct word is rewritten. A CART captioner should be mindful that deleting and then rewriting a word multiple times may result in causing the consumer confusion and thus ought to be avoided. If dashes are used to make corrections, the incorrect word prior to the dashes may not be counted as an error if the word following the dashes displays correctly.

Style

There are certain style guidelines that are generally accepted in the CART industry. For example, one generally accepted style guideline is making the consumer's screen as easy to read as possible by getting rid of extraneous items, such as line numbers, page numbers, page breaks, toolbars, and task bars. The following guidelines should be used in the event that a CART captioner is not provided specific style guidelines by the CART company.

Literal case/mixed case

In the absence of specific directions from the CART company, it is recommended that CART captioners display text in mixed case letters. Mixed case letters are easier to read, and the trend is to stream text in mixed case letters. Main personal dictionaries and job dictionaries should be programmed in mixed case letters.

With that said, however, there are still regional trends, and consumers or CART companies may prefer all caps. Towards that end, then, special format symbols are needed to force lowercase letter(s) when displaying in all caps. Check with your software vendor and user guide to properly program words like those listed below. Check spelling before adding format symbols.

al-	al-SHEIKH
De	DeVRY
Di	DiCAPRIO
Du	DuPONT
La	LaMONT
Le	LeTOURNEAU
Mac	MackENZIE
Mc	McDONALD
(sp) de (sp)	PONCE de LEON
(sp) de la (sp)	VIA de la VALLE
(sp) del (sp)	CAMINO del la PLAZA
von	CLAUS von BULOW
<i>(sp = space)</i>	

Add the following entries to your dictionary, forcing the first letter to be lowercase and/or create a lowercase *i* and *e* prefix to write before a word to create these (and some yet-to-be-invented) words. Suggested strokes are SMAOE and SMAOEU for the small *i* or *e* attached to the following capped word.

iTV	iMac	iPhone
eBay	iVillage	iTouch
iPod	iBook	iPad
iPaq	iTunes	Wii

Add the following entries to your dictionary, forcing the lowercase letter(s) to be lowercase:

TiVo	DirectTV	Ph.D.
VoIP	Rx	

When displaying in all caps, if an acronym can also be an English word, it should be written with periods. For example: I.T. Department, S.W.A.T., D.O.T., or U.S.

Measurements and heights

Use figures for feet and inches, but use words for just feet.

- She is just under 5'2"; short for her age.
- The dog jumped 21'4" off the dock.
- He was seven feet tall.

Use a lowercase X surrounded by hard spaces/sticky spaces when spoken as *by*.

- 4 x 4
- 2 x 4

Numbers

The goal for numbers is to have them as easily readable as possible. Therefore, usually the figures as opposed to the words are preferable, even if some grammar rules are ignored.

For numbers ten and under, use words.

For numbers 11 and up, use figures up to 999,999.

Speeds and temperatures always use figures.

Use figure plus the word *million*, *billion*, *trillion* except if *thousands* is spoken.

- 4 million
- 12 billion
- 100 trillion
- 8,507,444
- 12,600,500,000

Use .25 for quarter, .5 for half and .75 for three-quarters when preceding *million, billion, or trillion*.

- 4.5 million
- 3.75 trillion
- 11.25 gazillion

Fractions

Write out fractions except when accompanied by a whole number. The exception is the stock market; see below. Use decimals for tenths, hundredths, and thousandths.

- One-half
- Two-thirds
- Two and a half should be written as 2 1/2.
- Eight and a quarter should be written as 8 1/4.
- Three and a third should be written as 3 1/3.
- Eight tenths should be written as .8.
- Five hundredths should be written as .05.
- Seven thousandths should be written as .007.

Avoid the temptation to enter steno outlines in your dictionary to display the above examples. Rather, write it out manually, including decimals and/or slashes.

Stock market

Do not use commas unless the Dow is over 10,000; NASDAQ and S&P do not take a comma.

- The Dow is down 30 points at 12,222.
- The NASDAQ is down 11 points at 2583.
- The S&P 500 lost 4 1/3 to 1162.80.
- Your local index fell 5/8. (not 5/8ths or 5/8s)

Money

Use figures under 1 million.

- Two dollars and fifty cents should be written as \$2.50.

Write the dollar sign, even if it is not spoken and if the intention is clear.

- Four million should be written as \$4 million.

Use .5 for “half.”

- Eight-and-a-half dollars should be written as \$8.50.
- Six-and-a-half billion dollars should be written as \$6.5 billion.
- Seventy-five cents should be written as 75 cents.
- A dollar fifty should be written as \$1.50.
- Four-and-a-half dollars should be written as \$4.50.

Times

Use figures for all times.

- “We hope you’ll join us at 11.” This should be written as “We hope you’ll join us at 11:00.”

Ages

Use figures when referring to ages.

- She was 4 1/2 years old.
- He was 8 years old.
- The 5-year-old child was presumed missing.

Punctuation

Periods, question marks, and exclamation points may or may not be followed by a new line and will be determined by the CART company’s preference.

You may use semicolons, colons, exclamation points, or ellipses where appropriate.

- 4:00 PM
- John 4:13

When using colons in speaker IDs, only one space after the colon, as follows:

- >> JOHN DOE: My name is John Doe.

Plurals and possessives

Use a lowercase *s* or apostrophe *s*, depending on the company’s style, with acronyms and numbers. Use *s* apostrophe in words and acronyms ending in *s*. Add *-es* to names ending in *s* to make them plural. Create a steno stroke for lowercase *s* and *-es* so as not to rely on software intelligence. Create a steno stroke for *-s* to add to names when you do not want the software to change the spelling.

- DVDs
- DVD'S
- 1970s
- 1980'S
- CBS'
- ABC'S
- Witness'
- Elvis'
- Kennedys
- Joneses (more than one Jones)
- Jones' (belongs to one particular Jones)
- Joneses' (belongs to the more than one Jones)
- 20s (temperatures)
- '20s (1920s)
- 20'S
- '20'S

Speaker IDs

Use speaker IDs, or tokens, in some settings, depending on the CART company's preference. There is only one space after the colon. Speaker IDs may be all capped or mixed case. Refer to the CART company's preferences.

>> Instructor:

>> MALE STUDENT:

>> MR. SMITH:

>> KENNETH SMITH:

>> Judy Jones:

Quotations

Use quotations around movie, show, song, book, and newspaper titles as well as for nicknames within a name.

- "Shrek 2" topped sales at the box office this weekend.
- "The Story of Helen Keller" is an autobiography.
- "Heather Has Two Mommies" was banned from the library.
- "The New York Post" reported the takeover.
- Sean "P. Diddy" Combs created the clothing line Sean John.
- P. Diddy is the executive producer of "Making of the Band."

- “Doubt” won the Tony for “Best Play” in 2005.

Slashes

Use slashes for dates and fractions.

- 9/11/01
- 2/3
- 50/50

Phone numbers

Use hyphens to separate numbers.

- 555-1212
- 1-800-222-TIPS

Percentages

Use the percent symbol.

- 25%

Convert fractions to figures.

- 8.5% (spoken 8 1/2 percent)
- .4% (spoken 4/10 of a percentage point)

Web addresses

Create strokes for .com, .org, .gov, .net, .info, .tv, .edu, .ca, etc. (Some companies use all lowercase.)

- WWW.FCC.GOV
- www.fcc.gov

Use delete space stroke between words in Web addresses.

Some CART software includes a glue-together or stick-together feature that can be incorporated into a dictionary entry. Stroke the entry before a Web address to glue each word in the address together. Include a command in the website extensions to turn off the glue together or stick together command. It is very important to either include the glue off command in the definition or to stroke the command manually after the website name, otherwise the remainder of the realtime text will glue together.

Scripture readings

Use the chapter and verse setup from Bibles.

- 1 Corinthians 4:1-4 (spoken as First Corinthians Chapter 4, verses one through four)

- 1 Corinthians 4:1-4 (spoken as First Corinthians 4, one through four)

Booking a CART captioning job

Often the clients or consumers will contact a CART captioner and they really do not know what they want, other than to say they need to “meet the ADA requirements.” Or, clients will say, “I have a deaf employee, and he cannot hear what is going on in meetings,” or “I have a student who is struggling in class,” or “Can you put the words onto a video?” or even “I don’t know what I want, but I was told to call you.” It is our job as professionals to help guide the consumers and clients through the maze of options to determine what they want and need for services.

The most important thing to focus on is the desired outcome, meaning how the text will be displayed. The following list of questions is not comprehensive, but it will help you guide the client or consumer through to a successful and desired outcome.

- What is the event?
- When is the event?
- What is the start and expected end time of event?
- What is the location of the event?
- How many people will require captioning services — just one person or the entire audience?
- Will there be cameras projecting a video image, or do you want just a full screen of text?
- Do you want the words to appear in the room and also be streamed to remote participants?
- Will a PowerPoint be used? If so, do you want the words to appear on the same screen as the PowerPoint or on a separate screen?
 - Note: You can use a piece of equipment that lays the words on top of a video image but does not embed it into the signal, like Text on Top for example.
- Is this a webinar using a platform such as Adobe Connect or WebEx?
- Is an LCD projector and screen available at the venue for the CART captioning display?
- Do you want the words physically embedded in the video?
 - If they choose to have the words embedded into the video image, you then explain what the options are, starting with what an encoder is and what a character generator is (pieces of equipment that embed the text into the video image).
 - On-site encoder captioning (data streamed through encoder or character generator and embedded onto a video image) is referred to by many names. Clarification of the type of services is needed in order to meet the customer’s expectation.
 - Remote encoder captioning will require phone lines at the event site unless iCap is being used. If iCap is being used, Internet connectivity is required.

Note that you have to determine who is going to supply each of the needed pieces of display equipment and software: LCD projector, screen, encoders, Text on Top, etc.

From here, you hopefully can discern what they want and where they want the text to go. You then go a little deeper and explain to them that they can have a person on-site or they can have a person working remotely.

- The remote person has to be able to hear the meeting, and there are several options on how to receive the audio (Skype, Google Chat/Talk, conference call system, hybrid coupler, speakerphone, or other).
- Note that it is good to talk to their technical team, if possible.

You conclude with the job details, such as:

- Will there be any concurrent sessions requiring captioning? If so, how many?
- Will prep material be provided? Accuracy and quality captioning is enhanced when prep material is provided.
- Will a file be provided upon conclusion of the event? If so, when and to whom?
- Who will be receiving an invoice for payment and what are the payment terms?

NCRA provides an online listing of all working members, which includes members' credentials and services that is open to the public and can be used to locate captioners.

CART captioner's checklist

To reduce the risk of human error, a checklist may be used prior to beginning a job. When working on-site, a CART captioner should be set up and ready to go 30 to 60 minutes prior to the beginning of the job. When working remotely, a CART captioner should be set up and ready to go 10 to 15 minutes prior to the beginning of the job.

On-site one-on-one CART

1. ___ Boot up computer and turn on steno machine
2. ___ Start CAT software
3. ___ Load job-specific dictionaries
4. ___ Initialize realtime file
5. ___ Test speaker IDs
6. ___ Test job-specific briefs
7. ___ Set display for readability and customer preference (upon completion of session)
8. ___ Terminate realtime session
9. ___ Save to text file, if requested
10. ___ Scan file for untranslated strokes, and spell-check
11. ___ Email file, if requested

On-site overhead/projected CART

1. ___ Connect to projector and turn on projector
2. ___ Boot up computer and turn on steno machine
3. ___ Start CAT software
4. ___ Load job-specific dictionaries
5. ___ Initialize realtime file
6. ___ Test speaker IDs
7. ___ Test job-specific briefs
8. ___ Set display for readability and customer preference, testing that the right margin does not bounce during realtime
9. ___ To display overhead, toggle to display projection
10. ___ Position CART screen so that the consumer can maintain line of sight between the screen, PowerPoints, speaker, and sign language interpreters
11. ___ If there is no PowerPoint screen, then place the CART screen beside the speaker or directly behind and above the speaker
12. ___ When applicable, plug in headphones to audio board or amp box (upon completion of session)
13. ___ Terminate realtime session
14. ___ Save to text file, if requested
15. ___ Scan file for untranslated strokes, and spell-check
16. ___ Email file, if requested

Remote CART

1. ___ Boot up computer and turn on steno machine
2. ___ Open streaming text application
3. ___ Start CAT software
4. ___ Load job-specific dictionaries
5. ___ Initialize realtime file
6. ___ Test speaker IDs
7. ___ Test job-specific briefs
8. ___ Load scripted files, if any, and if software allows
9. ___ Plug headphones into the computer (if using programs such as Skype or AIM to acquire audio), and activate the audio program
10. ___ Plug headphones into auto coupler/amplifier or phone audio system (if using the phone to acquire audio), then dial the call-in number
11. ___ Verify with consumer that text is streaming (upon completion of session)
12. ___ Disconnect audio
13. ___ Terminate realtime session
14. ___ Save to text file, if requested
15. ___ Terminate the streaming text application
16. ___ Scan file for untranslated strokes, and spell-check
17. ___ Email file, if requested

Troubleshooting

It is recommended that you keep important phone numbers on hand and/or programmed into your phone, i.e., CART software vendor support, CART companies you provide services for, other CART captioners you can contact to relieve you if you cannot resolve technical issues, computer manufacturer technical support, etc.

Hardware issues

There is no power to the steno machine.

- Is steno machine plugged into the wall or a power source?
- Is the power strip plugged into the wall and turned on?
- Is the USB cable and/or port you are using working properly? Try another USB cable and/or port, if possible.

There is no steno to the computer.

- Is the port on the writer working?
- Is the realtime cable damaged?
- Is the realtime cable or wireless device plugged in and seated tightly?
- Are any pins in your port bent?
- Is your writer in realtime mode?
- Are the drivers for your PCMCIA serial card or USB-to-serial adapter installed?
- Which COM port you are using? (Check the Device Manager.)
- Is the writer/adapter recognized in the Device Manager?
- Is the USB port you are plugged into working?
- Are there other wireless devices nearby that could be interfering?

You don't see your text appearing in the streaming text platform.

- Make sure your com ports in your CAT software and the streaming text platform match.
- Make sure you have connected to the streaming platform.
- If the consumer does not see your text, but the event is active, ask your consumer to refresh their screen.
- Make certain you have the correct writer in your software. For instance, if you have a Cybra, make sure in your software that you have selected Cybra as your steno machine.
- Make certain you are outputting to the proper source, i.e. CaseView, ANSI.
- Make certain you have Internet connectivity.

The text isn't being projected on the screen.

- Is the VGA cable plugged into your computer AND the projector?
- Are you toggled so you can see the text on the big screen as well as your computer screen?

Audio issues

The landline audio is of poor quality.

- If phone is plugged into a wall jack, is there a dial tone?
- Is there long distance service?
- Is there excessive white noise on the line?
- Is the physical phone line in good shape? No bends or kinks?
- Is the plastic piece on either end tightly plugged in?
- Have you disabled call waiting, voice mail messaging, or other extra services?

Voices are muffled using either landline or VoIP lines.

- Questions for the CART consumer:
 - Is the mic turned on and plugged into the correct place?
 - Are the batteries on the mic and the receiver charged?
 - Is the phone on mute?
 - Can the mic be moved closer to the person speaking?
- Questions for the CART captioner:
 - Is the headphone plugged tightly into the phone or computer jack?
 - Have you disconnected and reconnected?
 - Is the headphone battery charged?
 - Is the phone on mute?

Phone connection issues

If the long distance carrier has discontinued your ability to make long distance calls, a calling card or dial-around number may be used.

- Is the phone card charged with minutes?
- Have you redialed the numbers?
- Do you need to dial an 8 or a 9 to get an outside line first?
- Has the phone card expired?
- For further information, see 1010phonerates.com/dial_around_faq.html. Check different calling card companies for their rates.

Computer issues

The computer system is running slowly.

- Are background scans turned off? (virus scans, automatic updates, backup programs, firewalls, etc.)
- Have you run a system scan?
- Have you defragged your hard drive?
- Have you archived and deleted old files to free up memory?

Resources and links

Resources

- NCRA: [NCRA.org](https://www.ncra.org)
- [CART Captioner's Manual](#)
- [CART Captioners' Bill of Rights](#)
- [CART Consumer Bill of Rights](#)
- [NCRA's CART & Broadcast Captioners Code of Professional Ethics](#)
- [NCRA's Broadcast and CART Captioning Committee — Guidelines for CART Captioners](#)

Deaf and hard-of-hearing organizations

Alexander Graham Bell Association for the Deaf and Hard of Hearing (AG Bell)

AG Bell helps families, health-care providers, and educational professionals understand childhood hearing loss and the importance of early diagnosis and intervention. Through advocacy, education, research, and financial aid, AG Bell helps to ensure that every child and adult with hearing loss has the opportunity to listen, talk, and thrive in mainstream society. With chapters located in the United States and a network of international affiliates, AG Bell supports its mission: Advocating independence through listening and talking!

agbell.org

American Speech-Language-Hearing Association (ASHA)

ASHA is the professional, scientific, and credentialing association for more than 127,000 members and affiliates who are audiologists, speech-language pathologists, and speech, language, and hearing scientists.

asha.org

American Academy of Audiology

The American Academy of Audiology has resources for consumers who want to learn more about hearing and balance, students thinking about a career as an audiologist, and professionals with questions about technical topics in audiology.

audiology.org

American Hearing Research Foundation (AHRF)

AHRF serves two vital roles: to fund significant research in hearing and balance disorders and to help educate the public.

american-hearing.org

American Society for Deaf Children (ASDC)

ASDC supports and educates families of children who are deaf and hard of hearing and advocates for high-quality programs and services.

deafchildren.org

Association of Late-Deafened Adults (ALDA)

ALDA's membership is international in scope. ALDA works collaboratively with other organizations around the world, serving the needs of people who are late-deafened. It extends a welcome to everyone, late deafened or not, who supports its goals.

alda.org

Canadian Academy of Audiology (CAA)

The Canadian Academy of Audiology is dedicated to enhancing the role of audiologists as primary hearing health-care providers through advocacy, education, and research.

canadianaudiology.ca

Canadian Association of the Deaf-Association des Sourds du Canada (CAD-ASC)

CAD-ASC provides consultation and information on Deaf needs and interests to the public, business, media, educators, governments, and others. It conducts research and collects data regarding Deaf issues, issues reports on these studies and provides expertise on them, develops and implements pilot programs, and offers assistance to Deaf organizations and service agencies across the country. It also provides a major library and resource center on deafness at its office in Ottawa, Ontario.

cad.ca

Canadian Hard of Hearing Association (CHHA)

CHHA is a consumer-based organization formed by and for Canadians who are hard of hearing. CHHA works cooperatively with professionals, service providers, and government bodies, and it provides information about hard-of-hearing issues and solutions. CHHA is Canada's only nationwide nonprofit consumer organization run by and for people who are hard of hearing. CHHA works to eliminate the isolation, indignation, and frustration of people who are hard of hearing and deafened by assisting in increasing personal self-esteem and confidence, which will lead to total integration in society.

chha.ca/chha/

International Federation of Hard of Hearing People (IFHOH)

IFHOH provides a platform for cooperation and exchange of information between hard-of-hearing organizations. It promotes greater understanding amongst people who are hard of hearing throughout the world.

ifhoh.org

Hearing Aid Manufacturers

A variety of companies make hearing aids. As of publication, the website below has a list.

verywell.com/hearing-aid-manufacturers-1048794

Hearing Loss Association of America (HLAA)

HLAA is the nation's largest organization for people with hearing loss. HLAA exists to open the world of communication for people with hearing loss through information, education, advocacy, and support.

hearingloss.org

Hearing Loss Web

Hearing Loss Web provides information and support for people who are hard of hearing and late deafened.

hearinglossweb.com

National Association of the Deaf (NAD)

NAD advocates for the rights and quality of life of individuals who are deaf and hard of hearing in the United States.

nad.org

National Institute on Deafness and Other Communication Disorders (NIDCD)

NIDCD is one of the institutes that comprise the National Institutes of Health (NIH). The NIH is the federal government's focal point for the support of biomedical research. The NIH's mission is to uncover new knowledge that will lead to better health for everyone. Simply described, the goal of NIH research is to acquire new knowledge to help prevent, detect, diagnose, and treat disease and disability. The NIH is part of the U.S. Department of Health and Human Services.

nidcd.nih.gov

National Technical Institute for the Deaf (NTID)

The National Technical Institute for the Deaf, a college of Rochester Institute of Technology, focuses on providing students who are deaf and hard of hearing with technical know-how and professional education programs to prepare them to live and work in the mainstream of a global community. NTID also undertakes a program of applied research designed to enhance the social, economic and educational accommodation of people who are deaf and shares its knowledge and expertise through outreach and other information dissemination programs.

ntid.rit.edu

Speech-Language and Audiology Canada (SAC)

Formerly known as Canadian Association of Speech-Language Pathologists and Audiologists, SAC supports, promotes, and elevates the professions of its members. It is the only national organization in Canada passionately supporting and representing speech-language pathologists, audiologists, and supportive personnel inclusively.

sac-oac.ca

Telecommunications for the Deaf & Hard of Hearing, Inc. (TDI)

TDI's mission is to promote equal access in telecommunications and media for people who are deaf, hard of hearing, late-deafened, or deaf-blind.

tdi-online.org