

TELEPHONE COMPANY TELEGRAPHY?

Pick up a book covering telecommunications history and one will often obtain the impression that technology is mutually exclusive. For example, people are always shocked to hear that Morse telegraphy was still in commercial service into the 1980s.

People are often shocked to hear that the telephone did not render the telegraph obsolete. The phone company was a major user of telegraphy, providing not just circuits for “private wire” services, but also for its own use.



THEY LAST -- Telegraph keys and sounders are still manufactured by Western Electric in small numbers for special tests and service functions. Their design has hardly changed since 1915.
PHOTO WC-124 -- WESTERN ELECTRIC NEWS FEATURES -- April 1968

In the era before microwave carrier, copper long-distance circuits were very valuable commodities. AT&T “composited” telegraph circuits onto long-distance voice circuits, allowing the latter to remain in revenue service while internal company communications was conducted in the background using the old reliable telegraph key and sounder. As late as the 1950s, new hires in the long-lines department were required to learn the American Morse Code and practice telegraphy!
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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.

Telephone Company Telegraphy

(continued from front page)

Telegraphy also offered significant economies of scale. Wire and cable in the outside plant environment is one of the major cost factors for a telecommunications common carrier. Before the Internet era, telegraphy offered significant multiplexing advantages. Carrier systems, concentrator circuits and similar technologies facilitated very efficient use of wire circuits. Dozens of telegraph circuits could be multiplexed onto a single circuit, which could accommodate only one voice channel.

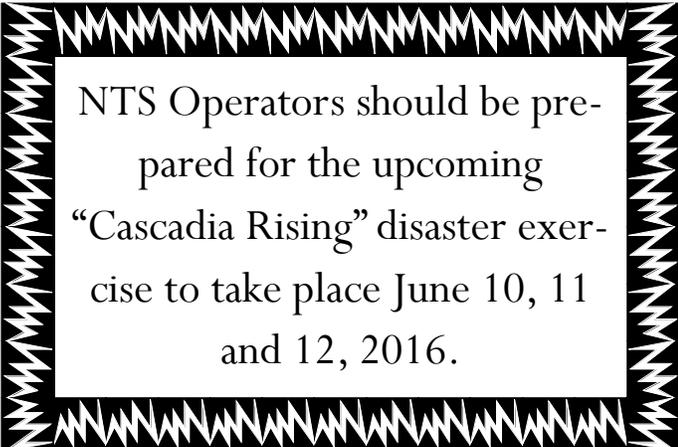
The fact that Western Electric continued to manufacture telegraph instruments into the 1960s (or later) should speak volumes about the long-lived history of telegraphy.

Ham radio operators can also learn something from this history. During the no-code debate of a decade or more ago, it was common to hear young hams and former CB operators seeking a license complain that they shouldn't have to use a "100-year-old" technology. They were off by just a few decades!

Today, tens of thousands of radio amateurs still use International Morse Code, but they often do so using micro-processor controlled radio transceivers with digital signal processing, or even software-defined features. The medium may be telegraphy, but the technology that supports it is decidedly 21st Century.

Telegraphy may be around for many more years. It is simply the ideal hybrid between the natural, spoken language of human beings and the printed world. It translates well into our modern, connected digital era.

Maybe those who say "CW forever" aren't too far from reality!



NTS Operators should be prepared for the upcoming "Cascadia Rising" disaster exercise to take place June 10, 11 and 12, 2016.

When the World Stopped Talking

- The Assassination of JFK -

This first-person account of a momentous day in history has been in my files for many years. Unfortunately, the name of its author is missing. If you know who wrote it (or if you are the author), please let me know and we will ensure credit is given in the next issue of "QNI."

It was the coldest part of the "Cold War," with momentous events leading to that time. America's move toward the "Camelot Years" had seen, in addition to actions on the Civil Rights front, the early period of President John F. Kennedy's term punctuated by events on the International Stage like the following:

April, 1961: The abortive Bay of Pigs invasion

October 1961: The construction of the Berlin Wall

October 1962: The Cuban Missile Crisis

It was the twelve days in October, 1962 that brought America closer to nuclear war than any other event; staring down the barrel of 36 Russian ICBMs in Cuba, with more on the way.

John Kennedy had ended it by forcing Khrushchev to trade those ICBMs aimed at America's underbelly for 15 antiquated Jupiter missiles. That permitted Khrushchev to save some face, but it was obvious both he and the Soviet Bloc worldwide smarted from an obvious loss.

Fidel Castro had his own reasons for wanting to get rid of John Kennedy. Beginning with the Bay of Pigs, Castro had become convinced that a string of plots to unseat him or even assassinate him had been hatched by the government now headed by JFK and heavily dominated by his younger brother, Robert Kennedy, who had taken a very broad scope of powers as Attorney General.

So far as anyone in the communist orbit was concerned, the Kennedys in Washington were certainly a duo sent straight from the very Devil himself. Both were dangerous people and leaders of the most powerful opponent in the World; the one that had produced weapons and power on a scale no previously known on earth. It was obvious that any number of groups wanted not only to stop that power, but to cut off its leadership in hope that the balance of power would somehow equalize.

There were also those in the US government establishment who themselves might be suspected of having their own reasons to stop Kennedy from exerting control over the establishment.

During that time, life at AT&T's Fort Lauderdale Overseas Radio Stations was in a bustling stage of expansion. It was the last burst of expansion before the age of satellites and submarine cables would burst forth to provide transoceanic and intercontinental telecommunications capacity that was to offer a means to knit nations and businesses together in ways no one had yet foreseen. Computers were struggling to push 1200 bps down such circuits as could be provided; teleprocessing was in its infancy, and thus computers couldn't have made much use of the capacity if it had been there. Rather communications between nations were matters of cablegrams, 50-baud Telex and, when possible, badly-delayed, but urgent telephone calls at US \$3.00 per minute, sometimes more [approximately equal to \$ 30.00 per minute today - editor]. Fort Lauderdale was one of the three "plant gateways" that AT&T, operating as the sole long distance telephone company in the US, had for providing telephone circuits to other nations using high-frequency radio. For the user, Fort Lauderdale was known as the "Miami Overseas Operator," located some 25 miles away in the Southern Bell Building in downtown Miami.

Those faceless voices were known on the "inside" as "Overseas Toll Unit 3." Units one and two were located at New York and San Francisco, respectively. Short of the very few channels that the earliest transatlantic telephone cable carried, all international calls were carried on shortwave. The "plant gateways" operated 24-hours per day, seven days a week, working at the task of launching high-powered multi-channel radio waves at ionized layers of the upper atmosphere, and receiving the same from distant stations. As far as the public was concerned, the vast majority had no notion of how their voice was getting to the other country. In fact, the quality of channels provided, even in the solar low years, was good enough that, combined with the rather lossy characteristics of domestic lines, users didn't perceive anything unusual. What many didn't even know was that there was no such thing as a dial circuit on HF radio. The operators wrote "toll tickets" just as had been done since the 1920s, and serial numbered each, exchanging full details with their counterparts in the other country. This allowed each country to have a complete record for billing at the paying end and settling for their respective portion.

Fort Lauderdale provided channels to most of the nations of Central America and the Caribbean, with demand growing at such a rate that more and more channels had to be added. Despite that growth, delays ranging up to three days to get a call completed to some nations were not unusual. In the case of many nations, the called party did not even have a telephone, so it would be necessary to "book" the call in advance, whereupon the telephone company in the other nation would send out a messenger, often on a bicycle, to summon the called party to a telephone booth in order to have their conversation. There would even be extreme cases of a transit call via the US from a European or Asian nation to a Latin Nation, which meant two links of "shortwave" coupled by a connection between Overseas Toll Units across the US. The whole scene was quite a far cry from the convenience of international direct-dialing most people take as a given condition today.

Similarly, the paucity of international telephone channels made it necessary that the historic "hotline" between Washington and Moscow not be a telephone circuit, but rather a teleprinter circuit. Hushed in the highest secrecy, the first hotline was in fact, an encrypted teleprinter circuit operated by ITT World Communications under contract, with classified US encryption equipment located in Washington, D.C. and at the US Embassy in Moscow. For a degree of backup, ITT provided two channels on different routes. One entering the Soviet bloc via Austria and another via Finland. Both carried the signals in parallel, and on occasion, one might carry the transmissions one way, with the other carried the return signals, although both were full duplex channels. The government would never remove the crypto gear, even refusing to send the "Fox" test messages in the clear, which gave ITT personnel fits trying to find the section of the circuit that might have garbling on it. No one along the route was equipped to copy the signals!

This telegraphic hotline was the environment in which JFK negotiated with Khrushchev, writing out messages, having them sent, decrypted at the Moscow Embassy, then hand delivered by courier to Khrushchev. Khrushchev's messages were similarly written out, taken by hand to the Moscow Embassy, then typed in and encrypted for transmission to Washington. Were there a notion of trying to put JFK on the phone with Khrushchev, simply getting the connection might have taken more hours than were available for the more cumbersome means of encrypted teletype.

In this environment, then, the HF radio channels at Fort Lauderdale were constantly occupied, at least during business days. Weekends, evenings, and holidays, there were fewer circuits opened up, but even at night, there was at least one working channel to every distant nation...and the one nighttime circuit was often almost constantly occupied.

November 22, 1963 was just another balmy semi-tropical day at Fort Lauderdale, with routine normal business day traffic and stable solar conditions making all scheduled circuits available and occupied with traffic. After the morning round of taking short breaks in operations to change radio frequencies up to the daytime range of 12 to 18 MHz, things settled down to "patrolling" the circuits, merely watching the speech "volume indicator" meters on each speech terminal and observing that the receiver automatic frequency controls were not drifting off lock, while checking the received distant signals levels to see they were staying within comfortable tolerances. There was an occasional "Pirate of the Caribbean" that might pop-up on a channel here and there to cause interference, thus the order wire circuits from Miami operators would ring from time-to-time requiring our intervention. We would talk to the other end, take the circuit out of traffic use for a while and make a measured guess as to whether it was best to shut down all circuits and change frequency or merely suffer some lost time on one channel of a multi-channel system. But November 22 was like any other day, and even the interference cases tended to be those that showed up for a while and then went away. We'd measure their frequency and other signal characteristics, and identify them if possible to make an observation for filing with the FCC (which reported our findings to the International Frequency Registration Bureau in Geneva).

In the midst of this rather ordinary time of busy circuits, the order wire for my "tour" of circuits rang. I answered it and the Miami operator said, "The technical operator in Guatemala City wants to talk to you on circuit 3." I said "thanks" and plugged a headset into the terminal for Guatemala 3. After some time of working on these circuits, I knew the faceless voice on the other end would be Franco Godoy of Tropical Radio at Guatemala City. I said "Hi Frank, what's up?" It would be typical as part of our ongoing international relations work that a sentence or two of pleasantries would be exchanged, but not this time. Franco just blurted out, "Did you know your President has been assassinated? The communists did it!" I simply said "Wow! Thanks for telling me, I'll tune in a domestic radio here and see what's happening." I shouted it to the others in the room and ran over to a monitoring receiver to tune it

to a local AM station, where the somber sounds of a reporter on site at Dealy Plaza could be heard, backing and filling and re-explaining what was known, while the mortally wounded John Kennedy was being taken to Parkland Hospital.

So there we were, finding out for the first time about the shooting of John Kennedy from someone in another country, 1,200 miles away, across the Gulf of Mexico. We were, of course, as the rest of the US, in a momentary state of shock and puzzlement, trying to hear the news from Dealy Plaza and get some notion of what had transpired...and of course, who the perpetrator of such a heinous act was.

As I turned away from tuning the receiver, I noticed something extremely peculiar along the row of C4 Overseas Radio Control Terminals. Despite all the circuits showing their usual white and green lights meaning "circuit available and engaged by traffic," all the speech volume indicators had stopped moving. Despite the charges of US 3-dollars per minute, it seemed the whole world was in a similar state and had stopped talking. It took a full five minutes or more before speech activity began once again.

I think it is fair to say that this was truly a moment when the World stopped talking!

Epilogue: About fifteen years later, in a totally different job, I made a marketing call on the Vice President of TRT Communications, the later name for Tropical Radio, which still had its headquarters in Boston at the time. On entering the VP's office, I was introduced to none other than Franco Codoy, the voice I'd spoken to daily for several years and the man who'd first told us about JFK's assassination. It was another experience at how small the world of global telecommunications once had been.

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Ham Radio Now and Journalistic Integrity

By James Wades, WB8SIW

In the brave new Internet World, it seems anyone can play the role of "journalist." Simply grab an inexpensive video camera and a microphone and walk around in public and one can get people to answer almost any type of question. In a society in which individuals are measured not by the content of their character or the rectitude of their conduct, but rather by their ability to attract attention and notoriety, there is something almost pathologically com-

elling about our society's desire to be "interviewed."

The result is not greater clarity, but an ambient information noise level, which makes it difficult for even the most intellectually honest amongst us to discern fact from fiction. The issues of the day quickly become shrouded in bias, hidden agenda and other forms of media distortion. Even if one attempts to apply critical thinking, the sheer amount of information is so overwhelming; few have the time to work their way through it in order to find the truth. Toss in the lack of peer review in the form of editors and publishers, and things can get out-of-control in a hurry.

An excellent example of substandard reporting techniques may be found in the "Ham Radio Now" episode 250 video in which the National Traffic System is the subject. This interview could provide an excellent study of bias, hidden agenda and other rookie journalistic errors.

The interviewer, Gary Pearce, KN4AQ, begins the interview by feigning a brief nap while on camera, thereby signaling to the viewer that NTS is either a boring subject or, more likely, an object of ridicule. Pearce even goes on to admit that "[he has] been making fun of [NTS] for the past couple of shows." An individual with media experience, such as a politician, actor or professional athlete would have instantly recognized this situation as unfavorable and applied the time-tested technique of severely limiting answers to the point where the reporter went away. Unfortunately, the NTS volunteer being interviewed did not have this experience, so he tried to salvage the situation and, as a result, he continued to walk into an untenable situation.

Making matters worse, Pearce attempts to qualify himself as an expert. This is another "red flag." Pearce states that "I've been a ham for 51 years. I've checked into NTS Nets." Furthermore, he indicates that "we've tested [NTS and] it doesn't work very well." He never discloses his level of involvement in NTS. For example, did he check-in to a net once or twice, or 500 times? Did he originate one radiogram or 1000 radiograms? He never discloses who "we" might be. Are those who "tested" NTS a group of boy scouts, a few incompetent ARES operators with no traffic handling experience, or a group of professional emergency managers?

As if this wasn't enough, Pearce plays the role of comedienne by portraying a caricature of the transmission of a radiogram. This is yet another signal to the viewer that NTS can't be taken seriously. It is also another big red flag indicating that the sole purpose of the interview is entertainment as opposed to responsible news gathering. Other comments inserted into the interview by Pearce include:

- "Take your 'No-Doze" now!"
- "It's now three weeks later and the message has arrived."
- "It's not Pony Express; it's a little faster than that."

There's plenty of additional examples of Pearce's leading questions and incompetence, but why belabor the point? Pearce reveals his bias within the first few minutes of the interview and it should be clear to the viewer that he has no intention of honestly covering NTS issues. Rather, he is engaging in a technique more suited to a comedy club in which one targets a "straight man" from the audience and then singles him out for ridicule.

In order to prevent misunderstanding, it is important to point out that we are not suggesting Pearce should have filmed a "fluff piece." A good reporter can inject critical questions into an interview in order to arrive at the truth. However, this should be done in a balanced way. It might be wise for him not to qualify himself as an expert as well. For example, Pearce could have asked critical questions such as:

- "Some have complained about long delivery delays for some radiogram messages. Why does this occur?"
- "Some have argued that NTS is no longer relevant in an era of cellular data networks and robust telecommunications capabilities. Do you agree with this assessment?"

You will note that this style of question injects the necessary criticism while nonetheless allowing the subject of the interview to defend himself. If he can't defend himself, the reader or viewer will quickly make the correct conclusion.

Dealing with the Media

The "Ham Radio Now" interview is an excellent example of the pitfalls one encounters when dealing with the media. Even when dealing with a "reporter" who is also a radio amateur, one should not assume he is dealing with an honest (or competent) broker. Therefore, hams are well advised to consider these realities before dealing with the media:

- *A reporter is not necessarily your friend.* A smile and friendly handshake does not reveal hidden agenda nor does it reveal the reporter's character.
- In our brave new social media world, the line between entertainment and news has almost disappeared. New media is often most interested in generating controversy as opposed to identifying the truth.

- Facts are the first victim in modern-day reporting. Hidden agenda, political bias, intellectual dishonesty or simple incompetence driven by a failed university system tends to push the narrative of the interview in a direction designed to promote a reporter's prejudice or political agenda.
- The average reader or viewer has little patience for facts or technical details. Such detail requires an investment of time and research. This situation worsens with each passing day as the children who came of age using smart phones and shallow on-line information become incapable of absorbing the depth and nuance of the real world.

If one is to be interviewed, follow these basic rules:

- When possible, schedule an interview and arrange for it to take place in a *controlled environment or neutral territory*. Do not agree to spontaneous interviews. Even if one simply postpones an interview for a half hour, this allows one to take the time necessary to prepare what he wants to say.
- If possible, have scripts ready. Understand what your message is. Weave your fundamental message into your scripts. Politicians have "talking points" for a reason. Talking points ensure they get their point across without the media introducing bias in the form of leading questions or through their selection of questions.
- "Read" your reporter. As in the case of the "Ham Radio Now" interview, reporters often reveal their agenda early on. If there is evidence the reporter is not interested in fair play, simply minimize your answers to the point where the content becomes unusable. Simple "yes" and "no" answers or other very minimal responses result in boring content. Boring content doesn't sell and therefore, the reporter goes away. By minimizing one's responses, one also ensures he won't let out sufficient rope to hang himself.
- Avoid such phrases as "no comment," or "I can't respond to that." These are the equivalent of saying "I'm guilty of something." For example, a better response might be "I need to look into that," or "I'll research this and get back to you." More often than not, these latter responses and their associated question will be edited out of the interview.
- Never agree to an interview when functioning in an emergency operations environment (ARES, etc.) without first obtaining approval from the emergency management agency in charge of the operation. Coordinate

all press coverage and interviews with the Public Information Officer for the agency with whom you are cooperating.

- Only comment on subject areas in which you have real expertise. Do not speculate on other aspects of your field or a broader activity in which you simply play a role.

Here is the really important point:

Every ARRL Section should have an active volunteer *Public Information Officer*. The PIO should have REAL experience dealing with the media. No matter how badly you want to see your photo in the newspaper or on television, it is often best to use the services of your PIO. At the minimum, seek out his advice and use his services to develop talking points in order to prep for the interview.

An ARES group or radio club can also assign a PIO, but only if the skills are available within that particular group. A "warm body" will not suffice. The PIO must have the ability to develop direct, personal relationships with local reporters and news media outlets. These personal relationships tend to mitigate the tendency of some reporters to manufacture controversy at the expense of an individual in whom they see little relationship value.

Remember; dealing with the media is an art. No one expects to take a seat in the cockpit of a Boeing 747 jet without training and experience. Likewise, one should avoid dealing with the media unless he has at least some training and experience. An attempt to do otherwise may result in "crash and burn."

The "Ham Radio Now" interview should be a case study exemplifying what can go wrong when well-meaning and even very competent people venture onto unfamiliar turf. It also exemplifies a disturbing cultural trend in which opinion has replaced journalism. Perhaps most importantly, it represents a society, which has devolved to the point at which readers and viewers can no longer identify simple ad hominem attacks and other classic fallacies of logic.

FLMSG and Radiograms

By Steve Hansen, KB1TCE

The program "flmsg" was briefly mentioned in Kate Hutton's "Abuse of the Message Format" in the September 2015 issue of QNI. Being a huge fan of flmsg, I would like to explain a little bit about it and how some of us are using it in Maine.

Flmsg is part of Dave Freese W1HKJ's suite of programs collectively termed the Narrow Band Emergency Messaging System (NBEMS). Fldigi is the sound card modem program and flmsg is a forms composition tool. Normally they are used together: a form such as an ICS-213 is composed with flmsg and then fldigi is used to encode the text into whichever digital mode is selected. Flmsg includes about two dozen forms including various ICS, Red Cross, weather reporting, MARS and, of course, the ARRL radiogram. Detailed information and downloads may be obtained from <http://w1hkj.com>.

I began using fldigi and flmsg in 2010 when I started our Maine VHF and HF NBEMS nets, the former on the KQ1L linked repeater system that covers a large portion of Maine. NBEMS has become a standard set of software for many communications functions, and many ARES/RACES operators are now familiar with it. A very nice feature of flmsg is that it can be used to create forms that may be sent by any means that will accept attachments or file transfers. This includes:

- Packet,
 - Winlink,
 - email,
 - mesh network,
 - thumb drive,
 - BPQ BBS
- ...and more.

At our Knox County EOC, the staff has flmsg on their computers where they can create or receive messages. The files are then moved to and from the radio room via a swap drive.

Flmsg will produce three principle types of output:

1. A native text file with an extension that is related to the type of form (e.g. an ICS-213 file is "*.213"). This file contains commands that enable the file to be transmitted by fldigi and then reopened by another copy of flmsg.
2. A text output without the above commands.

An HTML output that produces a properly formatted, printable form using a browser.

We pretty much ignored the radiogram form until early 2015, a few months after I became a NTSD DRS. We passed a few radiograms on the VHF digital net using flmsg but it didn't really catch on. That changed in March when I posted to one of the NBEMS Yahoo groups that we were doing radiograms on our Maine digital nets. Shortly thereafter I received a radiogram from Greg Mossop G0DUB suggesting that we share radiograms between the participants in our respective EMCOMM nets.

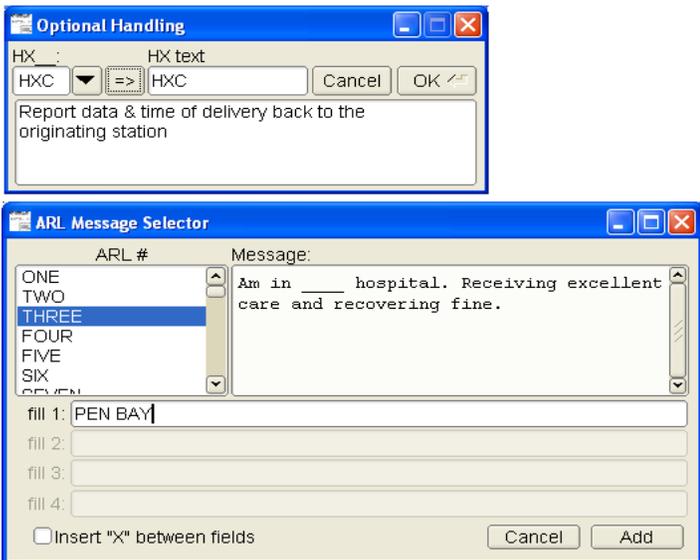
That seemed to pique some real interest over here and, over the months, this has grown into a bit of a pen pal relationship between some of the operators. The process on this side is that I get a message from the UK addressed to one of our team. I generally hold the message until the next net. The radiogram then gets passed via flmsg to the addressee. We have also passed radiograms on our nightly VHF chat net; the Knox Co. ARES/RACES net, and also via the Maine Section phone net, through my BBS, via Winlink and, sometimes via email.

One relatively new ham who has gotten hooked on this is Eva Murray KC1BBH. Eva lives on the island of Matinicus. Her husband, Paul, runs the island diesel power plant. At 22 miles, Matinicus is the most remote island off of our coast that has a full time population. (In the winter it's about two dozen people.) Eva does a bit of everything for the island community (see http://evamurraywriting.com/eva_murrays_halfway_serious_resume) and her interest in ham radio was triggered by the island's fragile communications infrastructure. I'll use one of her radiograms to Greg as an example of how flmsg works. That is shown in the figure below. You can ignore the mode and transmission time – those are related to use with fldigi.

The screenshot shows the FLMSG 2.0.15 application window. The title bar reads "FLMSG: 2.0.15". The menu bar includes "File", "Form", "Template", "Config", "AutoSend", and "Help". The main window is titled "ARRL radiogram" and shows a form for "file: kc1bbh_2.m2s". The form fields include:

- SVC: 2, *NR: ROUTINE, *PREC: [dropdown], HX: [dropdown], *STN ORIG: KC1BBH, CK: 26
- PLACE OF ORIG: MATINICUS ME, TIME FILED: 1500, *MON DY: MAR 4
- *TO: GREG MOSSOP G0DUB, CHESTER GBR
- TEL: [empty field]
- OP NOTE: [empty field]
- Standard Format checkbox is checked.
- ARRL MSG button.
- TXT: MATINICUS ISLAND 22 MILES FROM MAINLAND X VISITED BY NATIVE AMERICANS UNTIL MID 1700S X FIRST WHITE SETTLER EBENEZER HALL X HE WAS TROUBLE X 73
- SIG: EVA KC1BBH, OP NOTE: REPLY VIA KB1TCE ATSIGN N
- Comp: base128, PSK250RC5, 521 bytes / 10 sec

For the operator who is new to the radiogram format, Flmsg has a few useful tools to provide assistance. Moving the mouse pointer over any field will provide some explanatory text and there are lookups for the HX codes and ARL numbers as shown below.



Flmsg will compute the check sum and will correct some formatting errors such as replacing a period with an X, question mark with QUERY, putting 5 groups per line, etc. However, the operator really has to know the essential elements of formatting. As Kate pointed out in her article, an operator can type “C” (or anything else) in the HX window, which is wrong. However, if one uses the drop down selector, it will read “HXC.” One has to learn those little niceties.

As part of the training process, each radiogram gets a critique. It generally takes only a couple of meetings with my training surrogate (photo below) to get things right. Doing this on the VHF net is especially useful as it’s mixed voice and digital and instant feedback can be given. When I pull a radiogram off of NTSD/Airmail, it’s a fairly simple task to transfer the fields to the flmsg form. As peo-



ple get more familiar with the format, they can just dispense with the form if there is no need to use it. Going the other way, from flmsg to Airmail, is very simple. The text output is fully compatible with NTSD thanks to some changes that

Dave made in response to input from the NTS-Winlink Committee:

2 R KC1BBH 26 MATINICUS ME 1500 MAR 4
 GREG MOSSOP GODUB
 CHESTER GBR
 BT
 MATINICUS ISLAND 22 MILES FROM
 MAINLAND X VISITED BY NATIVE
 AMERICANS UNTIL MID 1700S X
 FIRST WHITE SETTLER EBENEZER HALL
 X HE WAS TROUBLE X
 73
 BT
 EVA KC1BBH
 OPNOTE REPLY VIA KB1TCE ATSIGN NTSME 04854
 AR

Needless to say, the “HE WAS TROUBLE” spurred some additional exchanges. For example, Greg asked what Matinicus does with troublemakers now. Eva responded that, if born on Matinicus, they get elected to municipal office. For mainlanders, the judge might give them a choice between jail or time on Matinicus.

The other flmsg output is the HTML view. This has two formats. One is a file copy that includes fields for operator records (these may be filled in with the flmsg “Records” window). The other is the delivery copy. For radiograms with ARL numbers, the ARL text is printed on the form. Eva’s radiogram in the delivery format is shown below.

Of course, this all has a purpose beyond sending notes across the pond. We are trying to establish a core of NTS-knowledgeable operators in our ARES/RACES group who can handle welfare traffic should some serious event like the ice storm of 1998 hit Maine. This is part of a new community emergency communications program that we are in the process of launching (see <http://ballyhac.com>). Also, more trained traffic handlers within our team will be valuable, should welfare radiograms from disasters elsewhere arrive in Maine.

Beyond the radiogram form in flmsg, the ICS-213 has also been adjusted to make it fully compliant with the FEMA form. This plays into the “Hybrid Radiogram” format that is being developed. That’s another story but, for those who might be interested, look up NTS-007, the document that describes the use of flmsg to embed ICS-213 messages into a radiogram for digital transmission. The link is:

<http://dl.dropboxusercontent.com/u/73013707/NTS-007f.pdf>

RADIOGRAM

VIA AMATEUR RADIO

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
2	ROUTINE		KC1BBH	26	MATINICUS ME	1500	MAR 4
TO				THIS RADIO MESSAGE WAS RECEIVED AT			
GREG MOSSOP G0DUB CHESTER GBR				KB1TCE Steve			
PHONE NUMBER							
MATINICUS ISLAND 22 MILES FROM MAINLAND X VISITED BY NATIVE AMERICANS UNTIL MID 1700S X FIRST WHITE SETTLER EBENEZER HALL X HE WAS TROUBLE X 73 EVA KC1BBH							

Radiogram printed for delivery using "flmsg."

Mysteries of the Date-Time Group

By James Wades, WB8SIW

Questions often arise regarding the appropriate time and date or origin (date-time group) to be placed in the preamble of a radiogram. Some operators mistakenly believe that the time and date of origin should reflect the time at which the radiogram is first entered into an ARES or NTS network. This belief is in error.

In order to understand the purpose of the date-time group, consider this hypothetical example:

An outgoing message is drafted in an Emergency Operations Center and transferred to the message router. The message router then transfers the message to the radio operator for transmission via an Amateur Radio NTS or ARES circuit. What is the time of origin?

There are several possible factors, which must be considered here. For example:

1. What if the message is placed in a stack of outgoing messages and therefore delayed by 15-minutes, a half hour, or the like?
2. What if the message is misplaced and the initial transmission is significantly delayed?

Within an operational environment, it is necessary for decision makers to be able to place data within a temporal context. In other words, for a message to be accurate, it must be placed against a time-line in its proper sequence. Otherwise, response to a rapidly evolving disaster or emergency response operation is altered. Again; a hypothetical example:

Radiogram A is originated from a command post at 1300Z requesting sufficient items to shelter 125 people. This message is later superseded by radiogram B, originated at 1330Z updating the request to supplies for 250 people. What happens if message A is misplaced or delayed in the EOC environment (or in transit) for an hour, therefore arriving after radiogram B? Can this affect the emergency response? The answer is, of course, "yes."

If one steps into an EOC or similar facility, it is common to see status boards (or monitors) displaying events, reports and messages referenced against a time-line. This temporal context allows officials to quickly place their decisions in the proper context during a rapidly evolving, dynamic situation.

The same concerns apply to "automatic date time stamps." It is common to hear hams argue that the radiogram format is not needed because their preferred digital mode automatically appends a date and time of origin to a message when it is uploaded. Well....yes and no. Does the time the radio amateur entered the data into the terminal accurately reflect the time at which the served agency official drafted the message and presented it for transmission, or was it the time the operator got through all of the prior (perhaps higher precedence) message traffic to get the message into the system?

Here is another way to look at this: The date and time of origin, like the "place of origin," are associated with the *originator*. They must be connected to the time at which the radiogram was drafted and *presented for transmission*. The radio operator or technology is simply a telecommunications carrier. It is the "thought" of the originator that counts. This would, of course, also apply to ICS-

213, military message traffic or similar operational record message traffic.

Therefore, the basic rule is this: The date and time of origin should reflect the date and time at which the message was drafted and presented for origination. It is not the time at which the message first enters the radio network.

-30-

A Traffic Experiment— A Measure of NTS Accuracy

By Ed Cote, KA1G

"The NTS is dead and useless." "No one needs NTS; we all have cell phones, e-mail, texting, twitter, face book, blah blah blah." Sound familiar? Yep, we've all heard it and or said it at some point in our amateur radio discussions. Want to argue about any of it? ...neither do I.

One thing we could probably agree on is this: With all that communications technology in all those hands, it sure makes for a large pile of folks getting very used to having instant access to friends and family. This is called "demand." I wonder how they will react when all of that stops working suddenly and for a protracted time. As with most things; fuel; food; housing, and so forth; when "demand" goes up or "supply" goes down, the value (price) skyrockets.

The National Traffic System might be able to answer some of this demand. It is alive and well in most areas of the country. Admittedly, there are a few sections where the system is more or less dysfunctional, however; it is quite easy to get a message to anyone just about anywhere in North America, Puerto Rico, the U.S. Virgin Island and parts of Europe.

The NTS consists of two components, the NTS and NTSD (National Traffic System Digital). Some claim NTSD, which is all radio-frequency based without Internet involvement, is error-free due to the computer-to-computer auto-forwarding and automatic error correction methods. We shall see; there are still humans involved. Of course, it is also the human element that makes NTS work.

One rap against the NTS and radiogram traffic has been accuracy, or the lack thereof, and the amount of time from origination to delivery. My goal in the experiment described here is to evaluate these claims, at least within the

parameters of a particular set of circumstances.

Also contributing to some negative perceptions is so-called "spam traffic." "To SPAM or not to SPAM" that is the question. There is always discussion regarding what exactly some refer to as SPAM or canned messages. Yet, without this traffic, the word "lonely" comes to mind. NTS would be a very quiet place. I, for one, appreciate the effort extended by those who take the time to generate this bulk traffic; the upside of which is the critical role it plays in keeping the NTS and NTSD fed. The down side of these bulk messages is that some of those who disdain them also tend to handle them with something less than a sense of urgency. I have seen many examples of poor operating that can be attributed to the preponderance of bulk messages, which are sent to recipients unknown to the originator. One evening, an operator to whom I had passed many of these canned messages said "I never actually deliver any of these, I just receive them and throw them away."

I think many of us have had the bad experience of attempting to deliver an unsolicited message to a Silent Key. Messages containing bad phone numbers also work against fostering good operating practice in traffic handling. While I do recognize the difficulty in harvesting good contact information, especially with the mass migration towards cellular mobile phones, the fact remains that some of these factors associated with bulk originations work against NTS.

It is within this environment that I decided to embark on my experiment. This experiment entails the handling of daily net reports from several NTS nets in Florida, with subsequent routing and delivery to me, the net manager, while staying in Ohio.

A bit of background on this; I am the manager of the Volusia County Traffic Net (VCTN) and the Tropical Florida Amateur Sideband Net (TFN). The former is a local VHF net based in Daytona Beach and operating on the 147.150-MHz repeater. The latter net is an HF sideband net operating on 3940 kHz, covering all of Florida. As manager of these nets, one of my duties is to collect reports from each net control station after every net session. These are compiled into a monthly statistical net report, which I send to the Section Traffic Manager, Don Duckett N9MN.

Normally, I receive net reports direct from the net control operators in Florida on the associated net because my permanent home is in Edgewater, Florida. However, my vacation home is in Ohio, on Catawba Island in Lake Erie. This year, because of unusual circumstances, our visit to Ohio was late in the year and protracted, from mid-August

through Thanksgiving. In past years, I have had others gather reports and either email or telephone them to me. However, this year's situation afforded me the opportunity to use the NTS and NTSD along with email and or direct monitoring via HF to obtain data verification and evaluation of NTS accuracy and timeliness.

Let's talk a bit about the path the messages in this experiment have taken. The TFN meets at 5:45 PM seven days a week, VCTN meets at 6:30 PM. The net reports are formatted as radiograms and then listed as outgoing traffic. Several paths are available for this radiogram traffic. One path is via NTS Cycle 4. In this case, the radiogram is passed to the QFN (All Florida CW Net) representative. The QFN rep then takes it to the NTS Cycle 4, Fourth Region CW net (4RN). From there it is transferred through the Cycle 4 NTS CW networks until it reaches Ohio. Alternatively, the TFN report could be passed to the NTSD Digital Relay Station (DRS), who would inject the message into the automated NTSD system via the Fourth Region automated MBO (mail box operation - more on this later). From there it would be automatically routed through NTSD to the Ohio Section. As yet an additional alternative, some net reports could move from TFN or VCTN to the Florida Phone Traffic Net, which meets at 6:55 AM on 3940 kHz, or the Florida Midday Traffic Net, which meets on 7242 kHz atwait for it.....midday. From there, the Cycle 2 (daytime) Fourth Region Net Rep would accept the outgoing message and inject it into the Cycle 2 nets.

For those unfamiliar with the detailed functioning of the NTS "manual mode" nets, also referred to as Cycle 2 (daytime) and Cycle 4 (nighttime), a bit of explanation is likely in order. Messages moving out of the Florida Section are transferred to the Fourth Region Net, which covers Florida; Georgia; South Carolina; North Carolina; Virginia and Puerto Rico and the U.S. Virgin Islands. Each of these sections sends a rep to Cycle 2 4RN, which meets twice per day on 7242 kHz; first for up cycle at 1:45 PM during which traffic moves out of its originating sections, and again at 3:30 PM for the down cycle, during which traffic moves into its destination sections.

In the case of an outgoing message; once the radiogram has reached 4RN, it will be passed to the Eastern Area Net. The US and Canada are divided into three NTS Areas, these being the Eastern, Central and Pacific Nets. Each of these Area Nets, encompass their respective region and section networks. For example, the Eastern Area Net consists of regions 1, 2, 3, 4 and 8, as well as Eastern Canada. In the case of a radiogram travelling from Florida to Ohio,

the message will move from 4RN to EAN and then 8RN from which it will be distributed to the Ohio Section. If the message stays within Cycle 2, the Ohio rep will bring the report to the Ohio Single Side Band Net (OSSBN), which meets on 3972.5 kHz three times per day at 10:30 AM; 4:15 PM and 6:45 PM. Typically, the 8RN rep carrying this traffic would be checking into the OSSBN at 4.15-PM where the traffic can be delivered directly to me or given to another station for relay to me at a later time.

As can be seen, there are all sorts of variations in the process. Radiograms may flow through different nets and the number of times the messages might be passed from station to station varies. These radiograms may also be handled utilizing a number of different modes including SSB, CW and Digital or various combinations of all. In the case of a message routed via NTSD, a radiogram picked up by a Digital Relay Station and injected into the network follows a similar, albeit automated, path. The message is transmitted via HF PACTOR directly to the Regional MBO where it is automatically routed to the MBO in the destination area, without any manual net operation being involved. However, a DRS in the destination Section will be required to poll the Regional MBO and download the traffic for his locality based on the zip codes he has set up for download. That traffic is then transferred into the regular NTS system. Ultimately, what I am attempting to lay out here is the fact that there are systems in place with procedures for moving messages over great distances. Most of the Amateur Radio stations involved in this process have emergency power capabilities and redundant equipment resources.

So why use a complicated multitier system? "I live in Ohio and I can talk to stations all over the world with my radio, why does one have to relay?" I have actually heard this said! The NTS as described here has been in place for more than forty years, the newly added NTSD notwithstanding. This system affords a reliable resource for moving messages on any given day to any given place within the system regardless of the availability of a specific operator. It utilizes thousands of trained volunteer operators with highly capable communications equipment. It uses standardized methods and procedures to ensure proper network management and servicing throughout the system and it is regularly exercised. Moreover it is free to the customer!

This experiment started in mid-August with 40 and 75 meters during the summer doldrums. We have seen some of the strongest solar events in recent history, yet it worked well. It works because some very dedicated people show up to do this every day in both good conditions and bad. In

bad times we rely on relay, because somebody can usually hear somebody. Therefore, the system prevails.

Here are two actual net report radiograms selected at random so that those who are unfamiliar with NTS can see what a typical net report looks like:

165 R WB4RJW 10 EDGEWATER FL OCT 14
ED KA1G
PORT CLINTON OH 43452
419 797 XXXX
OR VIA OSSBN
(BT)
TFN OCT 14 QNI 10
QTC 1 QND 7 88
(BT)
DIANE WB4RJW

100801 R WC4FSU 17 ORMOND BEACH FL OCT 12
ED COTE KA1G
PORT CLINTON OH 43452
419 797 XXXX
OR VIA OSSBN
(BT)
TFN REPORT FOR THURSDAY OCTOBER
8 2015 X STATIONS 8
TRAFFIC 3 TIME 15 MINUTES
X 88
(BT)
HELEN WC4FSU

These radiograms represent the typical context within which the net reports were sent via the NTS. Yes, I know that Q signals should not be used in voice operations, but here they are being used within the context of a message to ensure brevity and are therefore appropriate. This is the standard format for most net reports, used throughout the system, the goal of which is to convey to the net manager the date of the net, the number of stations checking in, the number of messages passed during the net, and the amount of time the net was in session, the combination of which indicates net efficiency. Some nets also report the call signs of check-ins and other liaison functions as well.

Design of Experimental Process

The period of data collection was from August 21, 2015 thru November 30, 2015, which encompassed a total of

210 net report radiograms. Each radiogram was analyzed by "word" count. Each correct "word" was given the numerical value of one (1), whereas each incorrect word was given a numerical value of zero (0). While a typical NTS message word count does not include the preamble, address or signature, but rather only the text; for analysis purposes every "word" in a message including these components was given equal value when received. This process allows for the conversion of mixed text and numerical data into a purely numerical data set, thereby facilitating mathematical analysis.

Verification of data was accomplished by several different methods. The majority of these messages were copied directly by listening in the background as they were passed to the 4RN representative on the Florida Phone Traffic Net at 6:45 AM each morning. Using my phased quarter-wave vertical array from Ohio, I can regularly participate in that net. In the cases where the traffic could not be copied directly because of poor conditions, or because other nets or digital methods were used, I obtained a control copy by e-mail for comparison with the same messages received in Ohio via NTS.

Data analysis:

In all, 210 net reports were sent and received. These messages yielded a total of 6,134 "words" or data points. There were a total of 26 errors recorded. Therefore, the overall average of correct content was 99.57% or an error rate of 0.43%.

The 210 messages transmitted via NTS were all delivered. Of these, 100% were delivered within three days. Of these 96% were within two days and 85% delivered within one day. 61% of the messages were delivered on the same day they were originated into the NTS.

It is worth mentioning some of the challenges to accuracy experienced during this process. I have already discussed some of the propagation issues encountered. There were also some interesting little traps inadvertently built into the various messages. As a net manager, I do not dictate the specific message text format to be used by my net control stations. I only require that they convey the net name, date of net, number of check-in stations, traffic volume and time. There are therefore a number of different report formats contained within the total file of 210 radiograms. Sometimes, the format used by a particular station varies, depending on the net.

In one case, there are two stations reporting, a husband and wife, with very similar call signs, wr4fsu and wc4fsu, both

of whom would report on two different nets on two different days of the week. One of the weekends included during the analysis fell on the same day as the Ohio SET exercise, which is quite intense and which often places Ohio in the top five in SET statistics.

Having a professional background in engineering evaluation, I was careful to not allow it to be in general knowledge that accuracy performance statistics were being kept. This was done to preclude any extraordinary effort. Further, I was particularly brutal in calling errors. There were many, in fact most errors, that were "inconsequential" to the meaning of the message, yet, they were nonetheless scored as errors.

In all I can only express my pleasure with the overall performance demonstrated in this particular snapshot of the National Traffic System. I am sure there are areas within the system that would not do as well and there may well be areas that would do better. My only hope is that we can work together to make it as good as it can be. There are some simple things we can do to mitigate the majority of message errors, which I feel are the result of assumptions made when a receiving operator didn't get the radiogram correctly. While listening in to many of these messages being passed to me, I have noticed that most errors can be categorized as "bad assumptions." A simple solution for this could be to implement a policy in which the handling of emergency, priority or welfare traffic should require the receiving station to read back the message to a third party who has been asked to copy along. This is in essence what is being done when a message requires relay.

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**Final Details Released about
"Cascadia Rising"
By James Wades (WB8SIW)**

In previous issues of "QNI" we have touched on the nature and structure of the upcoming "Cascadia Rising" exercise in which both local ARES and NTS will be playing an important role. After additional meetings with the Federal Emergency Management Agency, the general parameters of the NTS component have been largely determined. The NTS exercise design team is now putting together the specific exercise components, along with the necessary evaluation tools needed to support this exercise.

The NTS component might be viewed as a parallel "proof-of-concept" exercise designed to test the NTS national messaging layer. The exercise methodology may be summa-

rized as follows:

- Selected NTS operators within the "disaster area," will be provided with preformatted inject messages in sealed envelopes. These envelopes will indicate the time and date on which the envelope is to be opened and the messages originated via NTS networks.
- The exercise messages will be addressed to three primary locations, these being:
 - The FEMA National Response Coordinating Center (NRCC)
 - The FEMA Region 10 Response Coordinating Center
 - The State EOC in which the simulated disaster report originates.
- Some additional message flow, which originates with the NRCC will return to the Cascadia Region via NTS facilities.
- The inject messages will be designed to trigger a specific decision or response within the exercise. In other words, within the context of a functional or full-scale emergency management exercise, messages are injected against a time-line to drive the scenario and elicit decisions and actions from the exercise players.

Of course, for an exercise to be meaningful, it must also be realistic, objective and measurable. Therefore, the exercise evaluation criteria will measure the following factors:

- Time in transit from point of origination to point of delivery.
- Message completeness
- Message accuracy
- Statistical outliers or potential failures

Specific methods for ensuring a measurable and objective exercise will be built into the exercise. This includes requirements for:

- Message serial number control to facilitate the tracking of messages through the NTS system.
- Basic data collection at participating stations to capture message flow and identify modality at various stages as traffic moves through the system.

- Options for collecting qualitative input from participating stations, which will be incorporated into the evaluation process.
- Control copies of all inject messages will be retained by the exercise evaluation team for comparison and scoring against messages conveyed in the field.

As this issue of "QNI" is being released, the exercise design team is contacting NTS officials to begin lining-up personnel to support this phase of the exercise. Of particular importance is the identification of vetted and qualified NTS volunteers within the states of Washington, Oregon and Idaho. **Section Traffic Managers should be coordinating with their Net Managers to assemble a list of these qualified individuals.** The following data for each identified volunteer who agrees to participate in the exercise should include:

Name
 Call Sign
 Address
 Telephone number(s)
 E-mail

This data should be collected and transmitted to:

James Wades
 NTS Central Area Staff
 Cascadia Rising Project Manager
jameswades@gmail.com

Message Flow:

Message flow within the exercise scenario will encompass several NTS layers. These layers include:

- The Washington, Oregon and Idaho Section Nets.
- The Region 7 Cycle 2 and Cycle 4 Networks
- NTSD resources
- TCC resources for the establishment of specialized point-to-point circuits to the Eastern Area for message delivery to Washington, DC.

All traffic will flow across-country via RF-only. Messages will not be delivered to the NRCC until which time they reach the Eastern Area. This will demonstrate the capacity to provide long-haul connectivity in the event of a widespread Internet outage and other telecommunications common-carrier disruptions.

Within the Eastern Area, qualified and vetted TCC operators and personnel from the Eastern Pennsylvania Section will be activated throughout the exercise to facilitate message delivery to the FEMA NRCC. These operators will also be responsible for providing the detailed administrative data required to track, account and catalog incoming message flow.

Additional Planning Remains.

NTS leadership within the Cascadia Region will soon be receiving a network management overview document along with a network topography flow-chart and frequency matrix. This will fill in some of the specific details regarding the upcoming exercise.

Throughout April and May, NTS staff will be working closely with all levels of NTS, particularly in the Washington, Idaho and Oregon Sections, Region 7 and TCC to ensure that everything is in place for the exercise.

Once all exercise participants in the Cascadia Region have been identified, each participant will be mailed a packet containing their inject messages, data collection forms and other evaluation materials. After the exercise, these materials will be returned to the exercise evaluation team along with copies of all message traffic so that a detailed analytical report can be developed.

Conclusion:

In reality, the same networks and skills used for routine NTS operations will simply be applied to this exercise. The only real difference is the added layer of a few specialized point-to-point circuits, some specialized delivery procedures and the requirement for some simple, but important, record-keeping on the part of exercise participants.

This exercise does drive home the fact that NTS is entering a new era in which it will be asked to play a role in national response planning. The lessons learned from this exercise will undoubtedly identify a variety of operational areas requiring improvement. Undoubtedly, it will stress the need for a renewed interest in traffic handling amongst the broader Amateur Radio community.

Once the exercise is complete, the next priority will likely be improved member recruitment and preparation for additional exercises. The goal of NTS will be to offer a home for the "quiet professionals" within the Amateur Radio Service who want to support a meaningful EMCOMM mission at the national level that reflects the value of their time and effort.

Using Bulk Traffic to “Ping” the NTS

By Kate Hutton K6HTN

This article will be of interest to those hams who use the NTS to send greeting, welcome, or congratulatory messages. These messages may involve a new license, a new upgrade, a Public Service Honor Roll listing, a new membership in an organization such as the SKCC, or just a random reminder that the NTS exists and is always in need of new operators. This article should also be of interest to all of us who care about the level of quality and service offered by the NTS.

Two questions have always been in the back of my mind as I engage in this so-called “bulk traffic” activity: One; what happens to all my traffic, and two; what percentage of the telephone numbers that I look up on the Internet are accurate? After keeping careful records for some period of time, I may now be in a position to answer both of these questions.

I have been sending “welcome to amateur radio” messages to new hams in call sign areas 1, 3, 5, 7, 9 and 0 for some time. Since January 1, 2016, I’ve been keeping detailed records of the service (“SVC”) results associated with these messages.

My outgoing messages have a handling instruction of “HXE.” The thought on using HXE is that it might elicit an “Elmering” conversation between a fraction of the addressees and the traffic handlers who delivered their messages. I was thinking that the delivery of the radiogram might be the ONLY direct exposure to the NTS that any of the new hams would ever get. The text of the message is:

ARL FIFTY ARL FIFTY SIX
NEW AMATEUR RADIO LICENSE ASK
DELIVERING HAM OR GOOGLE ARRL
NATIONAL TRAFFIC SYSTEM TO LEARN
ABOUT THIS MESSAGE 73

Radiograms are routed through the manual nets or NTSD, depending on the traffic load. From late December, 2015 to mid-March, 2016, I sent 1842 such messages. For messages sent after mid-March, the service messages are still

arriving, so I’ve not included these in my statistics. The 1842 messages account for about half of the new hams; the remaining half do not have publicly listed phone numbers.

615 of the 1842 (33%, almost exactly 1/3) were serviced. The question is; can I learn anything from all these service messages, or the lack of them?

HXE does not require a service reply for a successful delivery, so there is no reason to expect the servicing rate to be 100%. However, the geographic and mode distribution of the SVC traffic that did come back is very patchy. The geographic distribution seems to indicate that the data has more to do with the activity or non-activity of various Sections (or even Regions) than it does about the actual delivery of the messages.

There is a tendency for large “batches” of traffic sent via NTSD to generate few or no SVC messages. At this point, I am uncertain of the reason for this lack of response. One possibility is that some batches of traffic are not getting through at all. It is possible that some sections lack DRS operators. It is also possible that bulk traffic is being ignored in some areas. With no SVC feedback or access to NTSD records, it is impossible to determine.

As I received SVC messages, I color-coded the spreadsheet entries according to the following scheme:

GREEN: Indicating a successful delivery, including by voicemail.

PURPLE: Indicating that a conversation took place generating a reply message or indicating that the addressee had no reply.

BLUE: Indicating that the message was delivery by mail.

DARK ORANGE: Indicating a disconnected, out-of-service or wrong phone number

ORANGE: Indicating some other telephone related problem, such as no answer, voice mailbox full, etc.

RED: Indicating no outlet

What are the results? I was surprised at how many

GREEN SVC messages there were, considering that they were generally optional. Here are the overall results:

GREEN: 208 messages or 34% of the serviced traffic

PURPLE (the pay dirt!): 121 messages or 20%

BLUE: 45 messages or 7%

DARK ORANGE: 175 or 28%

ORANGE: 61 messages or 10%

RED: 5 messages or less than 1%

Conclusions??

- There is some Elmering conversations going on (PURPLE).
- Between GREEN, PURPLE and BLUE (total 61% of serviced messages), more messages are getting through than are service negatively.
- The telephone look-up services are out-of-date, but I knew that already. I was afraid they would be worse than the data showed.
- Many operators would rather ignore a message than service it as "NO OUTLET."
- Two thirds of the messages are being lost somewhere. There is no way to determine if any of them were delivered or not; but my guess is that they were not delivered.
- Delivery rates vary tremendously with respect to geography.
- Telephone numbers listed as problematic in the SVC messages are sometimes different from the ones originated by me, indicating a transmission error or typo.
- Message numbers referenced in the SVC messages do not always agree with the call sign, indicating a transmission error or typo.
- Very occasionally (fortunately), neither the original message number nor the addressee's call sign is included in the SVC message.

I was particularly interested in the information about bad phone numbers. Since I am a ham and basically cheap; I stick with free look-up services that are easy to use (some are and some aren't). For the time period covered here, I was using:

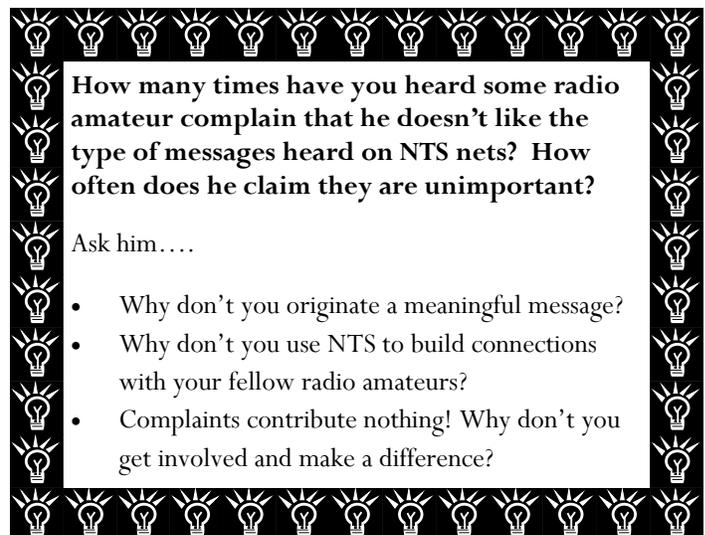
<http://www.unitedstatesphonebook.com/>
<http://www.yellowpages.com/whitepages>

Sometimes the two agree with each other and sometimes they don't (which is why I use two). Judging from look-ups on my friends and relatives, I'd say that the listings are at least a year old, if not older. Some people I knew who became silent keys a few years ago are still listed. As expected, the listings do not include cell phone numbers.

My experience with free "introductory membership" trial periods for the paid directory services has not been any more encouraging (although results have not been tabulated). More data may be provided, but there is still no indication of how out-of-date the listings are, or even which of several numbers is the most up-to-date. Telemarketers may have a secret source that is unknown to me.

In conclusion, I am happy to learn that some of the new hams were being exposed to the NTS first-hand. I am happy to see some delivering operators going above and beyond the call of duty required by HXE when servicing messages. I am happy to have a ballpark figure on how bad the telephone look-up services are. I am not so happy to observe the disappearance of large chunks of traffic. I hope that, when we are really needed, performance will be better. If the NTS staffing and net/NTSD infrastructure isn't there, however, it might not happen.

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**QNI
THE NTS
NEWSLETTER**

QNI
PO Box 192
Buchanan, MI. 49107

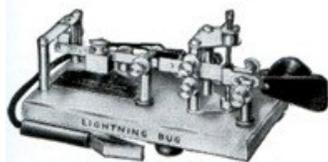
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tirety free of charge to the Ama-
teur Radio Community.



The Good Ol' Days!



There is no doubt that we live in the “good old days” of ham radio, at least in terms of technology if not in terms of operating standards.

Rack-mounted in my shack is a Hammarlund HX-500 transmitter and SP-600 (R-274B) receiver. Both are now in the range of 50 years old and they are excellent examples of the best radio engineers could offer

in the period 1955 to 1962.

The Hammarlund HX-500, originally introduced in 1960 at the cost of \$695, was probably over-priced for the Amateur market. Approximately 600 were manufactured and of these, some were made for commercial service.

The HX-500 was my first commercially manufactured transmitter. After a recent rebuild and realignment, it's quite a bit of fun to put on-air for CW or voice nets.

The R-274B (SP-600 JX-9) was originally designed for specialized military applications, such as intercept operations. As a matter of fact, after a thorough restoration and alignment, it certainly lives up to its performance reputation. I occasionally tune in Israeli Naval Intelligence and copy some CW traffic in the usual five character cipher groups. With its quiet noise floor and excellent sensitivity, it sometimes seems like the signal originates in Maryland rather than in the Middle East.

Yet, in terms of flexibility, features, size and cost versus performance, even today's low-end transceivers offer an amazing value that was inconceivable in 1960 or 1970. They are also better suited to mobile and portable operation!

TRAFFIC VOLUMES DURING THE GOLDEN AGE OF AMATEUR RADIO

We all know the history of relaying messages and its role in the development of organized Amateur Radio. Yet, it's easy to forget how dominant traffic handling was during the “golden age” of Amateur Radio.

For example, the Department of Commerce (predecessor to the FCC) in 1928 reported an Amateur Radio population of approximately 17,000 licensees. Compare this against the approximately 730,000 licensees today.

These 17,000 radio amateurs handled an amazing amount of traffic. Here are some sample monthly traffic totals obtained from old issues of QST:

December 1922: 66,885 radiograms
July 1923: 24,237 radiograms
August 1923: 24,478 radiograms

These samples are fairly typical of the 1920s reports. As one can see from the data, Amateur Radio activity during this era tended to peak in the winter months and slow during the “static” season of July and August. This is not a surprise considering the fact that most activity was concentrated in the 1.5 to 3.0 MHz range.

Imagine what could be done in an era of modern solid state transceivers, fantastic frequency agility and automated PACTOR networks!