

NTS METHODS AND PRACTICES GUIDELINES

ARRL PSCM, Appendix B, NTS MPG - FOREWORD

This document, *NTS Methods and Practices Guidelines (NTS MPG)*, is attached to the ARRL *Public Service Communications Manual (PSCM)* as *Appendix B*, and is the working reference manual on Message Formatting, Message Handling, and Traffic Net Procedures in the NTS and NTSD. It shall be the uniform reference guideline document for STMs, Section/Local NMs, and Area Staff members. For consistency, the MPG should also be the guidance reference for handling formal record traffic by ARES(r).

The *NTS MPG* document is created and maintained for the three NTS Area Chairs by the Standing MPG Committee, and selected additional staff persons, under the *General Procedures* sections of the *NTS Terms of Reference (NTS TOR)* attached to the *PSCM* as *Appendix A*.

This manual will be a working reference document---subject to change as Amateur Radio continuously improves how the tasks are performed. The methods presented are a reasonably accurate snapshot of current practices. They are indeed practices, and not strict rules, but the beginner, Section, Region, Area, and TCC net operators and management alike will find it beneficial to have a uniform protocol reference to be used by operators. It is further hoped that the wisdom of the founders of the ARRL and its NTS with respect to fundamental operating practices, along with new practices, will be preserved in tact in one collection of documentation as the NTS goes forward. Other essential references such as message Precedences, "Q signals", Handling Instructions, ARRL Numbered Radiograms, etc., are reproduced in this manual although available from ARRL in Newington, CT, in printed form or on the internet. You will need to update these from the ARRL primary source from time to time.

The ARRL NTS system operation is in accordance with the *PSCM* and *NTS TOR* as applied to each respective NTS Area. Such matters are left to those separate documents.

This manual deals with message formatting and station and fundamental net operating practices. Matters of net style such as opening and closing statements, order of liaison calls, traffic routing nomenclature, traffic listing calls and sequencing, etc., are issues dealt with by Net Managers, Section Traffic Managers, and Area Staffs, as appropriate. This manual is not intended to infringe on their discretion in such matters, nor with "job descriptions" imposed at any level.

Instructors may extract the information in the manual for use in their own training lesson plans provided full credit is given to the ARRL source. Some simplified overview tutorial documents may be made available through ARRL Field and Educational Services from time to time, particularly for the introduction of the NTS, NTSD, and other digital modes to newcomers to Amateur Radio.

Requests for further information, explanations, or suggested additions should be submitted to your Net Manager for consideration. After review, such input may be forwarded via either STM's or Area/TCC staff to the appropriate Area Chair for periodic consideration by the NTS standing committee on methods and practices guidelines.

FOREWORD

Handling communications for a third party has always been a technology and art form capturing the imagination of people throughout the history of civilization. Such communications have played an important role in the development of the world as we know it. It is no surprise that this fascination persisted and flourished with the introduction of the telegraph and radio.

From smoke signals to semaphore, telegraph to email, the art form has adapted to the prevailing technology of the time. Over the years the mechanism of getting the information from point A to point B may have changed, but the basic steps of creating the transmission-ready final form of the communication, the handling of it through the system, and the reception and delivery have remained essentially the same.

In Amateur Radio today we find many adaptations to the technology of the time and, in fact, we are involved in developing new technologies as we go along. The basic underlying purpose and act of communicating for a third party, or for ourselves, is still fascinating and useful regardless whether we are using CW, Voice, RTTY, PSK-31, packet, or *Radio-email*. The use of today's modes has expanded our abilities far beyond the time when Hiram P. Maxim wanted to send his message on CW to order a new tube and seized upon the idea of having a system of scheduled and reliable nets to handle such message traffic.

We began this Amateur Radio journey in an organized way in 1914 when the American Radio Relay League was founded, and the NTS net system has developed and adapted over the years. Today the ARRL manages and operates the National Traffic System (NTS/NTSD) to assure a continuing and reliable structure to handle formal message traffic in the US. Many other countries participate in the system as permitted by treaty or convention. CW, Voice, and a variety of digital modes and structures are operating to assure the use of Amateur Radio resources in the public service effort to the fullest extent possible.

There is a large body of experience and literature available to guide amateur operators in station configuration and using radio to establish contact. This experience is in many ways unique to Amateur Radio due to its flexibility and resourcefulness driven by personal interest and motivation. This manual will not deal with this art except where the specifics of radio operation are conducive to effective message transmission and reception.

The public and our served agencies appreciate our ability to send formal written message traffic efficiently and accurately. When we combine our traffic handling, radio, and net operating skills to provide professional service we earn their trust.

The process is simple, yet there are details to learn about how to make it all happen efficiently and with precision. We must interface with those we serve and gather the information required to prepare the message in the proper format, or provide a path to accept a properly formatted digital rendition of a message. We must be skilled at exchanging the message with another station to pass it along, and be able to participate in and run organized nets to efficiently handle large amounts of message traffic. We must know how to deliver the message to the addressee, and create a reply or a service message back to the originator when required.

The current NTS and NTSD systems are structured networks. As such, any station can tell from a Radiogram's address the routing of a message to its ultimate destination via the structure, either using knowledge of the scheduled nets and their connecting liaisons, or understanding automated NTSD MBO routing operations. The *Radio-email* layer, when using Winlink 2000, is a client-to-client network automated forwarding system much like regular email, but *Radio-email* may also be transferred peer-to-peer, directly, station to station. In all such instances, messaging contains header tracking information to permit servicing messages back to the sender.

The manual, therefore, will deal with the methods used by effective communicators in transmitting and copying formal written message traffic while dealing with language perception, message format, net operating and net control protocols, and managing the completion of the task through to delivery and servicing of messages. Soliciting messages from the public and brief discussions of public service and disaster operations are also presented.

OBJECTIVES:

The primary objective of the methods and practices guidance is to facilitate transmission of a properly formatted written formal message from point A to point B such that it arrives exactly as written on the original copy, group for group, character for character, space for space.

Radiogram messages filed in the NTS and NTSD must be capable of being transmitted by any mode without message alteration being required.

Voice and CW nets must be run with methods and protocols to operate effectively and uniformly so that message traffic may be exchanged with efficiency. Stations moving about the country to assist during emergencies benefit from finding such uniform practices throughout the system.

Stations operating in the NTS and NTSD have the responsibility to promptly relay messages along, deliver messages in a timely fashion, or service undeliverable messages back to the originator. Stations must honor this responsibility and any additional handling instructions.

Stations operating in the NTS and NTSD interface directly with the public and served agencies representing all of Amateur Radio. Stations must represent us all as professionally as possible.

The methods and practices of the NTS MPG are intended to facilitate achieving these objectives. Guidance is also provided for stations in the NTS, NTSD, and ARES(r), for handling written record traffic in the modern email format over amateur radio (*Radio-email*) on a common communications layer or peer-to-peer.

CHAPTER 1, FORMAT: Chapter 1 presents the standard ARRL formal Radiogram format used throughout Amateur Radio today for written message traffic. This format is the expected form of written messages in the NTS/NTSD, and is used everywhere except in a few specialized served agency applications where simplified incident reports or customized RACES forms may be used point-to-point. Other techniques used in some disaster efforts, such as taking lists of contact names for welfare inquiries, and other similar informal traffic handling methods, are beyond the scope of this manual.

CHAPTER 2, VOICE: Transmission of formal written traffic by voice confronts the amateur with the difficulties of voice perception when attempting to convey form and content with precision. The path of the manual temporarily splits accordingly, presenting voice message exchanging protocols in Chapter 2 separate from the CW protocols. The two station voice exchange is presented in this chapter.

CHAPTER 3, CW: Transmission of formal written traffic by CW is presented in Chapter 3. The technique is notably different than on voice. The two station CW exchange is presented in this chapter.

CHAPTER 4, NETS: Managing the voice and CW routing of messages beyond the two station exchange is handled on manual NTS nets. Scheduled directed traffic nets are the primary operations for establishing liaison connections, listing message traffic, assigning outlets, dispatching traffic, and providing administrative communications. The manual paths again converge, presenting both CW and voice traffic net operating guidelines, for both the participating station and the net control, in Chapter 4.

CHAPTER 5, NCS: Additional topics unique to net control are expanded upon in Chapter 5.

CHAPTER 6, NTSD, RADIO-EMAIL: Messages transmitted through the NTS Digital (NTSD) use the standard ARRL Radiogram format for the entire message entered into the text field, thus enabling a message to move from one mode to another without modification. Chapter 6 presents the NTS Digital (NTSD) methods of handling the standard message including the routing information in the "To" and "Subject" blocks. The NTSD Guidelines for the system are included in this chapter. Guidance is also included in this chapter for handling *Radio-email* messaging, with binary attachments as needed, and for transporting Radiogram messages carried by such *Radio-email*.

CHAPTER 7, SAR/PSHR: Chapter 7 presents the methods used by stations participating in the National Traffic System for reporting their monthly activity---the SAR and PSHR reports.

CHAPTER 8, PUBLIC INTERFACE: Chapter 8 presents guidelines for delivering messages to the addressees, sending service messages back to the station of origin to report on progress or problems, notes on originating messages from the public, and mass mailings.

CHAPTER 9, PUBLIC SERVICE: Chapter 9 ends the manual with a discussion and examples of some tactical public service type operations. Section Emergency Coordinators and local EC's generally stipulate the methods used in this type operation, hence the examples given here are designed to show how the traffic net procedures can be useful in such nets.

GENERAL: Throughout this manual there are tasks presented which are, or may be, handled using various techniques. Different methods for doing the same task are either presented as alternate choices explained in full as separate cases, or included in notes within the chapter section. Often the order of preference is based upon the current "best Amateur Radio practice".

In some cases there are matters for which there is no customary method yet devised or widely used. A few suggestions are made, but plain English is always a default tool for accomplishing the tasks or issuing the commands in these cases.

Some new ice is broken in a few protocols presented in the manual. For example, the continuing problem of how best to handle voicing of different kinds of groups encountered in messages when on the phone nets has been consolidated into one set of guidelines. Although these matters are handled in a variety of ways throughout the system, the presented form will be of assistance in bringing some uniformity. To do otherwise would leave a large number of variable "rules" to use which can be confusing to the newcomer. A variety of rules can lead to misunderstandings and surprises when transmitting message traffic even among experienced operators. The voicing protocols presented here are designed to be mutually exclusive, assuring that every form of message syntax or encountered group will have a unique method applied. The experienced operator may then come to expect a unique meaning of the method in each situation.

Such license is taken only when the presented protocols have been subjected to extensive testing in typical amateur traffic handling situations. When choices were available, those presented first in order were chosen to attempt to optimize message transmission and reception accuracy, then efficiency.

In addition to the chapter texts, some additional attachments are included in both textual and graphics form to aid in the fundamental purpose of the work, i.e., to provide a document for those wishing to have a ready reference for the current “best Amateur Radio traffic handling practices” of the day.

The overall NTS MPG table of contents Section Listings document (*MPGS*) is presented up front for printed reference purposes. Each chapter has its own table of contents (active links).

The future of the NTS is in the hands of those who understand the value of formal third party communication and the technology required to make it effective in today’s environment. To assure opportunities for all amateurs to enjoy the rewards of public service traffic handling it is essential to pass along the knowledge developed over the years, and to introduce newcomers to this particular subset of Amateur Radio activity. Everyone can participate.

Formal traffic handling is an essential part of Amateur Radio emergency communications public service as well. Effective ARES/RACES/ACS operations need not invent a new wheel to accomplish this. Where formal traffic handling is required, cooperative effort and training between NTS operators and those of ARES/RACES/ACS will produce benefits for the overall effort. The distinction between the groups with respect to traffic handling can be made to vanish. ARES/RACES/ACS operators can become NTS operators within their domain. In fact, the new and popular use of *Radio-email* for emergency communications provides access for all of these organizations on a common layer for the first time while preserving a bridge between ARES(r) and the NTS/NTSD for the exchange of Radiogram messaging when “network” addresses are not available. Thus, due to the common layer, these organizations are becoming effectively integrated.

It is worthwhile to reduce the number of amateurs encountered at hamfests who have been in the service for ten or twenty years or more who have never heard of the NTS! It is perhaps more important to be certain that newcomers, from the first day they enter the Service, are aware of the NTS/NTSD, ARES(r), RACES, ACS, *Radio-email* and other digital modes, etc., and the skill levels used in serving the public with our best technologies.

Pass the torch!

ACKNOWLEDGMENTS

Many outstanding Amateur Radio operators have contributed to this manual---some without even being aware of it at all. We are specifically referring to all the devoted NTS operators, net controls, and

net managers encountered since way back in the United Trunk Line days. Those individuals were the mentors for all of use coming up through the ranks of the traffic handling community. They are the ones who pioneered the practices we use today, and to each and every one of them we owe our thanks for their devotion to the effectiveness of our traffic handling systems. Remember that H. P. Maxim was doing this at one time... with the same intent as those of us who pound brass, voice messages, or type on keyboards today. George Hart gave us the NTS hub structure that persists to this day. The NTSD essentially parallels that very structure to augment the NTS nets and the TCC with HF forwarding mailbox stations, and to service our Section traffic handlers via Digital Relay Stations.

Particular thanks must be given to Bill Thompson, W2MTA, most recent past Eastern Area Chair, who shared a keen interest in this particular work, encouraged its progress, and made it possible to bring it to this level. It is hoped that the manual will satisfactorily justify his trust.

Thanks to Marcia, KW1U, current Eastern Area Chair, who helped carry the work forward, and to Jim, KB5W (SK), Central Area Chair, and Rob, K6YR, Pacific Area Chair, for their assistance, guidance and suggestions in bringing this work of the Standing Committee to final form and submission.

Thanks also must be extended to Gary Ferdinand, W2CS, who likewise shared a keen interest in this effort. His considerable time and effort in precise and detailed review and criticism of the articulation of techniques helped capture in the written word efficient methods and syntax at all levels of operating activity. To a large extent the capturing of best current practice in this manual is due to his sharp eye and experience.

Thanks to Nick, N4SS (SK), Eastern Area NTSD, and Cal, N3QA, former 3DC, who both made extensive contributions to Chapter 6 on the NTS Digital system.

Appreciation must also be extended to all the currently active net controls and operators who answered questions or set the example along the way. This was always done with the friendly spirit of cooperation in Amateur Radio that makes our service unique.

And thanks, too, to all the NTS operators in the MDC Section who put up with the constant experimentation with traffic handling quality control tests, training and exercises, SET workloads, and constant preaching. The MDC SEC, WA1QAA, was first in line insisting on having this kind of document, and spent untold hours helping to review content. Thanks also to John, KO4A, who invested his time and effort in early formatting of material which helped move the project forward.

All of those operators, Section and national, contributed a great deal to this manual by proving what works, and reminding us all daily why we do this.

73, AI, W3YVQ, EAS Associate Member, ORS, OES;

Chair, MPG Committee; Chair NTSWC Committee;

MDC ASM RACES-ARES/NTS Coordinator.

Page last updated MAR, 2014

2014 Chapter 6, NTSD, added Radio-email guidance.

W3YVQ 2004