THE TELEGRAPH MESSENGER

There was a time when the telegraph messenger was a common site in cities of all sizes. Many young men started their working life delivering and collecting telegrams on behalf of the Western Union and Postal Telegraph Companies and later, such companies as Radiomarine Corporation (RCA).

While the modern history text books tell the two-dimensional story of child labor; those that lived this era will tell you that the story is somewhat more nuanced and complex. Certainly, child labor in the sweat shops and the mills of the 19th and early 20th centuries was often an abomination. Such abuses rightfully led to reforms during the progressive era of the early 20th Century and thereafter. Yet, not all child labor was created equal. Many who were employed as youthful telegraph messengers saw the position as beneficial.

The telegraph messenger often benefited from what might be referred to as an "uncommon education." During his contact with the varied customers of the telegraph company, he learned much about human behavior, business and industry. Some messengers used their position as an opportunity to learn telegraphy after hours, thereby embarking on a skilled trade, which offered good pay, a retirement and stable employment. Others had the opportunity to see a cross-section of the economy and meet men of prominence in various fields; connections which would pay dividends later in life.

George O. Hack was one such youth. He began his career with Western Union as a messenger,

A Youthful George Hack
Photo courtesy Morse Telegraph Club, Inc.

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QNI MISSION STATEMENT

QNI is an *independent* newsletter dedicated to promoting NTS and genuine emergency communications preparedness.

Our newsletter is independently published and distributed free of charge to the Amateur Radio and emergency management community. The opinions contained herein do not reflect the policies or opinions of the *ARRL*, the National Association for Amateur Radio, nor those of any particular NTS net or emergency communications organization.

Our mission is to provide a forum for NTS volunteers throughout North America. We operate on the premise that Amateur Radio public service volunteers should be, first and foremost, communicators and technicians. If you share this vision, please support *QNI*. Submit your news and articles for publication.

became a telegraph operator and ended his career decades later as a senior manager with Western Union. George was a familiar site in the press box at college football games in Florida and the recipient of a heartfelt testimonial from the Florida Sports Writers Association upon his retirement.

In his retirement years, George became an Amateur Historian, researching the history of Cyrus Field and remaining active in the Morse Telegraph Club, an association of retired railroad and commercial telegraph operators, telegraph industry employees, historians, radio operators and others with an interest in telegraph history.

The story of George Hack lives on in the historical archive of the Morse Telegraph Club. In some ways, it tells the story of 20th Century America as embodied in the life of a young man. It speaks to an era when men were often loyal to a good employer and that same employer honored its social contract and commitment to its employees.

While it's impossible to return to such an era, it may be wise to examine the value system of the time and consider the importance of the social contract and the loyalty it engendered. Perhaps there are lessons contained therein, which are applicable today.

Certainly, like all aspects of the human condition, those long passed experiences of prior generations were not two dimensional nor will they be fully understood by those of us who didn't experience them.
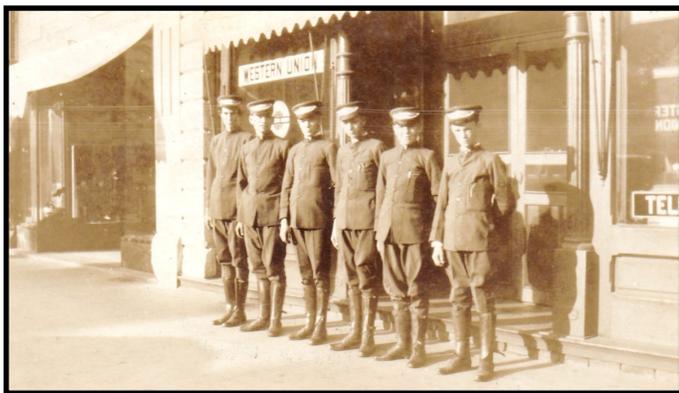
Western Union Telegraph Company messengers at Hutchinson, Kansas, c. 1920s. George Hack, Manager. Photo courtesy of Morse Telegraph Club, Inc. All rights reserved.

Did you know that the "ES" often heard in Amateur Radio conversations is actually the ampersand in the American Morse Code? In the American Morse Code, the "&" is a character with an internal space; a slight hesitation between the "dit" and the "di-di-dit."

"We Don't Handle 'Spam' Traffic!"
– A Story of the Westphalia Section –
By James Wades, WB8SIW

As everyone knows, there is no "Westphalia Section." The name is a pseudonym designed to protect the subject of this article; an ARRL section operating somewhere on the vast North American Continent. The story is absolutely true, but the names and locations have been changed to protect the innocent (or perhaps not-so-innocent).

This story begins on December 31, 2014 with the transmission of a radiogram as follows (with some data changed to maintain anonymity):

> *252 R WB8SIW 22 MARION IL DEC 31*
> *BILL D CARR*
> *5652 APPLEWOOD DR*
> *TYSON WESTPHALIA   55555*
> *555-555-555*
> *ZZ0C@*********.NET*
>
> *THANK YOU FOR RENEWING YOUR MEMBERSHIP IN THE MORSE TELEGRAPH CLUB X OUR BEST WISHES FOR A HAPPY NEW YEAR X 73*
>
> *JAMES WADES*
> *INTERNATIONAL PRESIDENT*

On the very same radio day, a service message stating "no outlet" was originated at the region level:

> *391 R N22CCC ARL6 CLINTON WESTPHALIA DEC 31*
> *WB8SIW*
>
> *ARL SIXTY SEVEN 252 NO OUTLET 73*
>
> *STEVE*

A review of the records seemed to indicate that there was likely no attempt to find an outlet for the original message. As a matter of fact, it appears that the message was actually serviced back when it reached the region net level, having never made it to the "Westphalia" Section. This, of course, raised a red flag with the author. Subsequent inquiries made to others in the NTS community indicated that they too had experienced similar problems when originating traffic to the "Westphalia" Section. Messages were essentially being turned back at the state line.

Because of this and other reported incidents of a similar nature, inquiries were made to the Westphalia Section Manager. His reply revealed that the Section did indeed have an *unwritten* policy of not delivering what he called "spam traffic." This policy therefore begs several questions:

- What is "spam" traffic?

- Who determines if a message is "spam" traffic?

- Are there any standardized, written policies in place that provide guidance for determining whether or not an incoming message is to be classified as "spam?"

- Is there a list of banned "stations of origin," or a similar objective tool developed by a committee or other governing body within NTS, which can be used to limit access to the Westphalia nets?

Now, let's examine some of the background surrounding the author's original message, which was the catalyst for this inquiry and which was blacklisted as "spam traffic:"

- The message was originated on behalf of a 70-year old, highly respected organization composed primarily of retired professionals once employed in the telecommunications field.

- The radiogram was originated in direct response to the actions of the addressee (renewing his membership).

- The radiogram was originated by someone known to the addressee (the president of the association).

- *The data used for the address was less than two weeks old*, having been provided by the addressee in writing via post along with a written authorization allowing the use of his address, telephone and e-mail.

Unlike most so-called "spam" traffic, the radiogram was not generated anonymously from a database. Unlike some so-called "spam" traffic, there is little likelihood that the addressee died in the two weeks between the date of his most recent correspondence with the originator and the date the radiogram was originated. Unlike some so-called "spam" traffic, the originator is known to the addressee and they both share a membership in a respected organization. Therefore, one must ask:

- **Was the original message "spam?" Was the aforementioned message worthy of the courtesy of a delivery?**

Simply put, someone made a determination that the above radiogram was "spam" and took it upon himself to short-stop the radiogram. He acted not on the basis of any objective standard (because absolutely none exists). Instead, he acted on guesswork and personal opinion. While the region representative gets a point for at least originating a service message, as opposed to dropping the message in the circular file, the fact remains that someone acted in an arbitrary and capricious manner. Furthermore, the statement that the message was not delivered because "no outlet" exists is a bit of a "half-truth," since, in

reality, the message was rejected for arbitrary reasons. Perhaps someone takes the same view of "spam traffic" as the former US Supreme Court Justice Potter Stewart once took of pornography; having once famously said in reference to a case, "I know it when I see it." Apparently, someone knows spam when he sees it.

As a result of this situation and other reports from around the United States, a series of questions were directed to the Section Manager of Westphalia, who was kind enough to respond. In particular, he was asked if there were any *written* policies or procedures for determining whether or not a message was "spam." The answer, of course, was "no." However, he did state that "there are traffic handlers in [Westphalia] but NO "SPAM" handlers (emphasis that of the Section Manager)."

The Section Manager also pointed out that the only functional net in the Westphalia Section is an independent net, which has "de-affiliated" with NTS. According to section officials, this net operates under the following policy: "Traffic outlets into [Westphalia] are available. SPAM outlets are not." However, such a response still begs that all important question at the center of the situation:

- **Who defines what constitutes a "SPAM" message and by what authority does he do so?**

Setting aside our rhetorical question; the situation in Westphalia is instructive in a variety of ways:

- *This situation illustrates the corrosive impact of years of poorly managed bulk traffic originations*. The careless origination of bulk traffic using obsolete information culled from old databases and addressed to individuals with no logical connection to the originator has apparently done much to demoralize the Westphalia Section. This possibly caused one net to fold and it has been sufficient to cause the only functioning net in Westphalia to disassociate from the NTS.

- While the motivations of some in Westphalia may be the result of frustration with the status quo, *the fact remains that such unilateral actions, particularly when devoid of objective standards, are ultimately destructive to NTS*. After all; NTS is a nationwide system. What happens in one section affects all other sections. As can be seen in the above example, even fairly innocuous traffic can be caught up in an *arbitrary* dragnet simply because, in someone's opinion, it *appears* similar to SPAM traffic.

- Certainly the Westphalia Section Manager has chosen not to get involved. In our correspondence, he likened NTS to the "Pony Express." One can't help but infer from such a comment that he sees no value in the program. It seems likely that without supportive leadership there is likely little incentive for anyone to seek a constructive solution

to the problem. It is also easy to rationalize such systemic degradation by suggesting that other alternatives are available, but one can't deny that the lack of consistent NTS liaison at the section-level removes one more volunteer resource from that section's EMCOMM capabilities.

Some of the comments received from others in the Westphalia Section are reflective of broader concerns facing Amateur Radio. One operator, who claimed to be a former active NTS member, suggested that NTS no longer makes sense in an era of the Internet and toll-free long-distance calling.

- *"In this age of Winlink, robust commercial messaging and cell systems, etc., we must face the fact that things have changed. Yes, we need to be there as an ultimate backup, but I'm not sure practicing with thousands of messages about someone's club membership is the way to do it. Maybe we should be honest and just run a bunch of practice messages through the digital pipe that say "for practice only - delivery not needed".*

Comments such as these are instructive in many ways. For example, a degree of irrationality is present in this very statement. On one hand, the operator recognizes the need for an "ultimate backup," but on the other hand, he declares NTS obsolete. Perhaps some radio amateurs are having a hard time determining their place in a rapidly changing technological world. For some, confronting today's rapidly evolving commercial communications services may feel a bit like a fall from grace after so many decades during which Amateur Radio was at the forefront of technology.

Such comments also reveal the tendency of individuals to make broad, leaping assumptions in a culture that has lost the capacity for rational and reasoned debate. Consider the reference to "*thousands of messages about someone's club membership* [pushed through] *the digital pipe*" Now compare this absolutely baseless assumption to the real <u>facts</u> about the original messages transmitted on behalf of the Morse Telegraph Club:

- The total number of messages originated was less than 150 originated over a month long period.

- No more than six to eight messages were ever originated on a single day.

- All of the messages were originated via CW, having been transmitted by the author, by hand, using his ancient Vibroplex bug from 1925. They were <u>not</u> "dumped" as batch files into the NTSD (the digital "pipe").

Based on the FACTS (which no one apparently bothered to collect before forming an opinion), the honest, rational man would therefore conclude that six or eight messages spread across 50 states on any single day is hardly going to be an overwhelming burden for any one ARRL section.

Such comments also illustrate a degree of narrow thinking that is impacting Amateur Radio. Critics of NTS often fail to see the training value of the manual mode nets. They fail to grasp the fact that NTS is a pool of volunteers like themselves, all of whom are capable of adapting to different situations to solve communications problems. Instead, they see NTS as a monolithic system that is somehow in competition with cellular providers, the Internet and the phone company. Of course, by that measure, ARES, contesting and every other operating activity is also obsolete and has probably been obsolete since the first radio amateur went on-air. In reality, no Amateur Radio operating activity or organization has ever offered the capabilities and quality of service rendered by commercial common carriers at any time in our history. Amateur Radio only becomes relevant in this context when the decentralized and survivable nature of ARES and NTS are applied to the occasional disaster situation.

Some also seem to suffer from a certain deficit of imagination. They fail to see the potential value in the public outreach and education that can occur with each *properly* conducted routine radiogram delivery. Whether delivery is made via telephone, post office or e-mail, every contact, either with a fellow radio amateur or a member of the general public, is an opportunity to educate that person about our diverse emergency preparedness role. When messages are delivered, they serve to create connections within the Amateur Radio community at the local level, thereby strengthening the fraternal "glue" that binds radio amateurs together.

In summary, we shouldn't ignore the situation taking place in Westphalia. It highlights a complex problem influenced by a rapidly changing technological world, in which individuals respond in vastly different and sometimes very irrational ways. It also reflects a coarsening cultural environment in which individuals form opinions based on broad assumptions instead of facts and in which our society has lost respect for research and reasoned debate. Most importantly, the Westphalia Section problem sends a loud and clear message that NTS leadership can't bury its head in the sand and ignore such localized problems before they become malignant and develop into a cancer capable of destroying the entire organism. Rather, we must meet such challenges head-on.

Ultimately, the story of Westphalia is a complex story with neither heroes nor villains. However, if constructive criticism applies, there is one "take home" message that seems very appropriate:

- **Unilateral actions taken by a group of individuals or an individual ARRL Section are usually ineffective at best and potentially destructive at worst; particularly when they affect surrounding sections or national systems. Our actions should reflect a spirit of cooperation centered on consistent, system-wide solutions. Only by doing so can we maintain and enhance an effective nationwide messaging system.**

In other words....Let's not act on our own as individuals or sections, but instead work with each other to guide NTS into the 21st Century.

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The "Break Key"
By James Wades, WB8SIW
– Story inspired by J. Chris Hausler –

Some months ago, a radio amateur on one of the e-mail reflectors complained about the presence of the circuit closer on telegraph keys. He stated that whenever he encountered a key with a circuit closer, the first thing he did was remove it and throw it in the trash.

Contrary to popular belief, older telegraph keys do not incorporate the circuit closer switch to allow one to tune-up a ham transmitter. It was not included as an affectation. Rather, it was an essential component required for any key utilized for Morse telegraphy.

Commercial and railroad telegraph ("land-line Morse") circuits in North America operate on a normally closed principle. When no communications is being conducted, all keys in the circuit must be closed (shorted). In this standby condition, current is continuously flowing through the circuit. When an operator at an office wants to transmit, he opens his key and makes his call. The relays and sounders then respond accordingly, reproducing his Morse Code.

If the receiving operator misses a word or group in a message, he opens his key, thereby "breaking" the normally closed circuit. The transmitting operator's sounder then goes silent, indicating that the receiving operator needs a "fill." This is the origin of the familiar word "break" so often used in net and traffic handling procedures.

When teleprinters emerged in the early decades of the 20th Century, they were designed to operate on the traditional normally closed telegraph loops of the day. Of course, teleprinters were also subject to error, and in some ways, they were more susceptible to "garbles" and circuit distortions due to wire faults, voltage fluctuations and other external influences. It was therefore necessary to incorporate the equivalent of a "circuit closer" on teleprinters. Of course, this was labeled the "break" key. By depressing the break key, the receiving operator could open the circuit and signal a transmitting operator or an attendant (in automated systems, such as reperforator centers) that an error had occurred.

When the first mainframe computers emerged, commercially available teleprinters were initially utilized to remotely connect to the mainframe. The break key continued to serve its purpose in early computing by allowing a remote user to interrupt a program in the event of an error. The original baudot teleprinters used for mainframe computing eventually progressed to more versatile ASCII teleprinters and, eventually, the PC emerged......yet the break key remained.

The odds are that many of our subscribers are reading this article on a PC. If you are, take a quick look at your keyboard and locate the "break" key (sometimes labeled "pause"); then, consider the fact that this key is the direct descendent of the circuit closer used on the telegraph key of the commercial and railroad telegrapher. Here we are, well into the 21st century, and this most basic artifact of the first, true revolution in telecommunications survives intact on quite a few of our modern computers.

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Are NTS Volunteers an Underutilized Resource?
By James Wades, WB8SIW

How often have you observed an ARES group create yet another net, with its associated overhead in the form of net controls and liaison stations when, at the same time, there are often dozens of NTS volunteers with a ready-made network waiting on the sidelines with the skills needed to assist in time of emergency.

Obviously, there are activities for which the NTS network is ill-suited. Yet, it seems that in areas where healthy section and local nets exist, such volunteer resources could be used for a variety of tasks that do not require "boots on the ground" in the form of valuable local ARES volunteers. Consider:

- NTS networks could provide Inter-county communications between several jurisdictions. This would free-up more local ARES members to provide flexible and dynamic on-scene connectivity in the field where a disaster is occurring.

- NTS networks could provide "last-mile" connectivity from the field, when additional circuit capacity is needed, thereby freeing up VHF or UHF nets to more efficiently manage the tactical communications to which they are well suited.

- HF or VHF radio could be used to connect to a NTS net, when it is necessary to originate served agency traffic from the field. Most disasters are limited in geographical scope, meaning that a section net is likely to have a number of NTS volunteers present who retain working telephone and data communication, allowing them to facilitate the delivery of messages to served agencies via normal means.

- NTS volunteers could also serve as a pool of trained communicators for other tasks, such as conducting research, accessing on-line databases and so forth, from quiet areas unaffected by the stress of disaster operations. After all, there is no rule to say that a cadre of volunteers must be limited to one type (record message format) of communications.

It seems a shame that in many disaster situations, the idea of leveraging the manpower and skills of a large number of trained volunteers within reasonable communications distance is often overlooked. Imagine your ARES group being able to multiply its manpower by taking advantage of a pool of individuals on the other end of a radio circuit, all of whom have solid experience with net procedures and record keeping, and many of whom are able to access working telecommunications common-carrier systems, to effect message origination and delivery to and from the field. If one is open-minded, it seems reasonable that such a cadre of individuals could be viewed as an additional volunteer resource capable of supporting field operations by providing "last mile" connectivity, while minimizing administrative overhead and freeing-up local volunteers to support operations in the field.

By building a relationship between ARES and NTS and by discussing unique and innovative ways in which NTS volunteers can support ARES, not just with traffic handling skills, but in terms of basic communications support, one could likely improve the efficiency of ARES immensely.

I suspect that few ECs give NTS volunteers any thought. This oversight is not an attempt to exclude NTS; rather, some simply don't step outside the box to challenge long-held perspectives. *They view NTS as an inanimate "system," instead of viewing NTS as a group of trained volunteers with useful skills and the same adaptability that is shared by many radio amateurs, and which is so often of benefit in time of emergency.*

The same assumption often applies to individual radio amateurs who require emergency communications services. When one finds his community without access to the familiar cellular data networks or land-line telephone service in the initial hours after a tornado or earthquake, many individual radio amateurs turn first to the comfortable and familiar VHF ARES nets for basic messaging service, which, rightfully, are concentrating on systematically supporting local emergency management and relief agency response. Instead, a better option may be to consider utilizing the resources of NTS volunteers for getting basic messaging out of the area for unique agency requirements or for one's family and neighbors.

Consider these facts:

- NTS offers a ready-made infrastructure that is easy to access from any location in North America.

- NTS nets use CW, SSB, FM or digital methods.

- Manual mode NTS nets are in session at many times throughout the day, every day of the year, including holidays.

- NTSD (NTS-Digital) is available 24-hours per day using PACTOR.

- The same equipment that is used for NTSD can also be used for WinLink2000.

All of these resources are quite accessible via HF radio. With today's modern telecommunications services, it doesn't matter where the radio amateur at the other end of the circuit is located provided he has a method to deliver the traffic. The "last mile of connectivity" can be one mile in length or 2400 miles in length. Thanks to today's toll-free long-distance calling and Internet capabilities, one can access any NTS net within "earshot" and originate welfare, priority or even emergency traffic for rapid delivery from anywhere in North America. In addition, by choosing a NTS net for support, one has a reasonable assurance that most of those on the net have the basic communications skills needed to accurately transfer third-party traffic.

As stated earlier, let's get out of the rut of viewing NTS as a "system" and instead, let's view NTS as a volunteer resource that happens to maintain a system of automated and manual radio networks. With this change in perspective, we can step outside the box and use these volunteers *to our advantage in time of emergency.*

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The Image We Present
By James Wades, WB8SIW

Whether it's based in a survival instinct or the result of genetic evolution, we live in a society that places a premium on appearance. Let's face it; we all tend to judge individuals by appearance to one extent or another.

Some years ago, I was assigned to a check-point during a public service event. The organizers had assigned another radio amateur to partner with me. When I picked him up at his house, I knew something was wrong. He was dressed in a filthy old pair of sweats, which clearly hadn't been washed in months. His odor was so overwhelming, I had to drive (in late winter), with the windows partially open to keep fresh air circulating in the car. Worse, yet, he was so overweight, his filthy sweat pants and sweat shirt failed to cover his enormous belly, thereby adding a visual dimension to the assault on one's sensibilities.

During the event, it was obvious that both public safety and race officials were avoiding us. I must admit that I felt a degree of embarrassment through association. Nonetheless, I worked through the odor and nausea, and finally drove him home at the end of the day. Unfortunately, his odor had become so embedded in the cloth of my vehicle passenger seat, I had to take the car to a special detailing shop to have the seat steam cleaned!

I may never know what happened in that individual's life to lead him to such a state. However, the reality is that he did not represent Amateur Radio well. Whether it's fair or not, Amateur Radio was likely judged more by his appearance than

it was by his competency.

The other end of the spectrum….

On another occasion, I visited a large urban ARES group that had managed to push the proverbial pendulum to the opposite side. I was shocked to find the ARES leadership staff dressed in standard, military issue BDUs, complete with bloused combat boots and "delta team" insignia on their shoulders. There were no "clean sleeve soldiers" in that bunch! I couldn't help but feel that these individuals were way over the top and perhaps trying to "pose" as something they were not. Their appearance sent the message (whether intended or not) that their motivation might have had less to do with altruism and a desire for community service, and far more to do with a need to boost their individual egos. Whether this assessment was fair or not, I can't say, but it was how I *felt* at the time. I also couldn't help but wonder if the public safety officials with whom they worked were also uncomfortable with their "over the top" appearance.

In practice, a reasonable balance can likely be found in the same manner we approach our appearance at work. While we all seek a degree of comfort in our manner of dress, we also recognize that our appearance and the condition of the "tools of our trade" should reflect a certain pride and professionalism. As with business attire, the manner in which an ARES member dresses will be situational, but it should *always* reflect a degree of pride and professionalism appropriate to our task and befitting the agencies with which we work.

When ARES or NTS volunteers are present in an office environment, such as an emergency operations center, public safety facility, or similar location, business casual attire is often a good choice. Clothing should be neat, clean and professional. A proper polo shirt or button down business shirt, combined with a pair of casual trousers or nice blue jeans is likely more than sufficient for most of these situations. It also goes without saying that one should be properly groomed and clean.

In the field, one is likely to encounter situations, which demand far more flexibility. Nonetheless, it is important for public safety official to be able to differentiate the authorized volunteer from someone walking off the street. Some may poke fun at the ubiquitous "safety vests" worn like a uniform by many ARES groups, but such accessories can play an important role. They allow public safety officials to quickly locate ARES volunteers and they simplify scene security, by preventing someone from off the street from easily entering the perimeter at an incident and blending in with other volunteers dressed in casual attire.

There is certainly nothing to prevent an ARES group from adopting some "uniform" type items. For example, the ARRL on-line store offers some excellent ARRL and ARES logo merchandise via their web page. In addition to the usual "safety vests," such items could certainly be considered as "standard issue" when ARES members are active in the field.

The ARES logo can certainly be incorporated into other items, such

as long-sleeve shirts and even seasonal jackets, which can be embroidered by a third party vendor. Please keep in mind, however, that the ARES and NTS logos are protected by copyright and should only be used by an authorized ARES program. Likewise, to be fair to the League, one shouldn't "compete" with the League's on-line store by duplicating already available items.

On occasion, certain leadership officials must attend professional conferences representing ARES, RACES or NTS. If one must attend such conferences, he should probably dress and act in the same manner any professional would at a trade show. One should dress a step *above* business casual attire if he is staffing an exhibit, speaking on behalf of the field organization, or playing a role in committee meetings. A suit and/or tie may even be appropriate in some of these latter circumstances.

Of course, as evidenced by the prior example of the "BDU team," one probably won't get too far with the ARES membership if one starts to dictate a specific uniform or a highly restrictive dress-code. Rather, the goal should be to encourage ARES members to exercise common sense. This is most easily accomplished by establishing a dialogue with membership about what attire is appropriate and what is not. One should avoid dogmatic actions, which tend to "turn-off" volunteers.

While on the subject of appearances, it may also be wise to consider how the condition of our equipment affects our image. Undoubtedly, some have seen the web page entitled "Ham Sexy" on which they poke fun at some of the more outrageous examples of over-the-top Amateur Radio vehicles. Here, one will find examples of cars equipped with strobe lights and sirens as well as vehicles bristling with antennas and dozens of radios, or vehicles in which radios are ineptly installed or mounted in dangerous locations. Such unprofessional installations do not inspire confidence in our served agencies.

Have you ever attended an amateur radio demonstration or arrived at an emergency deployment location only to discover that cables are "scotch-taped" together, clip leads are dangling everywhere, and the equipment is teetering on a rickety card table, which is about to fall over? Does such a display inspire a served agency or the public to learn more about ham radio, or does such a display yell; "Hey! Look at the crazy geek!"

Obviously, an ARES group can't dictate what "proper equipment" arrangements are in the field. However, it is important for the ARES member to consider that his equipment should appear professional and his deployment approach should be well organized. This will do much to inspire confidence on the part of our "customers" and allow the volunteer to start a relationship with those he serves on the right foot. This is not to say that the equipment should appear overly complicated or "high-tech." Rather, a simple approach centered on an efficient, modular, easily deployed

arrangement is all that is required.

Having our field deployment equipment properly organized and arranged in a modular format will also do much to prevent failure in the field. All too often, radio amateurs show up at a field location only to realize they forgot an essential RF adapter, an important interface cable or the like. By arranging and staging equipment properly, operational delays can be minimized, the equipment and operator appear more professional, and one need not overcome any negative "first impressions" that might arise in the field when gear doesn't operate properly from the outset. Furthermore, by standardizing on common RF and DC connectors, interface cables, CW key arrangements and the like, an ARES group can do much to facilitate equipment changes in the field.

Every ARES group should dedicate a meeting to discussing the issue of a dress code and professional appearance. Such issues should also be incorporated into every new member orientation (you are conducting new member orientations, aren't you?). Additionally, as discussed elsewhere, periodic field deployment drills can do much to encourage members to develop a modular, organized approach to establishing communications in the field.

Ultimately, concerns about appearance need not be divisive or onerous. All that is necessary is to encourage your ARES membership to shift their perspective and imagine how they are viewed by the agencies they serve and the general public. In doing so, most members will quickly arrive at an appropriate conclusion regarding what constitutes a "professional appearance" when they report to either the office environment or a deployment location in the field.

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NTS Logo Items Available

Just a quick reminder that the ARRL was kind enough to add several NTS logo items to their on-line store, at the request of NTS members. Please show your support of NTS and your appreciation of the ARRL by visiting www.arrl.org and ordering one or more of these products.

Is NTS too slow for emergency traffic?
By James Wades, WB8SIW

Some naysayers in Amateur Radio often argue that NTS is too slow to be effective in time of emergency. This argument is an excellent example of "hasty generalization."

Under normal conditions (non-emergency situation), NTS is slow by modern commercial standards. It may take several hours for a routine radiogram to propagate through the system of sequential,

layered networks that comprise the manual NTS. The newer parallel "NTSD" ("National Traffic System Digital") network eliminates many of these delays through an automatic digital network using PACTOR, but it obviously can't compete with the Internet or public switched telephone network.

Yet, most significant delays associated with radiogram delivery arise when a volunteer is unavailable to clear a message for delivery into a specific local area. Under such conditions, the message may then be held at the region or section level for up to 48-hours before an outlet can be located. These later delays have less to do with network architecture and far more to do with a lack of support for NTS by the broader Amateur Radio community. In other words, many delays to NTS traffic are the result of a "volunteer problem."

The aforementioned "hasty generalization" in many of the negative assessments of NTS is often based on the observation of these delivery delays. Instead of blaming a lack of volunteer resources for the most glaring network inefficiencies, critics find it far easier to blame something called "the system." By doing so, the critic can disassociate himself from any personal responsibility for his own unwillingness to contribute to the success of the program.

Another fallacy lies in the belief that NTS policy is so rigid, that all traffic, regardless of priority (importance), must be pushed through the entire system of layered networks. Some assume that the system of layered nets, which is well suited to *routine* radiogram traffic must be rigidly maintained for all classifications of traffic. *This simply isn't true!*

In reality, NTS management and individual operators are at liberty to respond dynamically to unique, emergency situations. By definition, routine traffic is NOT time sensitive, whereas message traffic of a higher priority would likely be very time sensitive. How many NTS operators do you think would force a priority message on behalf of a served agency entirely through the NTS cycle when obvious alternative routings or more flexible commercial communications options exist to expedite delivery? Wouldn't the thinking man or woman get the traffic off of the NTS network at the first working telephone or Internet connection to facilitate timely delivery? Of course they would! Just like any intelligent radio amateur, NTS volunteers are adaptable and oriented to problem solving. Yes! We do have opposable thumbs!

NTS operators and net managers are also empowered to set up special routings or even specialized point-to-point circuits to facilitate high volumes of message traffic. For example, at the section level, NTS might provide a link between a State EOC and a local EOC located in a disaster area via a specialized point-to-point circuit. At the region level, a network might support a link between several EOCs and a regional facility, such as a government or NGO regional or national headquarters.

The author experienced an example of this NTS adaptability

some years ago when he found himself providing local ARES support during a tornado in Southern Indiana. While we were handling local VHF communications for served agencies, a number of citizens approached us with requests to originate Health and Welfare Traffic (cell phones were inoperative). I quickly tossed a wire up in a nearby tree, set up a HF QRP transceiver, located a region traffic net in progress, explained the situation and originated the traffic. The welfare traffic was delivered and replies were received within minutes via 80-meter CW. Everyone was impressed with the service provided by NTS. In this case, the NTS operators involved were *adaptable*. They recognized the importance of the traffic and delivered it from the first working telephone, thereby providing first-rate service for a stricken community. They did not push it through a "cycle."

In another incident, a QMN Net member was driving through an area of tornado damage while conducting damage assessment with his county emergency management director. The official was required to originate a "Flash Report" to the Michigan State Police Operations Center at Lansing, Michigan. The radio amateur transmitted the traffic to the author on 40-meter CW, which was copied using a mill onto a special 8.5 x 11 message blank. The "Flash Report" was then faxed to MSP operations complete with all of the necessary service information. The entire process took minutes and State Police received a professional grade, fully serviced multi-part report of good quality. No one waited for a net to start. No one forced the message through a "net cycle." It got off at the first working phone line. The value of the process rested with the decentralized nature of Amateur Radio providing the last mile of connectivity, combined with the standardized procedures and accountability provided by NTS methods and the radiogram format. The customer didn't care how the message was transmitted. He measured the service by the quality of the product <u>delivered</u>. What he saw was a high-quality product that met all of their professional requirements.

One might be tempted to ask, "if the sequence of layered nets aren't essential to every emergency, why does NTS maintain the system of layered nets at all?

There are several answers to this question.

- The system of layered nets, both manual and automated (NTSD), are ideal for moving routine traffic throughout the country in a systematic fashion. Additionally, the fact that NTS networks do not rely on vulnerable infrastructure ensures that the entire system can remain operational even under the worst case scenario.

- Daily, manual nets provide volunteers with excellent *training* combined with a fun, challenging operating experience, which is far more diverse than contesting or "cookie-cutter" contacts. Even the much maligned "bulk traffic" familiarizes NTS volunteers with the correct message format, standardized net procedures, and provides experience

transmitting variable text and data accurately under all operating conditions.

- The layered nets, if properly implemented and staffed, are quite capable of transmitting welfare traffic across country in a reasonably timely fashion, provided delivery at the section (destination) level is widespread and effective. With proper ARES liaison encouraged throughout the Country, the delays associated with the delivery of all classes of traffic could likely be minimized to an acceptable level.

Finally, NTS does not operate in a vacuum. The same knowledge base, adaptability and experience that is typical of the general Amateur Radio population or the average ARES member also exists within the NTS community. However, the NTS volunteer has the communications training needed to convey accountable, third-party message traffic in time of emergency, a skill that is lacking in many organizations that advertise themselves as an "EMCOMM service."

In conclusion, EMCOMM volunteers or casual observers should not operate on the assumption that NTS is inflexible, nor should they assume NTS is incapable of facilitating the rapid disposition of important communications traffic. NTS members are quite capable of implementing flexible, dynamic solutions to expedite the flow of message traffic. Best of all, the radiogram format in retains validity by associating network routing and accountability data with important message content in time of emergency. Most importantly, any NTS net is capable of providing that "last mile" of connectivity in time of emergency.

When one hears radio amateurs saying they see no purpose in NTS participation, they are really saying they do not wish to invest the time needed to ensure they are fully trained to provide effective emergency communications to served agencies. That is their choice, but it is unfair to blame a "system" when inefficiencies are introduced by a lack of *volunteer* support.

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Automated Digital "Interference" ...Some personal thoughts… By James Wades, WB8SIW

The recent RM-11708 "Symbol Rate" Petition filed by the ARRL, as well as the recommended changes to the band-plan generated a flurry of discussions for a time on the various Amateur Radio web pages and e-mail lists. A few of the comments expressed seemed to give the impression that the automated "WinLink" stations are running amok causing interference on the bands.

Before I offer an opinion in response to such comments, it is important to provide full disclosure. Please note the following:

1. I am primarily a CW operator. Approximately 90-percent of my operating is in the CW sub-bands, which share part of their spectrum with automated digital modes.

2. I am active on CW traffic nets, some of which operate close to the areas in which WinLink and NTSD automated digital stations are active.

3. I have used NTSD and WinLink and might therefore be viewed as a proponent of the systems.

Now that these three statements are out of the way, I would like to offer my perspective on the claims of "interference" from automated digital stations. Simply put….in my experience; interference from automated digital stations has rarely affected my day-to-day operation.

Personally, I have found the WinLink and NTSD organizations to be good citizens. They consume a very limited amount of spectrum. They utilize common, fixed frequencies built on a predictable pattern. They do their best to locate their networks away from popular portions of the spectrum in which DXing, contesting and routine conversations occur.

During my four decades of activity in the Amateur Radio Service, I can barely recall having experienced interference from an automated digital station. Furthermore, I can't recall having observed it. This is not to say that the occasional conflict doesn't occur. Any time multiple users share a slice of RF spectrum, one will experience occasional conflicts, most of which are unintentional in nature. However, it seems to me that most of the co-channel interference I have observed has been between those operating "manual," as opposed to "automated," modes.

While my intent is not to divert this editorial into a debate about contesting; I would nonetheless challenge those who apparently disdain WinLink and similar automated digital networks to compare and contrast the footprint of these automated systems with the footprint of contesting. During my 40-years of operating, I have been stepped-on, trounced-on, and pushed around by contesters and DX hounds, many of whom believe the "rare one" or a few additional points trumps courtesy and negates the requirement to respect a QSO already in progress.

An examination of the contest calendars widely available on the web show that many weekends are consumed by not just one, but sometimes up to three or four contests! Furthermore, there are new contests, sprints and similar activities being added to the contest calendar every year, and absolutely no International body exists to mitigate scheduling conflicts between these contests, nor is an attempt made to harmonize their scheduling with other general operating interests.

It seems to me that some who oppose WinLink are searching for

a straw man. If one doubts this, simply try to get on 40-meter CW during one of the several RTTY contests that take place each year! Some RTTY operators seem to ignore existing CW QSOs, and each of these stations is operated by a human being who has the ability to exercise discretion and respect existing users. Yet, a few do not and these few can prove VERY disruptive. As a matter of fact, I am willing to bet that far more RTTY contesters cause interference to existing QSOs during a single event than automated WinLink stations do during an entire year.

All of this is a round-about way of suggesting that before one jumps to a conclusion about a FCC proposal or band plan revision, he or she should make an honest attempt to collect facts. Furthermore, if one wishes to apply a standard to his neighbor, he should also apply it to himself and his own operating interest I therefore challenge those vocal opponents of WinLink or those who express concerns about the occupied bandwidth of automated digital stations to catch their breath and apply some logic to the issue. I suspect they will realize that the supporters of WL2K and related programs exercise good operating practice overall.

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Every ARES organization should consider knowledge of the ITU (ICAO) phonetic alphabet a core competency of EVERY ARES member. The ability to properly spell a chemical name, a complex medical term or specialized acronym is a requirement on both tactical as well as record message traffic circuits. A common phonetic alphabet is essential to accuracy!

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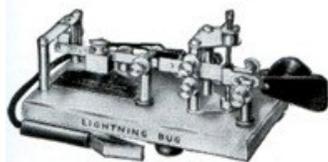
Effective Voice Net Procedures

Voice nets remain one of the essential common denominator methods of conveying both tactical and record message traffic within ARES and NTS. Here are some tips for effective radiotelephone communications:

- Use the correct ITU phonetic alphabet.

- Eliminate all unnecessary language. Phrases such as "amateur call," "phone with area code," "zip code," and the like, place significant demands on circuit capacity, particularly in emergency situations.

- When transmitting a radiogram message, imagine yourself transcribing the message as you transmit. This will help you pace your transmission speed in such a way that the receiving operator can copy the message without error.

- When calling a transmitting station to receive traffic, indicate his readability. This will cue him in such a way that he can slow his transmission speed, increase the use of phonetics or take other steps to ensure full copy the first time around. Proper indications of readability include standard phrases such as "loud and clear," "good readable," "fair readable," "weak readable," and "unreadable." For example, "this is, WB8SIW, good readable, ready to copy, over."

- Use the prowords "over" and "out" effectively. When used properly, these can eliminate considerable unnecessary language, thereby preserving circuit capacity for additional message traffic.

- Out means "out." It's the equivalent of hanging up the phone. No response is expected. It also indicates that one has surrendered the radio circuit to either NCS (default), or to those stations that have been directed by NCS to exchange traffic.

PORTABLE OPERATION

Spring is here and summer is just around the corner. Now is a good time to check out one's portable equipment. It's also a good time to consider conducting some field deployment drills, either as an ARES group, NTS net or as an individual.

Radiating a "traffic quality" signal in the field is far more difficult than achieving random QSOs. In an ARES or NTS disaster operation, one must often establish communications with specific stations, over specific distances at less than favorable times. One doesn't have the luxury to communicate only with those stations, which propagation favors.

A great way to determine if your portable station generates a "traffic quality" signal is by setting up in the field and originating one or two messages via your section traffic net. This closely simulates the "real thing." One is not just exchanging predictable content in the form of "RST," "QTH" and "name." Rather, one must have a portable configuration, which is efficient enough to originate a more complex message with variable (unpredictable) content in the form of the preamble, address, text and signature. This is a far better measure of one's ability to actually establish reliable communications in time of emergency.

One may quickly learn that the antenna, which works well for random low-power QSOs is insufficient for public service communications. One may likewise discover that his portable station is best suited to narrow-bandwidth modes, such as CW or data. It's a great way to learn these lessons.

Why not give it a try this summer?