APCO/NENA ANS 3.105.2-20XX
Minimum Training Standard for TTY/TDD in Use in the Public Safety Communications Center
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREWORD</td>
<td>3</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>7</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>8</td>
</tr>
<tr>
<td>SCOPE</td>
<td></td>
</tr>
<tr>
<td>AGENCY RESPONSIBILITIES</td>
<td></td>
</tr>
<tr>
<td>ORGANIZATIONAL INTEGRITY</td>
<td></td>
</tr>
<tr>
<td>CALL TAKING KPI</td>
<td></td>
</tr>
<tr>
<td>TOOLS, EQUIPMENT AND TECHNOLOGY</td>
<td></td>
</tr>
<tr>
<td>PROFESSIONAL COMPETENCE</td>
<td></td>
</tr>
<tr>
<td>TELECOMMUNICATOR</td>
<td></td>
</tr>
<tr>
<td>SCOPE</td>
<td></td>
</tr>
<tr>
<td>VALIDATION AND SECURITY</td>
<td></td>
</tr>
<tr>
<td>INCOMING CALL VALIDATION</td>
<td></td>
</tr>
<tr>
<td>SPAM</td>
<td></td>
</tr>
<tr>
<td>ACRONYMS AND ABBREVIATIONS</td>
<td>17</td>
</tr>
<tr>
<td>GLOSSARY</td>
<td>26</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>26</td>
</tr>
<tr>
<td>NOTES</td>
<td>34</td>
</tr>
</tbody>
</table>

Copyright ©2018 APCO International | All Rights Reserved
FOREWORD

APCO International is the world’s largest organization of public safety communications professionals. It serves the needs of public safety communications practitioners worldwide - and the welfare of the general public as a whole - by providing complete expertise, professional development, technical assistance, advocacy and outreach.

The 2019 - 2020 APCO International Board of Directors:

Tracey Hilburn, President
Margie Moulin, First Vice President
Jason Kern, RPL, CPE, Second Vice President
Holly E. Wayt, Immediate Past President
Derek K. Poarch, Ex-Officio

APCO International standards are developed by APCO committees, projects, task forces, work-groups, and collaborative efforts with other organizations coordinated through the APCO International Standards Development Committee (SDC). Members of the committees are not necessarily members of APCO. Members of the SDC are not required to be APCO members. All members of APCO’s committees, projects, and task forces are subject matter experts who volunteer and are not compensated by APCO. APCO standards activities are supported by the Communications Center & 9-1-1 Services Department of APCO International.

For more information regarding APCO International and APCO standards please visit:

www.apcointl.org
www.apcostandards.org
This standard was written by The APCO International Workgroup with assistance of the APCO Communications Center Standards Committee and approved by the APCO Standards Development Committee on February 17, 2015. Final approval of this document as an American National Standard was received from ANSI on February 24, 2015.

Abstract: This standard addresses the minimum training requirements, in general, necessary to foster levels of consistency for all personnel in an emergency communications environment assigned to answering TTY/TDD calls for service specifically in the Public Safety environment. This standard responds to the valid needs of the rapidly expanding and ever-changing industry, providing competent training standards while defining training in certain knowledge, skills, and abilities, and recognizing the need to supplement basic competencies with agency-specific information and existing equipment-use parameters.

Keywords: ADA, Title II, Americans with Disabilities, hearing impaired, speech impaired, deaf, blind, disability, relay service, interpreter, training, telecommunicator, dispatcher, communications officer, call-taker, communications operator, public safety communications, training, 9-1-1, and emergency services.

APCO American National Standards (ANS) are voluntary consensus standards. Use of any APCO standard is voluntary. All standards are subject to change. APCO ANS are required to be reviewed no later than every five years. The designation of an APCO standard should be reviewed to ensure you have the latest edition of an APCO standard, for example:

APCO ANS 3.101.1-2007 = 1- Operations, 2- Technical, 3- Training
APCO ANS 3.101.1-2007 = Unique number identifying the standard
APCO ANS 3.101.1-2007 = The edition of the standard, which will increase after each revision
APCO ANS 3.101.1-2007 = The year the standard was approved and published, which may change after each revision.

The latest edition of an APCO standard cancels and replaces older versions of the APCO standard. Comments regarding APCO standards are accepted any time and can be submitted to standards@apcointl.org, if the comment includes a recommended change, it is requested to accompany the change with supporting material. If you have a question regarding any portion of the standard, including interpretation, APCO will respond to your request following its policies and procedures. ANSI does not interpret APCO standards; they will forward the request to APCO.

APCO International adheres to ANSI's Patent Policy. Neither APCO nor ANSI is responsible for identifying patents for which a license may be required by an American National Standard or for conducting inquiries into the legal validity or scope of any patents brought to their attention.
No position is taken with respect to the existence or validity of any patent rights within this standard.

APCO is the sole entity that may authorize the use of trademarks, certification marks, or other designations to indicate compliance with this standard.

Permission must be obtained to reproduce any portion of this standard and can be obtained by contacting APCO International's Communications Center & 9-1-1 Services Department. Requests for information, interpretations, and/or comments on any APCO standards should be submitted in writing addressed to:

**APCO Standards Program Manager, Communications Center & 9-1-1 Services**

APCO International
351 N. Williamson Blvd
Daytona Beach, FL 32114 USA
standards@apcointl.org
NENA serves the public safety community as the only professional organization solely focused on 9-1-1 policy, technology, operations, and education issues. With more than 7,000 members in 48 chapters across North America and around the globe, NENA promotes the implementation and awareness of 9-1-1 and international three-digit emergency communications systems.

NENA works with public policy leaders; emergency services and telecommunications industry partners; like-minded public safety associations; and other stakeholder groups to develop and carry out critical programs and initiatives; to facilitate the creation of an IP-based Next Generation 9-1-1 system; and to establish industry leading standards, training, and certifications.

NENA Executive Board

Barbara Jaeger, ENP, President
Bernard "Buster" Brown, ENP, First Vice President
Christy Williams, ENP, Second Vice President
Rick Galaway, ENP, Immediate Past President
Brian Fontes, Chief Executive Officer
EXECUTIVE SUMMARY

On behalf of public safety communications professionals across the nation, the ADA Sub-Committee worked to complete comprehensive TTY/TDD Minimum Training Standards for Public Safety Telecommunicators. The Committee, consisting of a group of working public safety communications professionals from various size agencies and backgrounds, along with members of The Los Angeles City Department of Disability, Texas Commission on State Emergency Communications and the Washington State 9-1-1/TTY Education, Hearing, Speech and Deafness Center worked exhaustively to seek out and include current and relative information for this standard. The focus of this TTY/TDD Training standard for Public Safety Telecommunicators is to provide a consistent level of training needed for Telecommunicators to effectively triage and evaluate TTY/TDD calls. It is expected that every Telecommunicator that may be placed in the position of answering a TTY/TDD call be trained to this standard prior to being released to work independently on the dispatch floor. In this ever-changing environment there is a realization that this standard does not address the potential impact that Next Gen 9-1-1 may have on the handling of TTY/TDD calls. APCO has a white paper that is being published that reviews and addresses many of the questions and concerns Next Gen 9-1-1 may have on TTY/TDD calls.

*Informative material and not a part of this American National Standard (ANS)
INTRODUCTION

SCOPE
This standard identifies the minimum training requirements for Telecommunicators specific to providing direct and equal access to public safety services to people who use a TTY/TDD to communicate, in accordance with the Americans with Disabilities Act and Department of Justice requirements. This document seeks to define the knowledge, skills, competencies, and minimum training requirements of individuals who receive emergency telephone calls from the public as well as the agency’s responsibilities for providing training, written directives, and testing in this critical function.

PURPOSE
In an effort to provide standardized training to PSAPs in the area of TTY/TDD call handling, the development of this document has included recommended standards developed by the Association of Public-Safety Communications Officials (APCO) International and National Emergency Number Association (NENA). The TTY/TDD Training Standards Workgroup developed this document on the premise that training should be standardized across public-safety organizations to ensure consistent compliance with the Americans with Disabilities Act (ADA), Title II requirements for telephone emergency services.

This standard should be viewed as independent and stand-alone from standards addressed elsewhere. Telecommunicators should be cognizant of other relevant standards, mandates, and legislation.
Chapter Two

Agency Responsibilities

SCOPE

While the majority of this document addresses the training standard associated with a Telecommunicators effective processing of TTY calls, this chapter outlines the agency’s responsibilities for providing training to both new and veteran Telecommunicators in accordance with this standard.

2.1 General Agency Responsibilities

2.1.1 The Agency shall establish no less than these minimum training requirements while complying with all local, state, federal, and tribal laws. ¹

2.1.2 The Agency shall define the baseline qualifications in addition to requisite cognitive, affective, and psychomotor skills needed to achieve compliance with this standard.

2.1.3 The Agency shall provide Telecommunicators with written directives related to effectively processing TTY calls.

2.2 Training

2.2.1 The Agency shall provide the Telecommunicator with comprehensive training which shall include information about the requirements of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act for telephone emergency service providers.

2.2.2 The Agency shall provide the Telecommunicator with appropriate cognitive and performance-based learning activities and performance evaluations as a part of the comprehensive training described in this standard to ensure students understand and can apply the information addressed throughout this standard.

2.2.3 The Agency shall provide the Telecommunicator with information about communication issues regarding individuals who are deaf, deaf-blind, hard of hearing, or people who have a speech disability, including information about American Sign Language (ASL).

2.2.4 The Agency shall provide the Telecommunicator with practical instruction on identifying and processing TTY/TDD calls including:

2.2.4.1 The importance of recognizing silent or open line TTY/TDD calls, and

2.2.4.2 Using proper syntax, abbreviations, and protocol when responding to TTY/TDD.

¹ Americans with Disabilities Act (1990) and ADA Amendments Act (2008).
2.2.5 The Agency shall provide the Telecommunicator with hands-on experience in TTY/TDD (in classroom or during the shift) by evaluating and documenting that training.

2.2.6 The Agency shall make comprehensive initial TTY training mandatory for all personnel who may have contact with individuals from the public who are deaf, deaf-blind, hard of hearing or have a speech disability.

2.2.7 The Agency may utilize a variety of ADA and TTY-related topics for training, to include but not be limited to:

2.2.7.1 Abbreviations and etiquette,

2.2.7.2 Crimes against people with disabilities,

2.2.7.3 Disability awareness (a review of physical, visual and

2.2.7.4 Communications-related disabilities, Alzheimer’s awareness and aphasia & other stroke-related conditions),

2.2.7.5 Disasters & people with disabilities,

2.2.7.6 Emerging technologies and services,

2.2.7.7 English vs. ASL gloss,

2.2.7.8 Handling Voice carry-over (VCO) & Hearing carry-over HCO calls, as well as Speech to Speech (STS),

2.2.7.9 Legal updates,

2.2.7.10 Next Generation 9-1-1 & TTY,

2.2.7.11 Procedures for Telecommunications Relay Services (TRS) calls,

2.2.7.12 PSAP technology specific TTY features

2.2.7.13 TTY/TDD call recognition & processing,

2.2.7.14 TTY/TDD protocol, and

2.2.7.15 TTY call processing written directives.

2.2.8 The Agency may utilize a variety of ADA and TTY-related interactive resources to accomplish training requirements, to include but not be limited to:

2.2.8.1 NENA E-PASS, and

2.2.8.2 State and local organizations/agencies for the deaf, deaf-blind, hard of hearing or people who have a speech disability.
2.2.9 The Agency shall provide for a comprehensive TTY proficiency testing program that includes, but is not limited to:

2.2.9.1 The Agency shall evaluate the trainee for proficiency in recognizing and handling the following types of calls, in accordance with agency written directives:

- Silent Calls
- Open line calls,
- Long steady high-pitch tones (ASCII handshake when turning on the TTY/TDD equipment),
- Short beeping tones, and Baudot, Voice announcer, and
- TTY Detector

2.2.9.2 The Agency shall evaluate the trainee on processing the following TTY/TDD call types:

- Hearing Carry Over (HCO),
- Relay Service calls
- TTY/TDD-to-TTY/TDD
- Voice Carry Over (VCO), and
- Other (eg., Emerging Technologies, etc.)

2.2.9.3 The Agency shall evaluate the trainee on the use of effective communication with callers using a range of English skills to American Sign Language Gloss.

2.2.9.4 The Agency shall evaluate the trainee on use TTY/TDD protocol, such as:

- Abbreviations,
- Etiquette, and
- Language.

2.2.9.5 The Agency shall evaluate the trainee on TTY/TDD call interrogation SOPs for gathering pertinent call-specific information.

2.2.9.6 The Agency shall evaluate the trainee’s ability to perform TTY/TDD troubleshooting and reporting procedures.
2.2.9.7 The Agency shall evaluate the trainee on TTY/TDD call documentation.

2.2.9.8 The Agency shall evaluate the trainee on the initiation of a public safety response based on the information gathered during the TTY/TDD call.

2.2.9.9 The Agency shall evaluate the trainee on TTY/TDD call transfer procedures using the PSAP’s primary and backup TTY equipment.

2.2.9.10 The Agency shall evaluate the trainee on the initiation of TTY/TDD calls, for call-back purposes, using the PSAP’s primary and backup TTY equipment.

2.2.9.11 The Agency shall establish a record keeping system to document TTY-related training, written directives, and evaluation methods.

2.2.9.12 The Agency shall maintain detailed records for each individual Telecommunicators’ initial and in-service TTY training, to include but not limited to:

- Certificate of completion or other proof of attendance,
- Number of training hours/time and date of training,
- Performance evaluation records,
- Trainee basic demographic information,
- Title of any training courses/activities, and
- Written test scores, if applicable.

2.2.9.13 The Agency shall maintain training course files on each training event, to include but not limited to:

- Course schedule/outline,
- Lesson plans, teaching guides or any detailed information on topics covered,
- List of attendees/course roster,
- Handouts, scenarios, activities, skills sheets, etc.,
- Name and contact information for course instructors,
- Title of course, seminar or training activity, and
2.2.10 The Agency shall provide the Telecommunicator with information on how and to whom they may address training issues and concerns.

2.2.11 The Agency shall provide the Telecommunicator with training and continuing education and opportunities that will allow the individual to maintain and/or enhance their knowledge, skills, and abilities as defined in Chapter Four (General Knowledge and Skills).

2.2.12 The Agency shall establish detailed and defined performance expectations, providing and ensuring a clear understanding of those expectations.

2.2.13 The Agency shall have an established mechanism by which the TTY-related job performance of the Telecommunicator is regularly reviewed and evaluated, at a minimum of every six months, based upon accepted quality assurance or improvement practices or standards.

2.2.14 The Agency shall ensure that Telecommunicators meet performance objectives and document such as part of the employee’s annual performance evaluation.

2.2.15 The Agency shall ensure that Telecommunicators appropriately identify various types of Telecommunications Relay Services (TRS) calls.

2.2.16 The Agency shall document and address unacceptable performance with additional training and coaching of the Telecommunicator in a timely manner.

2.2.17 The Agency shall ensure a fair and consistent application of a disciplinary process associated with TTY-related performance.

2.3 Refresher Training

2.3.1 The Agency shall make TTY/TDD refresher training available to any personnel who have contact with individuals from the public who are deaf, deaf-blind, hard of hearing or people who have a speech disability. This training shall occur as often as training for voice calls but at a minimum, every six months.²

2.3.2 The Agency may accomplish and document refresher training using a variety of training methods, to include but not be limited to:

2.3.2.1 Classroom and/or skills lab training,

2.3.2.2 Roll call/briefings,

2.3.2.3 Seminars,

² Americans with Disabilities Act (1990) and ADA Amendments Act (2008).
2.3.2.4 Structured, independent studies,

2.3.2.5 TTY Equipment testing evaluations, and

2.3.2.6 Written training materials.

2.3.3 The Agency shall maintain updated written directives and shall provide the most current written directives, and any training necessary to address changes related to TTY/TDD call processing.
Chapter Three

Organizational Integrity

SCOPE

This chapter discusses issues related to an organization’s values and beliefs. Topics include: mission statements and organizational structures and obligations of the Telecommunicators scope of profession, authority, confidentiality, and liability.

3.1 Organizational Integrity

3.1.1 The Telecommunicator shall demonstrate an understanding of the Agency’s mission, values, and goals as it relates to providing direct and equal access to people with disabilities.

3.1.2 The Telecommunicator shall be able to articulate the Agency’s expectations of professional conduct related to recognizing, processing, and dispatching calls for people with disabilities.

3.1.3 The Telecommunicator shall demonstrate proper application of the Agency written directives regarding providing services to people with disabilities and individuals who are deaf, deaf-blind, hard of hearing or people who have a speech disability.

3.1.4 The Telecommunicator shall adhere to applicable local, state, tribal, or federal statutes and codes as appropriate.

3.1.5 The Telecommunicator shall demonstrate comprehension and application of diversity awareness and an active commitment to ensure equality, per Agency written directives.
Chapter Four

General Knowledge and Skills

SCOPE

This chapter provides an overview of the general knowledge and skills that are common among high performing incumbent Telecommunicators specific to providing services to people with disabilities and individuals who are deaf, deaf-blind, hard of hearing or people who have a speech disability.

4.1 General Knowledge of the Telecommunicator

General areas of knowledge that have been identified for the Telecommunicator related to TTY/TDD. If the agency chooses to adopt these standards, training shall be provided to the Telecommunicator in the respective areas as deemed appropriate by the Agency. The Telecommunicator shall demonstrate comprehension in at least the following areas:

4.1.1 ADA-specific requirements of PSCCs for direct and equal access,

4.1.2 Agency operations,

4.1.3 Agency written directives,

4.1.4 Agency training standards and performance requirements,

4.1.5 Available Resource & References (ie, interpreters, equipment repair),

4.1.6 Applicable local, state, tribal, and/or federal standards and statutes and any applicable certification requirements,

4.1.7 Call Volume and Staffing Procedures,

4.1.8 Deaf culture and diversity awareness,

4.1.9 Employee complaint investigation and processing,

4.1.10 Legal concepts and risk assessment,

4.1.11 Record retention procedures,

4.1.12 Relevant public safety and homeland security initiatives specific to responses to People with Disabilities, 3

---

3 For example, Local, state, national; ex NIMS, ICS, Tactical Interoperations Communications Plan (TICP), National Response Framework
4.1.13 Technological systems: current systems used within the PSCC specific to primary and backup TTY equipment, emerging technologies and new trends, and

4.1.14 User Agency Defined Protocols (EMD, etc.).

4.2 General Skills of the Telecommunicator

If the agency chooses to adopt these standards, training related to TTY/TDD shall be provided to all Telecommunicators in the respective areas as deemed appropriate by the Agency. High-performing incumbent Telecommunicators have been identified as demonstrating the following skills:

4.2.1 Active listening skills,
4.2.2 Analytical skills,
4.2.3 Critical thinking skills,
4.2.4 Decision-making skills,
4.2.5 Multi-mode communications skills (alternating voice, text),
4.2.6 Multi-tasking skills,
4.2.7 Operational skills,
4.2.8 Problem solving skills,
4.2.9 Reading comprehension skills,
4.2.10 Stress Management skills,
4.2.11 Telecommunicator skills,
4.2.12 Troubleshooting skills,
4.2.13 TTY Equipment and/or TTY computer skills,
4.2.14 Typing skills, and
4.2.15 Written and verbal communication skills.

---

4 Refer to APCO Minimum Training Standards for Public Safety Telecommunicator
Tools, Equipment, and Technology

SCOPE

This chapter provides an overview of the general knowledge and skills that are common among high performing incumbent Telecommunicators specific to providing services to people with disabilities and individuals who are deaf, deaf-blind, hard of hearing or people who have a speech disability.

5.1.1 The Telecommunicator shall demonstrate the ability to utilize tools, equipment, and technology as needed by a Public Safety Telecommunicator identified in APCO ANS Minimum Training Standards for Public Safety Telecommunicator.

5.1.2 The Telecommunicator shall demonstrate the ability to receive, process and initiate calls of an emergency and non-emergency nature utilizing the agency’s primary and backup TTY equipment, detection equipment, telephony equipment, records management system, and other related tools or equipment.
Chapter Six

Professional Competence

SCOPE

This chapter identifies those components within Public Safety Communications that are critical for enhancing the professional competence of all Public Safety Telecommunicators. While the Agency has some responsibility for supporting and facilitating the development of the Telecommunicators’ professional competence, this chapter places primary accountability upon the Telecommunicator.

6.1.1 The Telecommunicator shall complete training and maintain all certifications as required by national, state, local and Authority Having Jurisdiction (AHJ) directives.

6.1.2 The Telecommunicator shall take responsibility for their own professional career development by actively seeking opportunities to enhance their job knowledge and skills related to providing direct and equal access to public safety communications services to people with disabilities and individuals who are deaf, deaf-blind, hard of hearing or people who have a speech disability.

6.1.3 The Telecommunicator shall comply with federal, state, and local government regulations and department policy related to TTY/TDD.

6.1.4 The Telecommunicator shall demonstrate the ability to meet and/or exceed the TTY-related performance standards set by the Agency.

6.1.5 The Telecommunicator shall demonstrate competency of the skills as detailed in Chapter Four, Section 4.3: General Skills for Telecommunicators.

6.1.6 The Telecommunicator shall actively seek feedback and review of their performance, including during the agency’s established quality assurance or quality improvement process.

6.1.7 The Telecommunicator shall demonstrate the ability to operate within all written directives and plans regarding operations established by and for the Agency.

6.1.8 The Telecommunicator shall demonstrate a general working knowledge of agency TTY-related operations including, but not limited to, calltaking, and other related job duties.

6.1.9 The Telecommunicator shall demonstrate the appropriate application of written directives and plans.

6.1.10 The Telecommunicator is encouraged to provide recommendations or feedback for complying with written directives, and plans when appropriate.
Chapter Seven

Core Competencies of the Telecommunicator

**SCOPE**

This chapter addresses the core competencies and minimum training requirements for the successful performance of the duties of a Telecommunicator in regards to providing public safety services to individuals who are deaf, deaf-blind, hard of hearing or have a speech disability or other disabilities.

7.1.1 The Telecommunicator shall demonstrate the ability to provide emergency telephone services to individuals who are deaf, deaf-blind, hard of hearing or have a speech disability or other disabilities in compliance with all legal requirements, to include but not limited to:

7.1.1.1 The Telecommunicator shall demonstrate familiarity of any local, state, federal, and tribal regulations related to providing governmental services to people with disabilities, which include but are not limited to:

- ADA Amendments Act (ADAAA) of 2008,
- Americans with Disabilities Act (ADA) of 1990, Title II, and
- Rehabilitation Act of 1973, Section 504.

7.1.2 The Telecommunicator shall demonstrate the knowledge and competency of the direct and equal access requirements established by the Department of Justice (DOJ) in the following documents:

7.1.2.1 ADA: Access for 9-1-1 and Telephone Emergency Services,

7.1.2.2 ADA Toolkit, Chapter 4: 9-1-1 and Emergency Communications Services, and

7.1.2.3 ADA Toolkit, Chapter 4 Addendum: Title II Checklist.

---

5 [http://www.access-board.gov/about/laws/ada-amendments.htm](http://www.access-board.gov/about/laws/ada-amendments.htm)
7 [http://www.epa.gov/civilrights/sec504.htm](http://www.epa.gov/civilrights/sec504.htm)
8 [http://www.ada.gov/911ta.htm](http://www.ada.gov/911ta.htm)
10 [http://www.ada.gov/pcatoolkit/chap4chklist.htm](http://www.ada.gov/pcatoolkit/chap4chklist.htm)
3.1.3 The Telecommunicator shall demonstrate knowledge and awareness of liability issues and other legal penalties for failure to provide direct and equal access.

3.1.4 The Telecommunicator shall demonstrate an understanding of and comply with all departmental policies and procedures related to handling TTY/TDD calls.

3.1.5 The Telecommunicator shall demonstrate the ability to process emergency and non-emergency calls for service for individuals who are deaf, deaf-blind, hard of hearing or have a speech disability or other disabilities.

3.1.6 The Telecommunicator shall recognize that a disability may include, but not be limited to:

- 7.1.6.1 Deaf,
- 7.1.6.2 Deaf-Blind,
- 7.1.6.3 Hard of hearing,
- 7.1.6.4 Late deafened,
- 7.1.6.5 Mild hearing loss,
- 7.1.6.6 Moderate hearing loss,
- 7.1.6.7 Profound hearing loss,
- 7.1.6.8 Severe loss, and
- 7.1.6.9 Speech disability.

3.1.7 The Telecommunicator shall demonstrate the ability to communicate directly with callers via a TTY/TDD in English and American Sign Language (ASL) gloss.

3.1.8 The Telecommunicator shall demonstrate the ability to communicate indirectly through a Telecommunications Relay Service (TRS) with callers who have a disability but do not use TTY/TDD equipment to communicate.

3.1.9 The Telecommunicator shall demonstrate the ability to utilize the Agency’s primary and backup TTY/TDD equipment to interact with citizens who use TTY/TDDs to communicate via the telephone and process calls for service.

3.1.10 The Telecommunicator shall demonstrate the ability to use stand-alone TTY/TDD equipment, in both acoustic couplers and/or direct connect mode.

3.1.11 The Telecommunicator shall demonstrate the use of integrated TTY/TDD equipment, as applicable.
7.1.12 The Telecommunicator shall demonstrate TTY/TDD troubleshooting procedures.

7.1.13 The Telecommunicator shall demonstrate the comprehension and use of TTY/TDD detection equipment, as applicable.

7.1.14 The Telecommunicator shall demonstrate the knowledge of voice announcers and pre-programmed message functions of standalone and integrated TTY/TDD equipment, as applicable.

7.1.15 The Telecommunicator shall demonstrate the procedures for documenting and integrating the TTY/TDD call information into Computer Aided Dispatch and Records Management Systems, if applicable.

7.1.16 The Telecommunicator shall demonstrate the ability to conduct, participate in and document the following TTY equipment test calls, but not be limited to:

7.1.16.1 Intra-Center Testing,

7.1.16.2 Inter-Center Testing,

7.1.16.3 NENA TTY Call Taker Proficiency and Quality Assurance 52-003, and

7.1.16.4 Volunteer TTY/TDD Caller Testing.

7.1.17 The Telecommunicator shall demonstrate the ability to process calls originating from various types of consumer TTY/TDD equipment used for emergency call handling:

7.1.17.1 Portable/compact units,

7.1.17.2 Public TTY/TDDs,

7.1.17.3 Standalone,

7.1.17.4 Text/SMS

7.1.17.5 Web-based TTY

7.1.17.6 The Telecommunicator shall identify TTY/TDD call recognition:

7.1.17.7 Detection equipment,

7.1.17.8 Long steady high-pitch tones (ASCII handshake when turning on the TTY/TDD equipment),

7.1.17.9 Open lines,

7.1.17.10 Short beeping tones, and Baudot,

7.1.17.11 Silent calls,
7.1.17.12 Turbo Code or enhanced TTY/TDD, and
7.1.17.13 Voice announcer.

7.1.18 The Telecommunicator shall demonstrate the use of TTY/TDD protocols, such as abbreviations, language, and etiquette.

7.1.19 The Telecommunicator shall demonstrate recognition and use of abbreviations (see Abbreviations list in this standard) commonly used in TTY/TDD calls.

7.1.20 The Telecommunicator shall translate key phrases from English to ASL Gloss.

7.1.21 The Telecommunicator shall translate key phrases from ASL Gloss to English.

7.1.22 The Telecommunicator shall demonstrate the knowledge of TTY/TDD call transfer procedures.

7.1.23 The Telecommunicator shall demonstrate the knowledge of the procedures for initiating a TTY/TDD call in cases of call disconnection and/or the need to call-back a reporting party.

7.1.24 The Telecommunicator shall demonstrate the knowledge of the procedures for responding to Voice Carry Over (VCO) requests directly from callers.

7.1.25 The Telecommunicator shall demonstrate the knowledge of the procedures for responding to Hearing Carry Over (HCO) requests directly from callers.

7.1.26 The Telecommunicator shall demonstrate knowledge of the procedures for handling various types of calls from Telecommunications Relay Services (TRS):

7.1.26.1 Hearing Carry Over (HCO),
7.1.26.2 Internet Protocol (IP) relay,
7.1.26.3 Speech-to-Speech,
7.1.26.4 TTY-to-Voice,
7.1.26.5 Video Relay Services (VRS), and
7.1.26.6 Voice Carry Over (VCO).

7.1.27 The Telecommunicator shall demonstrate knowledge of the procedures for handling non-English TTY/TDD calls.

** END of APCO/NENA ANS 3.105.2-20XX**
### ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>ADAAA</td>
<td>ADA Amendments Act</td>
</tr>
<tr>
<td>AHJ</td>
<td>Authority Having Jurisdiction</td>
</tr>
<tr>
<td>ANS</td>
<td>American National Standard</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standard Institute</td>
</tr>
<tr>
<td>APCO</td>
<td>Association of Public-Safety Communications Officials</td>
</tr>
<tr>
<td>ASCII</td>
<td>American Standard Code for Information Exchange</td>
</tr>
<tr>
<td>ASL</td>
<td>American Sign Language</td>
</tr>
<tr>
<td>CA</td>
<td>Communications Assistant</td>
</tr>
<tr>
<td>CAD</td>
<td>Computer Aided Dispatch</td>
</tr>
<tr>
<td>CASE</td>
<td>Conceptually Accurate Signed English</td>
</tr>
<tr>
<td>DOJ</td>
<td>Department of Justice</td>
</tr>
<tr>
<td>EMD</td>
<td>Emergency Medical Dispatcher</td>
</tr>
<tr>
<td>HCO</td>
<td>Hearing Carry-Over</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>NENA</td>
<td>National Emergency Number Association</td>
</tr>
<tr>
<td>PSAP</td>
<td>Public Safety Answering Point</td>
</tr>
<tr>
<td>PSCC</td>
<td>Public Safety Communications Center</td>
</tr>
<tr>
<td>PSAP</td>
<td>Public Safety Answering Point</td>
</tr>
<tr>
<td>SDC</td>
<td>Standards Development Committee</td>
</tr>
<tr>
<td>SEE</td>
<td>Signing Exact English</td>
</tr>
<tr>
<td>SOPs</td>
<td>Standard Operating Procedures</td>
</tr>
<tr>
<td>STS</td>
<td>Speech-to-Speech</td>
</tr>
<tr>
<td>TRS</td>
<td>Telecommunications Relay Service</td>
</tr>
<tr>
<td>TTY</td>
<td>Teletypewriters</td>
</tr>
<tr>
<td>TTY/TDD</td>
<td>Teletypewriters / Telecommunications Device for the Deaf</td>
</tr>
<tr>
<td>TTY-PASS</td>
<td>Teletypewriter—Performance Assessment and Scoring System</td>
</tr>
<tr>
<td>Acronym</td>
<td>Term</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>VCO</td>
<td>Voice Carry-Over</td>
</tr>
<tr>
<td>VI</td>
<td>Video Interrupter</td>
</tr>
<tr>
<td>VI/CA</td>
<td>Video Interrupter/Communications Assistant</td>
</tr>
<tr>
<td>VoIP</td>
<td>Voice over Internet Protocol</td>
</tr>
<tr>
<td>VRS</td>
<td>Video Relay Service</td>
</tr>
</tbody>
</table>

*The Acronyms and Abbreviations are informative material and not a part of the ANS*
GLOSSARY

Agency: The hiring authority or also referred to as the Authority Having Jurisdiction (AHJ). The Agency or body that defines the roles, responsibilities, policies and procedures, and performance standards that direct the activity of the Public Safety Telecommunicator. In multi-discipline centers, the Agency governs the operation providing call taking/dispatch and related services to customer agencies; in single discipline centers, a single Agency may direct these services for one or more departments within a service area. Both have the duty to define training appropriateness, content, format, and continuing education requirements.

American Sign Language (ASL): A language expressed through hands and body movements to express concepts rather than complete sentences. The grammatical structure is different than standard English.\(^\text{11}\)

American with Disabilities Act (ADA): The Americans with Disabilities Act (ADA) is a landmark civil rights law that both identifies and prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. This Act requires all Public Safety Answering Points (PSAPs) to provide direct and equal access to emergency telephone services for people with disabilities who use teletypewriters (TTY/TDDs), which are also known as telecommunications devices for the deaf. This means that the personnel answering calls at the PSAP level must be able to directly receive TTY/TDD calls and must be able to engage in TTY/TDD conversation.

ASCII tones: A person can also use a computer with a TTY modem and related software to communicate with someone who has a TTY or who has a computer with TTY software and a modem. Computers generally operate in American Standard Code for Information Exchange (ASCII), an electronic "language." A person who uses ASCII must use an ASCII/Baudot modem and related software to convert the ASCII code into Baudot code to communicate with another person who is using a Baudot-based system. Similarly, a person who is using a Baudot-based TTY must utilize conversion software to communicate with a person using an ASCII-based computer. Some TTY's can function in both Baudot and ASCII.

Character Code System: Is a method of transmitting basic text messages containing the Roman alphabet and numerals, along with a limited set of symbols.

Blindness: The term "blindness means central visual acuity of 20/200 or less in the better eye with the use of a correcting lens. An eye which is accompanied by a limitation in the fields of vision such that the widest diameter of the visual field subtends an angle no greater than 20 degrees shall be considered for purposes in this document as having a central visual acuity of 20/200 or less".\(^\text{12}\)

\(^{11}\) NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010


3.105.2-20XX Minimum Training Standard for Use of the TTY/TDD in the Public Communications Center
Call for Service or Request for Service: A call that results in the provision of a public safety service or response.

Call-back: The capability to re-contact the calling party.\textsuperscript{13}

Cognitive and Performance-Based Learning Activities: Training activities that stimulate learning:

- Cognitive learning occurs primarily through exposure to logically presented information. Performance-based learning occurs when trainees are given opportunities to experience simulated or actual activities that involve the skills related to the learning objective.

Communications Assistant (CA): A communications assistant is an employee of the Telecommunications Relay Service (TRS) provider who transliterates conversation from text to voice and from voice to text between two end users of TRS.\textsuperscript{14}

Deaf: Partial or complete hearing loss. A deaf person, in medical terms, may have severe to profound hearing loss. When referencing the Deaf community, this refers to people who use American Sign Language, SEE (Signing Exact English), and CASE, (Conceptually Accurate Signed English) language as a primary means of communication.

Deaf-Blind: A term used to describe a person with some hearing and vision loss. S/he may have either total or partial loss of hearing and sight.

Department of Justice (DOJ): A branch of the Federal Government legislated to oversee compliance of Title II of the ADA.\textsuperscript{15}

Detection equipment: A device, commonly referred to as a TTY/TDD Detector, which connects directly to the telephone line and monitors the line for the sounds of incoming TTY (Baudot and ASCII code) tones. When the TDD Detector recognizes TTY tones on the phone line, it announces the incoming TTY call and automatically sends a TTY message to the caller to let them know the call has been answered.

Direct access: PSAP’s must be able to directly receive TTY calls without relying on an outside relay service or third party services.\textsuperscript{16}

Disability: The term "disability" means, with respect to an individual (A) a physical or mental impairment that substantially limits one or more major life activities of such individual; (B) a record of such an impairment; or (C) being regarded as having such an impairment.\textsuperscript{17}

\textsuperscript{13} NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010
\textsuperscript{14} Federal Communications Commission, \url{http://www.fcc.gov/Bureaus/Common_Carrier/FAQ/faq_trs.html}
\textsuperscript{15} NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010
\textsuperscript{16} Department of Justice, Americans with Disabilities Act: Access for 9-1-1 and Telephone Emergency Services
\textsuperscript{17} Americans with Disabilities Act of 1990 (ADA), as amended, P.L. 110-325
**Equal Access:** Equal Access requires that 9-1-1 services provided for individuals who use TTY/TDD be as effective as those provided for individuals who make other calls.\(^{18}\)

**Hard of Hearing:** The term “hard of hearing” refers to those who have some hearing. A hard of hearing person, in medical terms, may have a mild to moderate hearing loss.

**Hearing Carry-Over (HCO):** People with speech impairments who are not deaf or hard of hearing often prefer HCO. HCO allows them to type their words on a TTY to call takers and hear call takers' spoken responses through their handset. HCO can be accomplished by a call taker using standard stand-alone TTY equipment by alternating speaking into the handset and placing the handset in the TTY when the caller types a response.\(^{19}\)

**Integrated TTY:** Refers to TTY functionality that has been integrated within a computer workstation. This may be found within the 9-1-1 telephony system or interfaced in a CAD (Computer Aided Dispatch) system.\(^{20}\)

**Inter-Center Testing:** This is a testing mechanism by which call takers make test calls to other PSAP’s to test their proficiency.\(^{21}\)

**Internet Protocol Relay Service (IP Relay Service):** A text-based communication service that allows a person who is deaf, deaf-blind, hard of hearing or has speech disabilities to communicate with any telephone user via a Communication Assistant (CA) at a relay service call center using an Internet connection. IP Relay is accessed using a computer or wireless handheld device and the Internet, rather than a TTY and a landline telephone.

**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.\(^{22}\)

**Knowledge:** Fundamental understanding one must have in order to perform a specific task.

**Open line:** Call in which no one is speaking or typing but the calltaker can hear the presence of any background sounds.

**Public Safety Answering Point (PSAP):** A facility equipped and staffed to receive emergency and non-emergency calls requesting police, fire, emergency medical, and other public safety services via telephone and other communication devices.

**Public Safety Communications Center (PSCC):** A public safety entity (which may include a PSAP or be referred to as an Emergency Communications Center or communications center) where emergency

---

\(^{18}\) Department of Justice, Americans with Disabilities Act: Access for 9-1-1 and Telephone Emergency Services

\(^{19}\) Department of Justice, Americans with Disabilities Act: Access for 9-1-1 and Telephone Emergency Services

\(^{20}\) NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010

\(^{21}\) NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010

\(^{22}\) NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010
calls for service or 9-1-1 phone calls culminate, and/or where calls for service are dispatched to public safety service providers.

**Public Safety Communications Personnel**: Trained individuals in a public safety communications center responding to calls for a public safety service or response.

**Quality Assurance Process**: A formal assessment process by which actual performance, behavior and outcomes are compared against established standards to ensure compliance, consistency, and accuracy in the delivery of quality service.

**Rehabilitation Act of 1973, Section 504**: A federal law that protects qualified individuals from discrimination based on their disability. The nondiscrimination requirements of the law apply to employers and organizations that receive financial assistance from any Federal department or agency.\(^23\)

**Relayed Calls**: A Telecommunications Relay Service (TRS) call in which the person uses a TTY/TDD or other text or video input device to call the TRS relay center, and gives a Communications Assistant (CA) the number of the party that he or she wants to call. The CA in turn places an outbound traditional voice call to that person. The CA then serves as a link for the call, relaying the text or sign language of the calling party in voice to the called party, and converting to text or sign language what the called party voices back to the calling party.\(^24\)

**Shall**: Within the context of this standard, “shall” indicates a mandatory requirement.

**Should**: Within the context of this standard, “should” indicates a recommendation.

**Silent Calls**: Describes open line telephone calls in which no one is speaking or typing and the calltaker does not hear any background sounds.

**Speech Disability**: A Speech Disability is a communications disorder, such as stuttering, impaired articulation, language impairment or a voice impairment, which adversely affects a person’s ability to articulate speech clearly.

**Speech-to-Speech**: STS is a form of Relay Services that provides Communications Assistants (CAs) for people with speech disabilities who have difficulty being understood on the phone.\(^25\)

**Telecommunications Relay Service (TRS)**: A federally mandated service provided by states that provides communication relay between TTY users and voice telephone users, via a third party, for communications assistance.\(^26\)


\(^{26}\)NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010
Trainee: A public safety communications employee (new or veteran) being trained in any one of the programs under the direction of the Training Coordinator.

TRS Hearing-Carry Over (HCO): A type of TRS call that allows a person with a speech disability, but who wants to use his/her own hearing, to listen to the called party and type his/her part of the conversation on a TTY. The CA reads these words to the called party, and the caller hears responses directly from the called party.\(^{27}\)

TRS Voice-Carry Over (VCO): A type of TRS call that allows a person with a hearing disability, but who wants to use his or her own voice, to speak directly to the called party and receive responses in text from the CA. The calling party requires no typing. This service is particularly useful to senior citizens who have lost their hearing, but who can still speak.\(^{28}\)

TTY/TDD: (Teletypewriter/Telecommunications Device for the Deaf): A device capable of information interchange between compatible units using a dial up or private-line telephone network and Voice over Internet Protocol (VoIP) connections as the transmission mediums. ASCII tones or Baudot codes are used by these units. (per EIA PN-1663)\(^{29}\)

Voice announcer: A feature on some TTYs which uses a computerized voice message to announce to the called party that a TTY call is being received.

Voice Carry Over (VCO): It is a communication hybrid of TTY 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 what is called voice carryover (VCO). With VCO, the caller speaks directly into the phone, and the call taker types 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 couplers to type a response.\(^{30}\)

Voice over Internet Protocol (VoIP): A technology that allows you to make voice calls using a broadband Internet connection instead of a regular (or analog) phone line. Some VoIP services may only allow you to call other people using the same service, but others may allow you to call anyone who has a telephone number - including local, long distance, mobile, and international numbers. Also, while some VoIP services only work over your computer or a special VoIP phone, other services allow you to use a traditional phone connected to a VoIP adapter.\(^{31}\)

Volunteer TTY/TDD Caller Testing: An outreach program to the deaf community which asks for volunteers to call 9-1-1 and other emergency numbers with test calls, based on a defined set of procedures and expectations, in an effort to ensure equipment functionality and enhance call taker proficiencies where it concerns utilizing TTYs. Also known as the Phone Pals Program.\(^{32}\)


\(^{29}\) NENA Master Glossary of 9-1-1 Terminology NENA 00-001, Version 14, September 29, 2010

\(^{30}\) Department of Justice, Americans with Disabilities Act: Access for 9-1-1 and Telephone Emergency Services


\(^{32}\) NENA 52-501 Phone Pals
Video Interpreter/Communication Assistant (VI/CA): In a Video Relay Service (VRS) call, the CA is a skilled sign language interpreter referred to as a Video Interpreter (VI) who can see the caller via a video device and an internet connection. The VI interprets and relays between the American Sign Language (ASL) user and the speaking person. In an IP Relay call, the Communication Assistant (CA) relays back and forth between the text user and the speaking person.

Video Relay Service (VRS): Enables a person who is deaf, deaf-blind, hard of hearing or has speech disabilities to use sign language or speech reading to communicate with any telephone user via a Video Interpreter (VI) at a relay service call center. The user has a videophone or webcam connected to a video relay service call center using an internet connection.

Syntax: The study of rules that govern the ways words combine to form phrases, sentences, and clauses.

* Definitions are informative and not considered part of the ANS.
Special recognition to the SDC ADA APCO NENA Workgroup that provided the pertinent research needed to successfully update this standard:

APCO Standards Development Committee (SDC) NENA ADA Workgroup

Sherry Taylor, Chair, Indianapolis Fire Department Communications Division, IN
Frank Kiernan, Meriden Emergency Communications, CT
Angela Bowen, Georgia Public Safety Training Center, Georgia
Toni Dunne, Intrado, CO
Cheryl Greathouse, Georgia Public Safety Training Center, Georgia
Donna Platt - NENA Accessibility Committee, N.C. Department of Health and Human Services, NC
Richard Ray – NENA Accessibility Committee
Kerry Coward – NENA Accessibility Committee
Crystal McDuffie, ENP, RPL, Secretary
APCO International

*Informative material and not a part of this American National Standard (ANS)*
APCO Standards Development Committee

Daniel Morelos
Tucson Airport Authority
Arizona

Karen Allen
SRP Security Services
Phoenix, Arizona

Sherry Taylor
Indianapolis Fire Department
Communications Division, Indiana

Bradford S. Smith
Framingham Fire Department
Massachusetts

Judith Weshinskey-Price
Pinellas County Regional 9-1-1
Largo, Florida

Bud Hicks, ENP
Grundy County 911
Morris, Illinois

Rick Thomas, RPL
Apex, North Carolina

Jackie Pace
Redwood City, California

James Leyerle, ENP
OnStar, Retired

Kim Ostin
Sterling Heights Police Dept. (Ret)
Sterling Heights, MI

Nathan McClure, ENP
Past APCO International President
AECOM, Retired

Nicola Tidey, RPL, ENP
Mission Critical Partners
College Station, Pennsylvania

Stephen Ashurkoff, ENP
Safety & Security Technologies
Comtech Telecommunications Corp.
Westwood, Massachusetts

Stephen Devine
FirstNet

Gary Bates
Pyramid Architecture/Engineering
& Pyramid Consulting

Stacy Banker, RPL, ENP
Standards Program/ACS Manager
APCO International

Casey Martins
Resource Coordinator
APCO International

*Informative material and not a part of this American National Standard (ANS)
3.105.2-20XX Minimum Training Standard for Use of the TTY/TDD in the Public Communications Center