

# **TTY Call Taker Proficiency and Quality Assurance Operational Standard/Model Recommendation**



NENA TTY Call Taker Proficiency and Quality Assurance E9-1-1 Operational Standard/Model Recommendation  
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## 1 Executive Overview

In July of 1998, the U.S. Department of Justice published a technical assistance manual entitled Americans with Disabilities Act: Access for 9-1-1 and Telephone Emergency Services, which stated, “The Department believes that frequent testing is essential to ensure direct, equal access. Testing call takers and their equipment is also one of the most effective ways to ensure compliance with the ADA’s requirement that accessibility features are maintained in operable working condition” (DOJ, page 9).

In order to provide detailed information to assist PSAPs in establishing and maintaining an effective method of measuring call-handling proficiency, NENA has published this Operational Standard/Model Recommendation on TTY Call Taking Proficiency and Quality Assurance.

## 2 Introduction

### 2.1 Purpose and Scope

The purpose of this document is to provide recommendations toward the implementation of a comprehensive Quality Assurance Program which includes training of call takers, conducting random, unannounced test calls, completing documentation of training and test calls, and conducting remediation activities to address identified deficiencies and equipment malfunctions.

### 2.2 Reason to Implement

The U.S. Department of Justice has indicated that PSAPs should test their equipment and call takers to ensure compliance with the ADA’s requirements for direct and equal access. Utilizing this document is a step toward compliance.

### 2.3 Benefits

Using this NENA TTY Call Taker Proficiency and Quality Assurance E9-1-1 Operational Standard/Model Recommendation Document will:

- Provide a consistency with methodology in testing call-takers, and
- Ensure that specific minimum criteria are included in the testing program.

### 2.4 Technical Impacts Summary

There are no technical impacts regarding testing of call-taker proficiencies.

## 2.5 Document Terminology

The terms "shall ", "must " and "required" are used throughout this document to indicate required parameters and to differentiate from those parameters that are recommendations. Recommendations are identified by the words "desirable" or "preferably".

## 2.6 Reason for Reissue

NENA reserves the right to modify this document. Whenever it is reissued, the reason(s) will be provided in this paragraph.

## 2.7 Cost Factors

Implementing this standard should not require any additional costs to those agencies that currently provide comprehensive, initial TTY training, and on-going refresher training to their personnel in accordance with the DOJ standards. Agencies which currently do not provide the comprehensive, initial training and refresher training may incur the associated costs of training all of their call-taking personnel in order to implement this proficiency testing program.

## 2.8 Cost Recovery Considerations

“Not Applicable”.

## 2.9 Acronyms/Abbreviations

This is not a glossary! See NENA 01-002 – NENA Master Glossary of 9-1-1 Terminology located on the NENA web site for a complete listing of terms used in NENA documents. Link to the master glossary is:

[http://www.nena.org/9-1-1TechStandards/nena\\_recommended\\_standards.htm](http://www.nena.org/9-1-1TechStandards/nena_recommended_standards.htm)

<b>The following Acronyms are used in this document:</b>	
ACD	Automatic Call Distribution
ASL	American Sign Language
DB	Deaf-Blind
CA	Communication Assistant
GA	Go Ahead
GA SK	Go Ahead Stop Keying (Go Ahead or Ready to Hang Up)
HCO	Hearing Carry Over
Q	Indicates a Question
SK	Stop Keying
SKSK	Stop Keying Stop Keying (Hanging Up Now)
TRS	Telecommunications Relay Service
TTY	Teletypewriter (a.k.a. TDD, Telecommunications Device for the Deaf)
VCO	Voice Carry Over

<b>The following Acronyms are used in this document:</b>	
XXXX	Error (erasing the error)
<b>The following <i>new terms</i> are included in this document:</b>	
ASL Gloss	Reference to when ASL is communicated through typing – as on a TTY – and many of the visual elements crucial to clear communications are lost.
Acoustic Coupler	The rubber cup that holds the telephone handset on the TTY.
Deaf	Partially or completely lacking in the sense of hearing. When referencing the Deaf community, this refers to people who use American Sign Language as a primary means of communication.
Deaf-Blind	A term used to describe a person in whom hearing loss and vision impairment combine to interfere with his/her ability to function effectively in life. S/he may have either total or partial loss of both senses, or one or the other.
Direct [and equal] access	The ability to receive TTY calls without relying on an outside relay service or third-party services.
Direct Connect	A method of connecting a TTY directly into the phone line. When using direct connect, you can dial directly from the keyboard and use auto-answer features.
Hard of Hearing	The term "hard of hearing" refers to those who have some hearing, are able to use it for communication purposes, and who feel reasonably comfortable doing so. A hard of hearing person, in audiological terms, may have a mild to moderate hearing loss.
Integrated TTY	Integrated TTY refers to TTY functionality that has been integrated within a computer work station. This may be found within the 9-1-1 telephony system or interfaced in a CAD (computer aided dispatch) system.
Inter-center testing	This is a testing mechanism by which call takers make test calls to other PSAPs to test their proficiency.
Intra-center testing	This is a testing mechanism by which call takers make test calls from position to position within the Center utilizing the internal telephony system.
Pre-programmed message	Pre-programmed messages refer to TTY messages that may be programmed into some models of standalone or integrated TTYs that allows the call taker to transmit the message with a minimum number of keystrokes or mouse clicks.
Speech impairment	Speech Impairment is a communication disorder, such as stuttering, impaired articulation, language impairment or a voice impairment, which adversely affects a person's ability to articulate speech clearly.
TTY protocol	TTY protocol refers to the use of unique abbreviations used to control the flow of conversation. The use of TTY protocols is critical to effective TTY communications.

### **3 Operational Description**

To establish and maintain call taker proficiency, NENA recommends the implementation of a comprehensive Quality Assurance Program which includes training of call takers, conducting random, unannounced test calls, completing documentation of training and test calls, and conducting remediation activities to address identified deficiencies and equipment malfunctions.

#### **3.1 Training of Call Takers**

The DOJ has recommended that, to establish an effective testing program, a PSAP must test whether call takers have been trained adequately to recognize and process TTY calls. To provide further details to PSAPs related to establishing a minimum TTY training standard, NENA has adopted and published the NENA TTY Training Operational Standard (52-001). The standard is designed to serve as a model standard operating procedure for providing comprehensive training to 9-1-1 PSAP personnel and includes recommended standards developed by the Association of Public Safety Communications Officials (APCO) in their published ADA Training Standard for Communications Officers.

##### **3.1.1 Initial Training**

The ADA does not specify how call takers must be trained, but the Department believes that the following are essential to proper training. Additionally, training should be mandatory for all personnel who may have contact with individuals from the public who are deaf, hard of hearing, or who have speech impairments.

Comprehensive training should include:

- Information about the requirements of the ADA and Section 504 of the Rehabilitation Act for telephone emergency service providers;
- Information about communication issues regarding individuals who are deaf or hard of hearing, or who have speech impairments, including information about American Sign Language;
- Practical instruction on identifying and processing TTY calls, including the importance of recognizing silent TTY calls, using proper syntax, abbreviations, and protocol when responding to TTY calls and relayed calls; and
- Hands-on experience in TTY communications, especially for new call takers, as part of their initial training orientation.

### **3.1.2 Refresher Training**

In addition to the initial, comprehensive training required for PSAP personnel, the DOJ also states, “PSAPs should require or offer refresher training at least as often as they require or offer training for voice calls, but at a minimum, every six months” (DOJ, page 9).

Both of the aforementioned NENA TTY Training Standard (52-001, Section 3.5, page 14 of 19) and the APCO ADA Training Standard for Communications Officers (Appendix C, page 23) address recommendations for Refresher Training including refresher training topics.

## **4 Test Calls**

The Department of Justice’s technical assistance document also stated that PSAPs should “conduct random TTY test calls of each call-taking position. The tests shall be designed to ascertain whether TTY equipment functions properly and whether personnel have been adequately trained to recognize TTY calls quickly, to operate TTY equipment, and to conduct TTY conversations (DOJ, page 9-10).

### **4.1 Test Call Methodology**

Different PSAPs have approached TTY testing using a variety of methods. Some examples include:

#### **4.1.1 Intra-Center Testing**

Some PSAPs have their call takers make test calls from position to position within the Center. This type of testing has its limitations because the testing is only utilizing the internal telephony system and is conducted among operators who have been TTY trained but do not completely understand the nuances of TTY calls placed by deaf, hard of hearing or speech disabled persons, including the use of ASL. This method limits the opportunity to identify training and operational deficiencies that may impact TTY call proficiency during emergency TTY calls.

#### **4.1.2 Inter-Center Testing**

Other PSAPs have their call takers make test calls to other PSAPs to test their proficiency and equipment. This type of testing also has limitations because, although the testing utilizes internal and external telephony systems, it is again conducted between operators who have TTY training but do not have the experience of traditional TTY users. This method also limits the opportunity to identify training and operational deficiencies, which may impact TTY call proficiency during emergency TTY calls

#### **4.1.3 Volunteer TTY Caller Testing**

This type of TTY testing is commonly referred to as a Phone Pal Program. Phone Pal Programs and how to establish them are described in detail in the NENA Phone Pal Program OID (Document 52-501). This program has been effectively implemented by many PSAPs. By utilizing this method,

training and operational deficiencies may be more readily identified and remedied so as to provide for more proficient handling of TTY calls during emergencies.

However, there may be limitations to this approach in that some PSAPs and volunteer callers alike have reported that over time the test calls decline and program commitment is sometimes lost. PSAPs that implement Phone Pal Programs should take steps to keep their employees and the volunteer callers committed to the program and its goals. An effective way to keep all participants engaged is to maintain an open and continuous dialogue to elicit and provide feedback and provide updated reports related to program success.

As technology changes, it results in the need for operational procedures to be changed. In addition to routine testing, any changes to a PSAP's telephony or TTY equipment shall be thoroughly tested to ensure that direct access to emergency services are not hampered or lost to those who use TTY equipment to access 911 services. Additionally, call takers must be fully trained on the impact of those changes on the operational procedures for handling TTY calls.

NENA recommends that PSAPs incorporate a combination of testing methodologies to include consideration of the following information when implementing a Quality Assurance Program to test TTY Call Handling Proficiency of its operators and equipment.

## **4.2 Minimum Criteria for Testing Call Handling Proficiency**

### **4.2.1 Recognition of TTY Calls**

When the DOJ published its Technical Assistance document in 1998, it stated "To test whether call takers have been trained adequately to recognize TTY calls, a PSAP shall conduct two types of test calls--silent, open line calls in which no tones are emitted and calls in which the caller introduces the call by transmitting TTY tones. Tests shall be unannounced (DOJ, page 10)." NENA recommends that PSAPs test the following types of possible TTY Calls:

#### **4.2.2 Silent Calls**

When a TTY caller dials 911, they will generally wait for their call to be answered with a TTY before typing, therefore, the line will be silent. Call takers shall be trained and operational procedures shall require them to query all silent calls with a TTY to see if the caller is using a TTY if initial verbal attempts to communicate with the caller are not successful. After several attempts with a TTY, if call takers are unable to engage the caller on silent calls, they shall follow their PSAP's silent call procedures for the most appropriate response.

##### **4.2.2.1 Open-Line Calls**

Some consider silent calls and open-line calls as the same. There is one significant difference posed by public pay phones equipped with TTYs. When a caller is using a pay phone TTY to access 911, the call may be received as an open-line call and the call taker able to hear background noise. Some pay phone TTYs remain closed and locked to the caller until the call taker recognizes the calls as a possible TTY call and emits tones via the 911 center's TTY equipment. Once the pay phone TTY

receives the tones, the TTY drawer will open and be available for the caller's use. Other pay phones may have vandal-resistant TTYs that are bolted to shelves. These, too, may appear as a silent call to the call taker. Therefore, call takers shall be trained and operational procedures shall require them to query all open-line calls using a TTY if initial verbal attempts to communicate with the caller are not successful.

#### **4.2.2.2 Emitted Tones**

Many 911 personnel believe that all TTY calls will be identified by the sound of tones. This is NOT always the fact. Tones are created when TTY callers type on their TTY. Typically, TTY callers will wait for their call to be answered with a TTY greeting before typing to the person they have called. DOJ regulations prohibit 911 centers from requiring TTY callers to generate tones so that their call may be recognized. However, through public education efforts, 911 centers can ask TTY users to generate tones, but it is important to remember that during emergencies, TTY users will likely revert to their normal TTY procedures. Therefore, call takers shall be trained to not depend on the presence of tones to identify all TTY calls.

#### **4.2.2.3 Detected Calls**

Many PSAPs are equipped with TTY/TDD detection equipment. This equipment is designed to monitor incoming telephone lines and to notify call takers through a variety of methods that a TTY call is on the line when it detects tones. The problem is that this detection equipment requires that the TTY caller be generating tones for the detection equipment to work. It will not detect silent or open-line calls. Call takers shall be trained and tested on any detection equipment installed in the 911 center including the procedures for recognizing the detected call and how to engage the caller.

#### **4.2.2.4 Announced Calls**

Some detection equipment has verbal announcements that notify call takers that a TTY call has been received depending on the equipment and its configuration. Also, some consumer TTY models have a built-in function that allows the caller to emit an announcement to the call taker that the caller is using a TTY. This announcement will continue until the call taker answers the call using a TTY. Call takers must be trained to recognize announced TTY calls and tested on the procedures for properly handling these calls.

### **4.2.3 Appropriate initiation of TTY Equipment**

There are two types of systems currently in operation at PSAPs for communicating TTY/TDD. The systems are:

#### **4.2.3.1 Direct Connect Mode or Integrated**

A Direct Connect system utilizes a TTY/TDD device directly connected to a phone line or one that is integrated into a computer based system. In Direct Connect Mode, the call taker shall respond by powering up (turning on) the TTY/TDD device and send a pre-programmed or typed message (Example: 9-1-1 where is your emergency q ga). In the case of an Integrated System, the call taker shall open the TTY/TDD screen (if the call has not been automatically detected) and send a pre-programmed or typed message.

#### **4.2.3.2 Acoustic Coupler Mode**

In the Acoustic Coupler Mode a call-taker must place the telephone handset into the Acoustic Coupler (rubber cups), which is located on top of the TTY/TDD device. In addition, the call taker must make sure that the handset is positioned correctly (Usually with the cord to the left of the TTY/TDD device). The call taker shall then make sure the device is powered on and send a pre-programmed or typed message.

#### **4.2.4 Proper recognition of language (English v. ASL)**

People who use TTY's to communicate will usually communicate in one of two different language formats. For this reason, it is important that call takers are trained to recognize which language format the TTY caller is using and respond in the same format for effective communications with the TTY callers. Call takers shall be tested in both formats also.

Some TTY callers will type in an English format, which should be easily understood, while others will type in ASL Gloss. ASL Gloss (a.k.a. TTY Gloss or Gloss) is a method used to communicate through typing, as on a TTY, which uses English words to translate ASL concepts.

Since there is no written form of ASL, this method results in the loss of the visual elements of ASL, which are crucial to clear communications. When call takers are communicating with someone using a TTY, the call taker must determine which communications format the caller is using and translate not only what the caller types to the call taker, but also what the call taker types to them, in the same format.

##### **4.2.4.1 Standard Simplified English**

TTY users who become deaf, hard of hearing, or develop speech disabilities after developing their language skills will generally type using a typical English format. These users will type in a way that should be easy for a call taker to understand and they will use TTY protocol. Some of these callers will use abbreviations as a way to speed up the typed conversation. If a call taker determines that the caller is using an English format, the call taker shall follow their lead as to whether to use abbreviations or not, but shall remember to use proper TTY protocol.

The following are sample English format messages using proper protocol (ref. section 4.2.5):

what is your address q ga  
what is your phone number q ga  
what is ur ph nbr q ga  
what is the problem q ga  
what is prob q ga  
how long ago did this happen q ga  
is anyone hurt q ga  
how old is person q ga  
is the house on fire q ga  
does he have a weapon q ga

#### 4.2.4.2 American Sign Language

Because ASL is a visual language, and there is no written format, call takers may encounter barriers when trying to communicate via a TTY. Therefore, it is critical that call takers become familiar with ASL in order to more efficiently process emergency calls. ASL is structured so that the main thought is signed or typed first with descriptive words after it. It does not include verb tenses, articles or connecting words. It is important that call takers avoid using complex public safety terminology when communicating in ASL. For example, call takers should avoid words like conscious, unconscious, patient, victim, en route, etc. They should keep their terminology simple and in laymen's terms. For example call takers should use "awake", "no awake", "person" or "person hurt", and "on the way". Once the call taker determines that the caller is typing in ASL Gloss, if the call taker pays close attention to what is typed, it will be fairly easy for them to understand what the caller is typing.

Remember, *in ASL, the sender will indicate a time reference first (if necessary), the main thought, descriptive words, then verbs with no verb tense and no connecting words such as "a, the, and, etc."* However, it is very important that call takers be able to put their thoughts, questions or directions into ASL format so that the TTY caller can understand what the call taker is typing to them. Also, ASL users will sometimes use common abbreviations to speed up the communications process.

The following are sample ASL format messages using proper protocol (ref. section 4.2.5):

live you where q ga  
emergency where q ga  
ph nbr what q ga  
problem what q ga  
need police fire medical which q ga  
problem how long q ga  
hurt where q ga  
age person q ga  
house fire q ga  
gun knife use what q ga  
house out now sksk

#### 4.2.5 Proper Protocol

Proper TTY protocol is critical to effective communications with persons who use TTYs to communicate. Call takers shall be trained to use proper protocol, agency policies shall mandate the use of proper protocols and call taker proficiency testing shall document whether the call taker demonstrated the proper use of TTY protocol.

Proper TTY protocol includes the following:

##### ***Go Ahead (GA)***

The term GA is used to indicate that one person is through with their comments/questions and is waiting on a response from the other person. The term **GA** means “go ahead, it’s your turn to talk.”

##### ***Question (Q or QQ)***

Tone of voice is not transmitted on a TTY, so it is necessary to type the letters **QQ** or **Q** when asking a question. **GA** is also added to solicit a response from the other person to questions.

##### ***Go Ahead Stop Keying (GA SK)***

When getting ready to end the conversation, the appropriate protocol to use is to type GA SK, which literally means “go ahead and stop keying” which indicates that the person is ready to end the conversation. This is sometimes presented as GA to SK.

##### ***Stop Keying Stop Keying (SKSK)***

**SKSK** literally means “stop keying, stop keying” but is used to indicate, “bye, I am hanging up now.” This term officially ends a TTY conversation. Generally, a call taker will allow the TTY caller to conclude the conversation first. However, in extreme emergencies, a call taker may want to use SKSK for emphasis. If this is the case, the call taker shall NOT disconnect the TTY or turn it off but rather leave the line open in case the caller has something else to add. An example of a call taker using SKSK first would be after getting **all pertinent information** such as location from a caller who is reporting their house is on fire from within the structure. In order to stress the importance of the TTY user getting out of the house the call taker may elect to use SKSK first.

### ***Error Message (XXXXX)***

Spelling errors are common in TTY conversations. Instead of wasting time hitting the backspace key to correct the mistake, several X's are used to indicate an error and then the word or phrase is typed correctly. If the error is not critical there is no need to waste time trying to correct it.

#### **4.2.6 Proper Etiquette**

After determining that the caller is using the TTY the call taker must know when to type. Communication between two people using standard TTY can only occur in one direction at a time and they must take turns sending and receiving.

- If a message is garbled, call takers may interrupt with a message explaining. EX: ***stop ur msg garbled pls repeat ga.***
- To avoid confusion, call takers shall keep sentences, questions, or instructions short and to the point.
- Questions or ideas shall be presented one at a time, especially during emergency situations. The “**q**” and “**ga**” after each question or “**ga**” after each instruction or statement.
- English grammatical punctuation is not used.

Call takers shall allow the caller the opportunity to close or add more conversation when they have finished by “**ga to sk**”. If they have nothing further they will in turn type “**sksk**”.

#### **4.2.7 Proper Dialogue**

- ASL (American Sign Language) is the first language of many hearing impaired persons with English considered a second language. The grammar and syntax of ASL is very different from English.
- English grammatical punctuation is not used.
- Emotions must be keyed in to be understood. Smile, sad, giggle etc. EX: ***u have nice day smile GA to SK.***
- Abbreviations are used frequently. The following are helpful suggestions.

ASAP - as soon as possible

CD or CLD - could

GA - go ahead, your time to talk

HCO (hearing carry over) -TTY user will use his/her hearing during the call

HD or HLD - hold, please

MSG - message

NBR or NU - Number

PLS - please

Q or QQ - question mark

R - are

SHD - should

SKSK - stop keying, means to end conversation

TMW - tomorrow

TTY - teletypewriter

U - You

UR - your

VCO (voice carry over) - TTY user will use his/her voice during the call.

#### **4.2.8 Pre-Programmed Messages**

PSAPs must ensure that Pre-Programmed messages are formatted in Compliance with TTY Protocols, per *NENA-04-001 Issue 2, Section 5.18.1 – Pre-Programmed Messages and Section 13.4.1 – Appendix D – TTY/TDD Pre-Programmed Messages*.

If the PSAP utilizes (ACD) Automatic Call Distribution which places the caller in queue and sends a programmed message to let the caller know their call has been received, then distributes the call to the next available call taker, this message must also be accessible for TTY calls, with a programmed TTY message.

Pre-programmed messages allow the call taker to ask standard questions quickly to determine the initial need/response necessary to assist the TTY caller without utilizing the keyboard.

#### **4.2.9 Typed Messages**

Typed messages are TTY messages that are keyed by the call taker rather than relying on the pre-programmed messages. Call takers must be trained in how to type agency identification, key questions and pertinent instructions relevant to call-type in both English and ASL Gloss format in accordance with the procedures that would be used for non-TTY calls in the same type of emergency situation.

### **5 Equipment Functionality and Trouble Shooting**

Agencies are required to maintain accessibility to TTY/TDD in working condition. In addition, if a PSAP has back-up equipment or a secondary back-up location, these must also be outfitted with working TTY/TDD equipment.

As stated in the DOJ Technical Assistance document “TTY equipment must be maintained and tested at least as often as voice telephone equipment, to ensure that the equipment is operating properly. If PSAPs check their voice telephone equipment every day to make sure it is working, they must do so every day for TTY equipment. Similarly, if PSAPs have contracts with outside companies for maintenance of their voice telephone equipment, they must employ equally effective methods for TTY equipment” (DOJ – Page 6).

In addition the DOJ goes on to state, “Most PSAPs have plans for using back-up equipment in case some of its equipment or telephone lines malfunction, or in case there is a power failure. If a PSAP has such a plan for voice calls and equipment, it must provide for TTY calls and equipment in that plan. For instance, PSAPs shall keep extra TTY equipment on hand, in case the primary equipment fails, if they have back-up voice telephone equipment for such a situation” (DOJ - Page 6).

## **5.1 Call Transfer Procedures**

Title II of the Americans with Disabilities Act applies to telephone emergency services, including 9-1-1 (or 7-digit numbers) and requires "direct, equal access". In all instances where a caller is transferred to another number, the same must be done for persons with disabilities.

No call-taker shall transfer a TTY/TDD call without first advising the calling party that the call is being transferred and that the caller shall remain on the line until the call is connected. Additionally, the call-taker shall verbally announce the call as a “TTY Call” to the agency that the call is being transferred to. The originating call-taker shall remain on the line until there is evidence the TTY call has been answered and communications are underway.

When transferring a TTY/TDD call to another PSAP, or other emergency service, care must be taken to ensure the answering agency is capable of receiving the call. It may be necessary to provide 3<sup>rd</sup> party intervention, such as 3-way calling, so the call is not dropped.

If the other PSAP, or emergency service, is temporarily unable to provide TTY/TDD access, it is incumbent upon the primary PSAP to handle the call and relay the information received from the caller. As such, when a PSAP, or emergency service, is unable to provide TTY/TDD accessibility on a temporary basis, they are obligated to make notifications to the other PSAPs, or emergency services agencies, and advise them of the situation and then again when they are once again prepared to accept calls.

Transfer functionality and call taker knowledge of transfer procedures must be tested as part of the Quality Assurance Program.

## **5.2 Call Initiation (call-back)**

When a PSAP, or emergency services agency, must initiate a TTY/TDD call, the following guiding principles must be kept in mind:

- 1) The new FCC efforts to improve the Emergency Alert System (EAS) accessibility; and
- 2) The DOJ, Title II requirements to provide direct, equal access to services, including emergency notifications to citizens.

Many of the methods used in making notifications are not useable or accessible by persons with disabilities. When planning notification processes, agencies shall consider a variety of methods,

including a combination of audible and visual alerting, auto-dial TTY messages, emails, text messaging, or even door-to-door contact.

The same Title II of the Americans with Disabilities Act requirements that apply to telephone emergency services for call-answering also apply to initiation of a call. If, for example, your agency requires call-backs for 9-1-1 disconnects, or to recall a citizen to advise of delays or other information they need regarding a call for service, the same requirements must apply to citizens with disabilities under the concept of "direct and equal access".

When initiating a TTY/TDD call, the call taker shall be evaluated on the use the standard approved protocols as required by the Department of Justice and the recommended standards for call-processing within their agency.

### **5.3 Voice Carry Over (VCO)**

As part of the Quality Assurance Program, call takers shall be tested on handling VCO calls. Some callers to an emergency communications center may request to use VCO. Voice Carry Over (VCO) is a communication hybrid of TTY conversation, which involves both text and voice. VCO allows a person with hearing loss to speak directly to the call taker and read the response that is typed back. Many persons who became deaf or hard of hearing later in life prefer to speak instead of type. They use voice carry over (VCO) by speaking directly into the phone and then the call taker would type back via TTY to the caller. VCO can be accomplished with standard stand-alone TTY equipment simply by having the call taker alternate between listening on the handset when the caller is speaking, and placing the handset in the TTY acoustic coupler to type a response. If the PSAP is equipped with integrated TTY's, call takers need to be trained and tested on procedures to accommodate requests for Voice Carry Over.

Call takers must also be familiar with a service and product provided for people with some degree of hearing loss, but can hear conversation from the called party. Known as CapTel, users can listen to the caller, and can also read the written captions in the **CapTel's** bright display window at the same time. When dialing 911, this phone reverts to a standard VCO phone. Call takers will handle this call just as any other VCO call.

### **5.4 Hearing Carry Over (HCO)**

Call takers may receive a TTY caller who requests Hearing Carry Over (HCO). People with speech impairments who are not deaf or hard of hearing often prefer HCO, which allows them to type their words on a TTY to the call taker and hear the call taker's spoken responses. HCO can be accomplished using standard stand-alone TTY equipment by alternating speaking into the handset and placing the handset in the TTY acoustic coupler when the caller types a response. If the PSAP is equipped with integrated TTY's the call takers need to be trained and tested on the procedures to accommodate requests for Hearing Carry Over.

## **5.5 Telecommunication Relay Services (TRS)**

Another variation to a TTY call is one that is received into the communications center from a Telecommunications Relay Service. Telecommunications Relay Services (TRS) enable standard voice telephone users to talk to people who have difficulty hearing or speaking on the telephone. Under Title IV of the Americans with Disabilities Act, all telephone companies must provide free relay services either directly or through state programs throughout the 50 states, the District of Columbia, Puerto Rico, and all of the U.S. territories. Businesses, government agencies, family, friends, and employers of persons with hearing and speech disabilities make and receive relay calls everyday.

Federal Communications Commission (FCC) rules require telephone companies to provide relay services nationwide on a 24 hour-a-day, 7 day a week basis, at no extra cost to callers. Conversations are relayed in real-time and Communication Assistants (CA) are not permitted to disclose the content of any conversation. Relay callers are not limited in the type, length, or nature of their calls. There are several types of TRS' available. Any of these may be initiated by an individual with a hearing or speech disability, or by a conventional telephone user.

In addition to training personnel in how to recognize and handle TTY calls, PSAP personnel shall also be trained on how to accept and handle calls from the hearing impaired that are received from a third-party service called Telephone Relay Services (TRS).

A telecommunications relay service (TRS) allows people who are deaf, hard of hearing, or speech impaired to communicate through a CA with people who use a standard telephone. A CA relays the TTY (text telephone or telecommunications device for deaf and hard of hearing people) input to the PSAP call taker and types the call taker's response back to the TTY user.

Communicating with TRS calls shall be handled as a first party call. There is a tendency to handle TRS callers as a third party call since the PSAP has two individuals on the telephone, the CA and the TTY user. The call taker shall speak to the calling party in 'first party' language.

Although TRS calls may not be handled directly through 9-1-1, quality assurance measures shall include TRS calls to ensure that those TRS calls that are categorized as an emergency are handled efficiently as a 9-1-1 call. Quality assurance measurements shall include an evaluation of first party vs. third party call handling.

## **5.6 Future Technology Impact on TTY Call Handling**

Communication center personnel should be aware that the trend is showing a growing number of citizens leaving the old TTY/TDD technology for other methods of communication such as 2-ways pagers, instant messaging, email, and video relay. Call takers must be aware of the potential impact this will have on communication centers, and be prepared to address call-taking proficiencies and quality assurance in the coming years.

## 6 Frequency of Testing

According to the DOJ, a PSAP's testing program should cover each call taker and each position (DOJ, page 10). To further clarify the frequency of testing, NENA recommends the follow test schedules:

### 6.1 Equipment Testing

The NENA's Manager's Guide to the ADA Title II: Direct Access (52-002) stipulates that an agency must establish a testing program that ensures TTY functionality. Further, it requires testing be conducted once-per-shift-per-day (at a minimum) and includes documentation. All PSAP personnel shall be made aware of this requirement to schedule and conduct daily tests. While it is recognized that a PSAP may need to suspend scheduled testing due to call volume, testing shall take place as soon as operationally possible. NENA has established the TTY Performance Assessment and Scoring System (TTY-PASS) for agencies interested in this method of testing.

### 6.2 Call Taker Proficiency Testing

The NENA's Manager's Guide to the ADA Title II: Direct Access (52-002) indicates that practical instruction and testing shall be scenario-based and documented as part of the quality assurance process (NENA, page 11). For this purpose, communications personnel, including call takers, shall be tested randomly and often, at a minimum of at least once every six months as part of the Quality Assurance Program.

## 7 Documentation Required

The Department of Justice and the NENA standards require that documentation be kept on all test calls from both an equipment and call taker proficiency standpoint and of training all training provided to call takers.

### 7.1 Equipment Testing

The daily once per shift equipment testing, described in the NENA Manager's Guide to ADA Title II: Direct Access (52-002), shall be documented for every position within the PSAP for every shift. **See Appendix A** for a sample of the document that can be used as a TTY Equipment Test Log for each Shift. TTY Equipment functionality shall be tested for both incoming and outgoing calls and problems shall be documented and reported to PSAP supervisor. Policies and procedures must be enacted by the PSAP to address how TTY equipment problems are resolved and how direct and equal access requirements will be maintained while equipment problems are addressed.

## 7.2 Call Taker Proficiency Testing

According to the DOJ, PSAPs should keep records of the results of all test calls, including, at a minimum:

- the date and time of each test call;
- identification of the call taker and call-taking position;
- whether each call was silent or transmitted tones;
- whether the caller received a TTY response and the content of the TTY response;
- the time elapsed and number of rings from the initiation of the TTY call until the call taker responded by TTY; and
- whether the call was processed according to the PSAPs standard operating procedures.

To assist with this documentation, Appendix B contains a sample TTY Test Call Documentation Log for use by PSAPs.

## 8 Problem Identification and Resolution

Problems noted during test calls, including equipment malfunctions, operational procedures problems, call taker operational and/or training deficiencies must be documented in detail providing specific information related to the nature of the problems and possible reasons.

Immediate action must be taken and documented to address problems or deficiencies as noted. PSAP's must ensure continuous direct and equal access by maintaining TTY equipment in working condition and maintaining TTY call handling proficiency among all of its call takers through training and remediation efforts.

## 9 References

Legal citation: 28 *CFR* 35 (2004).

National Emergency Number Association. *Manager's Guide to Direct Access: Title II*. NENA 52-002, 2005.

National Emergency Number Association. *TTY Training Standard*. NENA 52-001, 2005.

"The Americans with Disabilities Act 1990." (P.L. 101-336), *United States Code*. (42 U.S.C. 12131).

U.S. Department of Justice. Office of Civil Rights. *Americans with Disabilities Act: Access to 9-1-1 and Emergency Telephone Services*. Washington: Government Printing Office, 1998.





### **10.3 Exhibit C – TTY Testing Evaluation Guidelines**

## **TTY Testing Evaluation Guidelines Rating Criteria**

### **Identification as a TTY Call & Initial Response**

1. Did not recognize as TTY call and disconnected without further investigation.
2. Did not recognize as TTY call immediately and was delayed in providing initial response (greeting).
3. Recognized as TTY call, slow to respond with greeting or typed incomplete greeting.
4. Recognized as TTY call after several (2-3) verbal attempts and responded with correct greeting.
5. Immediately recognized as possible TTY call after several (2-3) verbal attempts, responded with a greeting which included agency name and a question or directed instruction for the TTY caller (example: Duvall 911 type your address GA or Duvall 911 live you where QQGA).

### **Caller Interrogation (Pertinent Questions Asked)**

1. Did not ask pertinent questions.
2. Did not ask pertinent questions in a timely manner or in order of importance.
3. Asked some pertinent questions but did not ask enough questions relative to call type.
4. Asked all pertinent questions necessary in order of importance.
5. Asked all pertinent questions necessary in order of importance and directed caller of actions to take or actions not to take while waiting on responding units. Reassured caller that help was being sent.

### **Use of Protocol (GA Q QQ GASK SKSK)**

1. Did not use proper protocol.
2. Used some protocol but did not use it appropriately.

3. Used protocol on most occasions with more than two uncorrected mistakes.
4. Used proper protocol with less than two uncorrected mistakes.
5. Used proper protocol with no uncorrected mistakes.

**Identification and Use of Proper Syntax (ASL or English)**

1. Did not identify or use the proper syntax for this call as established by the scenario.
2. Identified proper syntax but did not communicate using appropriate format.
3. Identified proper syntax but was delayed in response while converting to correct syntax or reverted to other syntax (more than two uncorrected mistakes)
4. Used proper syntax and format with little delay without reverting to the other syntax more than twice.
5. Used proper syntax and format with no delay and no uncorrected mistakes.

See the following sample **TTY Testing Evaluation Checklist**:

## TTY Testing Evaluation Checklist

<b>Student Name</b>	<b>Scenario #</b>	<b>Type of Call</b> <input type="checkbox"/> TTY <input type="checkbox"/> VCO <input type="checkbox"/> HCO <input type="checkbox"/> Other _____	<b>Identification Method</b> <input type="checkbox"/> Silent <input type="checkbox"/> Open line <input type="checkbox"/> Tones <input type="checkbox"/> Announcer	<b>Scenario Format</b> <input type="checkbox"/> ASL <input type="checkbox"/> English
Evaluator Name		Date		

Rating Scale		
1    2    3 Below Standard Needs Improvement	4 Meets Minimum Acceptable Standard	5 Exceeds Minimum Standard

Evaluation Components	Rating
Identification as a TTY Call	
Initial Response to the Call	
Caller Interrogation (Pertinent Questions)	
Use of Protocol	
Identification and Use of Proper Syntax (ASL or English)	
Total Points (20/25)	
Evaluator Comments on Deficiencies/Problems	
Call Taker Signature	Evaluator Signature

### 10.4 Exhibit D - Practice Scenarios 1-6

## TTY Practice Scenario

Practice Scenario # 1		ASL Format
<b>Initial Complaint:</b>	<b>HLP PLS NEED MEDICL VAN 5423 WILLOW WALK NEXT KENNEDY DR</b>	
<b>Translation:</b>	<b>Please send an ambulance to 5423 Willow Walk (near Kennedy Drive).</b>	
<b>Problem:</b>	<b>MARY AWAKE NO RIDE BIKE THEN FALL TRUE HURT HURRY PLS</b>	
<b>Translation:</b>	<b>Your child has fallen and is not conscious. She fell off her bicycle.</b>	
<b>Additional Information</b>		
<b>Complainant Name:</b>	<b>Ellen St. Michaels</b>	
<b>Phone Number:</b>	<b>383-4226</b>	
<b>Child's Age:</b>	<b>Eight (8)</b>	

## TTY Practice Scenario

Practice Scenario # 2		English Format
<b>Initial Complaint:</b>	<b>Please send police to 1137 Fall Court (near Loren Road).</b>	
<b>Problem:</b>	<b>You came home to find that your back door was standing open into the kitchen. You are in the kitchen but are scared to stay in the house.</b>	
<b>Additional Information</b>		
<b>Complainant Name:</b>	<b>Bill Andrews</b>	
<b>Phone Number:</b>	<b>952-1826</b>	
<b>Other:</b>	<b>No one else should be home at this time.</b>	

## TTY Practice Scenario

Practice Scenario # 3		English Format
<b>Initial Complaint:</b>	<b>I think someone is trying to break into my house.</b>	
<b>Problem:</b>	<b>You are home alone and you saw someone look through the window. Now they are trying to get in through the back door.</b>  <b>The only description is white male with blue cap and white shirt. (Give only if asked)</b>	
<i>Additional Information</i>		
<b>Complainant Name:</b>	<b>Peggy Whitehall</b>	
<b>Phone Number:</b>	<b>374-4646</b>	
<b>Address:</b>	<b>4979 Jefferson Street (near Apple Way)</b>	

## TTY Practice Scenario

Practice Scenario # 4		ASL Format
<b>Initial Complaint:</b>	<b>HELP PLS THERE IS FRE ON HOUSE</b>	
<b>Translation:</b>	<b>Help please, my house is on fire.</b>	
<b>Problem:</b>	<b>SONS ASLEEP WOKE UP SEE KITCHEN HAS FIRE</b>  <b>You woke up to find your kitchen on fire. You are home with your two children (ages 3 and 6).</b>	
<i>Additional Information</i>		
<b>Complainant Name:</b>	<b>Lewis English</b>	
<b>Phone Number:</b>	<b>653-1246</b>	
<b>Address:</b>	<b>959 Wood Street (near Memorial Street)</b>	

## TTY Practice Scenario

Practice Scenario # 5		English Format
<b>Initial Complaint:</b>	<b>Help please, my husband is having trouble breathing. I think he needs an ambulance.</b>	
<b>Problem:</b>	<b>You were about to go to bed when your husband started experiencing shortness of breath and it has now gotten worse.</b> <b>He has no history of similar medical problems.</b>	
Additional Information		
<b>Complainant Name:</b>	<b>Diane Kingston</b>	
<b>Phone Number:</b>	<b>498-5156</b>	
<b>Address:</b>	<b>3582 Cherry Street (near Bush Drive).</b>	
<b>Patient Age:</b>	<b>58 years of age</b>	

## TTY Practice Scenario

Practice Scenario # 6		ASL Format
<b>Initial Complaint:</b>	<b>DAUGHTER FALL SWING HEAD HIT BLOOD BLOOD NEED DOC</b>	
<b>Translation:</b>	Help please, my daughter was playing on the swing set. She fell and is bleeding from the head. I think he/she needs an ambulance.	
<b>Problem:</b>	<b>CAR NONE BUT DAUGHTER HAS LOW BLOOD</b>	
<b>Translation:</b>	I do not have a car. My daughter is anemic.	
Additional Information		
<b>Complainant Name:</b>	Debbie Chambers	
<b>Phone Number:</b>	483-5326	
<b>Address:</b>	711 11th Street (near Dollison Street)	
<b>Patient Age:</b>	5 yoa	
<b>Other:</b>	You are deaf. Your daughter is not deaf.	

10.5 Exhibit E - Test Scenarios 1-6

**TTY Testing Scenario**

Test Scenario # 1		ASL Format
<b>Initial Complaint:</b>	<b>AMBO NEED 958 SUNSET DRIVE AND NORMAL AVE ST HURRY</b>	
<b>Translation:</b>	<b>Please send an ambulance to 958 Sunset Drive (near Normal Avenue).</b>	
<b>Problem:</b>	<b>BRIAN DRINK BLEACH HOW MUCH NOT KNOW</b>	
<b>Translation:</b>	<b>Your child has swallowed bleach. You don't know how much.</b>	
<b>Additional Information</b>		
<b>Complainant Name:</b>	<b>Steve Hancock</b>	
<b>Phone Number:</b>	<b>383-8966</b>	
<b>Address:</b>	<b>958 SUNSET DRIVE</b>	
<b>Patient Age:</b>	<b>8 yoa</b>	
<b>Other:</b>	<b>You are the only other person there. You use sign language and cannot speak.</b>	

## TTY Testing Scenario

Test Scenario # 2		English Format
<b>Initial Complaint:</b>	<b>Please send police to 1001 Quince Drive (near Holden Road). You need help.</b>	
<b>Problem:</b>	<b>You came home to find that your son unconscious. There is a pill bottle next to him that is empty but you are not sure what or how much was in it. You cannot wake him up.</b>	
<b>Additional Information</b>		
<b>Complainant Name:</b>	<b>Betsy Anderson</b>	
<b>Phone Number:</b>	<b>952-9376</b>	
<b>Address:</b>	<b>1001 Quince Drive</b>	
<b>Patient Age:</b>	<b>15 yoa</b>	
<b>Other:</b>	<b>No one else is home at this time.</b> <b>You are hard of hearing but can read lips. You prefer written communications.</b>	



## TTY Testing Scenario

Test Scenario # 4		ASL Format
<b>Initial Complaint:</b>	<b>HELP APARTMENT HAS FIRE DOOR HOT AND SMOKE STUCK APT C FLOOR 3</b>	
<b>Translation:</b>	Help please, my apartment is on fire.	
<b>Problem:</b>	<b>WAKE UP SEE SMOKE HERE SCARED FOR GET OUT HAVE BABY</b>	
	You woke up to the smell of smoke. You live on the third floor of the Windscape Apartments. It is very smoky and you are afraid to leave the apartment. You and your young daughter who is there with you are both deaf.	
Additional Information		
<b>Complainant Name:</b>	Terry Dargle	
<b>Phone Number:</b>	955-3306	
<b>Address:</b>	725 Annsion Road, Apt 3-C	

## TTY Testing Scenario

Test Scenario # 5		English Format
<b>Initial Complaint:</b>	<b>Help please, my wife is having trouble breathing. I think she needs an ambulance.</b>	
<b>Problem:</b>	<b>After dinner your wife began to feel weak so she was resting on the sofa. Now she is feeling worse and is having some difficulty in breathing. She has a previous history of heart problems and has a pacemaker.</b>	
<i>Additional Information</i>		
<b>Complainant Name:</b>	<b>Ray Busbee</b>	
<b>Phone Number:</b>	<b>298-2276</b>	
<b>Address:</b>	<b>821 13th Street (near Bush Drive)</b>	
<b>Patient Age:</b>	<b>58 yoa</b>	
<b>Other:</b>	<b>You are speech impaired due to throat cancer. Your spouse is not deaf and not speech impaired but is unable to communicate very well due to the medical condition.</b>	

## TTY Testing Scenario

Test Scenario # 6		ASL Format
<b>Initial Complaint:</b>	<b>AMBO NEED FAST</b>	
<b>Translation:</b>	<b>You need an ambulance now!!</b>	
<b>Problem:</b>	<b>DAUGHTER CHOKE NO AIR FACE BLUE PLS SEND HELP</b>	
<b>Translation:</b>	<b>Your daughter was eating dinner and began to choke. She is still choking and is not able to cough. She is turning blue. Please send an ambulance.</b>	
<b>Additional Information</b>		
<b>Complainant Name:</b>	<b>Jean Carson</b>	
<b>Phone Number:</b>	<b>755-3826</b>	
<b>Address:</b>	<b>886 Alma Lane.</b>	
<b>Patient's Age:</b>	<b>5 yoa</b>	
<b>Other:</b>	<b>You are deaf but your daughter is not deaf.</b>	
<b> </b>	<b> </b>	
<b> </b>	<b> </b>	
<b> </b>	<b> </b>	