

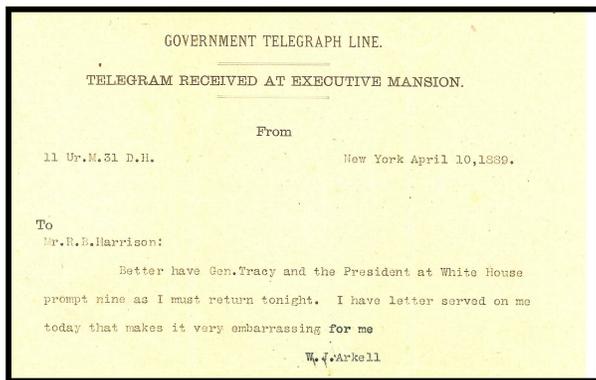
December 15, 2012

A historic telegram

As we prepare this issue of *QNI*, those of us in the “States” are recovering from yet another “exciting” presidential election. Once again, we can listen to the radio or watch television without hearing a seemingly endless stream of political advertisements. If there is one thing both liberals and conservatives can likely agree upon, it’s the shared relief that comes with the conclusion of political advertising! So...what does this have to do with NTS?

While taking a break from preparing this issue of *QNI*, I went through some files stored away in my basement. I came across this telegram from 1889 addressed to the son of President Harrison as received at the White House. In it, the Editor of “Judge” magazine essentially issues an edict directing President Harrison and the Secretary of the Navy to meet him at a time of his choosing!

Whether it’s President Harrison, FDR, or Barack Obama, it’s easy to view the President of the United States as almost omnipotent. However, it may be the media that really calls the shots with its ability to make or break the man. This telegram indicates the power of a single magazine publisher in the 19th Century, and it may very well reflect a situation that is fundamentally the same today. This telegram reminds us that we should pay close attention to the structure and ethics of the media and entertainment industry. It also reminds us of a time when important communications could be conveyed in just a few words.



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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.

Getting Started in NTS Digital—The DRS

By David Struebel, WB2FTX

In the last issue of QNI, we learned a little about the structure and operations of NTS Digital (NTSD). To refresh, NTSD consists of a series of automated bulletin-board-type stations operating 24/7, 365 on HF using high speed PACTOR 2, and 3, to transfer messages between them. These stations are known as either Hubs or MBOs. The Hub/MBO operations roughly correspond to the TCC, Area and Region Nets in the traditional NTS system. The goal in NTSD is to get the traffic to the closest point to delivery via digital means, before it is removed from NTSD and taken to the Region, Section, or local nets. That function of removing the traffic is the role of the Digital Relay Station (DRS). Since the DRS is probably the first step in becoming part of NTSD, we will focus on that role in this article.

The DRS

What exactly is a DRS? DRS is a NTS Area appointment made by and reporting to the NTSD Area Digital Coordinator (ADC). It is unlike the Official Relay Station (ORS) appointment, which is made at the ARRL Section level, usually by the Section Manager in conjunction with the Section Traffic Manager. DRS requirements include ARRL membership, a monthly activity report to the appropriate ADC, and continued service in the DRS function. DRSs are usually appointed at either a Region, statewide, or Section level, although it could also be a local level assignment.

The function of the DRS is to check into (connect to) their “assigned” hub/MBO, download traffic for their areas, and take it to the Region, Section or local nets for further relay and ultimate delivery. Since the Hub/MBOs operate 24/7, the connection can be done at any time, at the convenience of the DRS, although it makes the most sense to do it shortly before the scheduled nets.

When the DRS connects to their Hub/MBO, traffic routed (by zip code) for their area of responsibility is automatically downloaded to their station. Likewise, any outgoing traffic they may have can be automatically uploaded to the Hub/MBO in the same session. Depending on the traffic load, this could take up to several minutes to complete.

While the Hub/MBOs use the higher speed PACTOR 2 and PACTOR 3 protocols to communicate among themselves, such speed is not necessary for a DRS, since they are only in contact with the Hub/MBO for a short time. The older PACTOR 1 speed is suitable for a DRS. Fortunately, PACTOR 1 is very easy and inexpensive to operate. Modems (TNCs) like the AEA PK-232 MBX and the Kantronics KAM and KAM Plus can be obtained used for about \$50. In addition, NTSD operates an Equipment Bank that can loan one of

these modems to a new NTSD recruit. The modem is theirs to use until such time as they leave NTSD, buy one of their own, or upgrade. Then they are obligated to return the loaned modem for use by another newcomer. The Equipment Bank is always looking for donations of equipment and/or cash to further this program.

Transceiver Requirements

What else does a new DRS need? Although some of the Hubs/MBOs also have VHF packet capability, most of their activity is on HF, usually on 80 and 40 meters. That means you need a HF rig and antenna for 80 and 40 meters.

The rig doesn't have to be the latest and the greatest, but it should have a quick transmit/receive turnaround time (most modern rigs do) and preferably a digital frequency readout. Rig control by computer is handy, although not absolutely required. The primary requirement is frequency stability. An older rig that meets the rest of the above requirements, but takes time for the frequency drift to settle down, may still be used provided you turn it on and let it warm up before making your connection.

Controlling the Transceiver

You need a cable to go from your modem to your rig. There are two ways of doing this. The preferred way is to use the accessory connection on your radio. The second method involves the use of the microphone and external speaker connections. The accessory route is preferred, because usually the audio levels on these ports are fixed. Also, such a connection avoids having to plug and unplug connections when you want to use your rig for other modes, such as SSB or CW.

There is very little standardization between modem and accessory port connections. Thus you must specify a particular cable by the modem/rig combination. In my capacity as manager of the NTSD Equipment Bank, I have or can get copies of the operations manuals for most common rigs and tell you what type of connector is needed. Because my eyesight and soldering skills are not what they used to be, I prefer to buy these cables already made. Assembly is especially difficult with the 13 pin DIN and 6 pin mini-DIN connectors found on most current radios. Ready-made cables are available from Buxcomm, which sells a vast selection of cables for different modem/rig combinations for about \$22 plus shipping, or from MFJ, which does not have the same large selection. I can give you a link to the proper cable for your modem/rig setup, and you can buy it online.

The Modem

The modem requires power, and fortunately that connection is

one of the few that is standardized. The power connection is the DC coaxial type with a 5.5 mm OD, and a 2.1 mm ID, the center pin being positive (be careful about that, because the penalty for reversing the polarity is the destruction of the modem!). The nominal voltage is 13.8 V DC at about 750 ma, either from the supply in your shack (not recommended, since this might cause ground loop problems) or via a separate supply. "Wall wart" transformer supplies are ideal; just make sure you get one with the right voltage and sufficient current capacity. I recommend one with at least 1 amp capacity. And please check the output voltage. I have spent several weeks and multiple modems getting a DRS online, only to find that his power supply was only supplying 4 V DC. The modem was not happy with that.

The Antenna

Any antennas that works for you on 80 and 40 meters is fine, although an NVIS configuration can be advantageous. As a DRS, you do not need an elaborate automatic antenna tuner, since you will be operating on one frequency at a time.

The Computer

Lastly, you need a computer, which also doesn't have to be the latest and greatest. The primary software used by a DRS is Airmail 2000, which will run on any Windows computer from Windows 95 through Windows 7. The version suggested for use is version 3.3.081, which can be downloaded from <http://siriuscyber.net/ham/>. Be sure to get version 3.3.081 and not the "beta" 3.4.062 version, which has shown some problems. While you are on the download page, scroll down more and download and install the IPEPAC propagation program. Along with the Airmail SystemNTSD.ini file that you will get from your ADC, this program will help you to determine the best frequency to connect to the Hub/MBO at a given time of day.

The PACTOR 1 modems are older designs with a physical serial port (female DB-25 pin serial connector). If your computer has an older serial ports with a male DB-9 connector, all you need is a cable to go from the modem to the serial port, male DB-25 on one end and female DB-9 on the other. But life is not always easy. Computers with serial ports are becoming harder to find. If all you have is a USB (Universal Serial Bus) port, you have two options. The best option, in my opinion if you are using a desktop computer, is to buy an add-on serial port board that fits into one of the PCI expansion slots. They come in single, dual, and multiple serial port varieties starting at about \$15 to \$25. Get at least a dual port card (you will see why later).

If you don't have available expansion slots or are using a laptop, you may only have a USB port available. In that case you need a USB-to-serial converter. They also come in single and multiple port configurations. Unfortunately, not all USB-to-serial converters are created equal. Some are up to the task at hand and some are not; usually the cheaper ones are not. Rather than

guess, I suggest you get the NTSD-proven Keyspan HS-19. I have never had one not work. They install themselves with a simple executable program, so you don't have to search for the correct drivers. Amazon (and others) sells them. Here is the link to the Amazon site: http://www.amazon.com/Keyspan-USA-19HS-Hi-Speed-supports-Sequence/dp/B0000VYJRY/ref=sr_1_1?ie=UTF8&qid=1349893840&sr=8-1&keywords=keyspan+usb+to+serial+adapter

Why the dual serial port card? The Airmail software can also control your radio, if the radio is so equipped. For this you most likely will need the second serial port, unless your radio can be controlled directly via a USB connection. Airmail has computer support for most of the recent rigs in the past 20 years. The advantage is that you will no longer have to manually set either the frequency or operating mode on the radio; Airmail will do it for you. For those of you without computer controlled radios, Airmail will tell you which "dial" frequency and what mode (LSB/USB) to set manually on your radio.

Going Live

Once you have everything together, I or one of the other ADCs will walk/talk you through the hookup, installation and setup, either by telephone or via Skype. Skype is a free VOIP protocol that allows free Skype-to-Skype member calls. We use it quite a bit within NTSD for multi-station discussions and conferences. You can get it here: <http://www.skype.com/intl/en-us/home>

If you sign up with Skype, send a connect request to whomever is going to do the walk/talk, so you are on their connection list.

All of this will culminate in your first connection to your "assigned" Hub/MBO and instructions and practice on how to down load and upload traffic. After that, you will be part of the expanding NTSD network. Have fun!

If you want additional details or help, please contact one of the three Area Digital Coordinators (ADC):

Eastern Area: Dave Struebel WB2FTX
wb2ftx@optonline.net or wb2ftx@winlink.org

Central Area: Gary Jones KB0OFD
kb0ofd@centurytel.net or kb0ofd@winlink.org

Pacific Area: Chuck Verdon W5KAV
chuckw5kav@comcast.net or w5kav@winlink.org

NEXT ISSUE: How to become a NTSD Hub/MBO.

Operating Tip

Challenging the Group Count (Check)

Beginning with this issue, we will be including the occasional "operating tip" designed to promote better traffic handling. These tips will cover advanced operating techniques, clarify points of confusion, and promote good operating practices. - Editor

It is not uncommon for an operator receiving a radiogram to find that his group count does not match the check in the message preamble. Here are two recommended practices for challenging the "check" or group count:

Radiotelegraph:

Utilizing the Q-Signal "QTB," follow this example:

For the sake of illustration, imagine W8IHX is transmitting a radiogram to WB8SIW, which, properly drafted, is as follows:

221 R W8IHX 13 MARION IL OCT 30
CLYDE E DARR
137 HILL AVE
HIGHLAND PARK MI 48221
313-832-2806

TRAFFIC HANDLING IS AN ART
FORM PLEASE SUPPORT YOUR LOCAL
NET X 73

ALFRED GREBE

Now...imagine that the receiving operator, WB8SIW missed the word "form" and therefore counts a check of 12. He must solve the discrepancy before acknowledging receipt of the traffic. Therefore, a professional exchange might transpire as follows:

SIW: QTB 12?
IXH: N QTB 13 (BT) T H I A A F P S Y L N X
7 (BT) K
SIW: ? WA ART K
IXH: ? WA ART FORM K
SIW: QSL

In this case, WB8SIW challenged the traffic count. W8IHX confirmed he was incorrect and transmitted the first letter/character of each group. WB8SIW followed along, identified the missing word, and then asked for a fill using the standard procedure of asking for the "word after 'art.'"

Please note that W8IHX would transmit the first letter of each

group slowly and carefully to prevent confusion. After all, he is likely familiar with the famous statement by Associated Press telegrapher and United Press founder Walter P. Phillips: *"It may seem paradoxical, but it is not the speed one makes on a circuit that matters, rather, it is the speed one looses that counts."*

On a related note, let's imagine for a moment that WB8SIW challenged a check after receiving the message and it turned out to be correct. In such a case, the exchange might have been:

SIW: QTB 12?
IXH: C QTB 12
SIW: QSL

Such a situation might apply when the operator transmitting or originating the radiogram realizes he made an error when formatting the message.

Radiotelephone:

A similar procedure applies to radiotelephone communications. Taking the identical example above, the exchange might be:

SIW: Is the group count (or "check") 12, over
IXH: Negative check 13...break...TANGO, HOTEL, INDIA, ALPHA, ALPHA, FOXTROT, PAPA, SIERRA, YANKEE, NOVEMBER, LIMA, XRAY, FIGURE 7...break
over
SIW: Say again word after "art" over
IXH: I say again word after "art," "form," over
SIW: Roger number 221 out.

Of course, radio amateurs don't transmit traffic containing cipher groups and the like, so an alternate procedure would be to substitute the technique using the first letter of each group with simply reading the plain text at "reading speed."

Had the check actually been 12, and the originating station had made an error, the equivalent radiotelephone exchange might have been:

SIW: Is the check 12? over
IXH: Correct, check 12 over
SIW: Roger number 221 out

So there you have it. Challenging the group count according to "Hoyle" while saving time and eliminating inefficiency on a radio circuit.

Do you have an operating tip you would like discussed in *QNI* or do you have a question about proper radio procedures you would like answered? Please drop us a note and ask us. If we don't know the answer, we will find someone who can!

NPG V NSS NR 1644 O T A 151403 NPM GR AA BT
TRANSMIT FOLLOWING TO JAPANESE GOVERNMENT BY ANY MEANS AVAILABLE X
TO THE JAPANESE EMPEROR
THE JAPANESE IMPERIAL GOVERNMENT
THE JAPANESE IMPERIAL GENERAL HEADQUARTERS
FROM SUPREME COMMANDER FOR THE ALLIED POWERS

PURSUANT TO THE ACCEPTANCE OF THE TERMS OF SURRENDER OF THE ALLIED POWER BY THE EMPEROR OF JAPAN CMA THE JAPANESE IMPERIAL GOVERNMENT AND THE JAPANESE IMPERIAL HEADQUARTERS CMA THE SUPREME COMMANDER FOR THE ALLIED POWERS HEREBY DIRECTS THE IMMEDIATE CESSATION OF HOSTILITIES BY JAPANESE FORCES PD THE SUPREME COMMANDER FOR THE ALLIED POWERS IS TO BE NOTIFIED AT ONCE OF THE EFFECTIVE DATE AND HOUR OF SUCH CESSATION OF HOSTILITIES CMA WHEREUPON ALLIED FORCES WILL BE DIRECTED TO CEASE HOSTILITIES PD PARA THE SUPREME COMMANDER OF THE ALLIED POWERS FURTHER DIRECTS THE JAPANESE IMPERIAL GOVERNMENT TO SEND TO HIS HEADQUARTERS AT MANILA CMA PHILIPPINE ISLANDS CMA A COMPETENT REPRESENTATIVE EMPOWERED TO RECEIVE IN THE NAME OF THE EMPEROR OF JAPAN CMA THE JAPANESE IMPERIAL GOVERNMENT AND THE JAPANESE IMPERIAL VEKDRAL HEADQUARTERS CERTAIN REQUIREMENTS FOR CARRYING INTO EFFECT THE TERMS OF SURRENDER PD THE ABOVE REPRESENTATIVE WILL PRESENT TO THE SUPREME COMMANDER FOR THE ALLIED POWERS UPON HIS ARRIVAL A DOCUMENT AUTHENTICATED BY THE EMPEROR OF JAPAN CMA EMPOWERING HIM TO RECEIVE THE REQUIREMENTS OF THE SUPREME COMMANDER FOR THE ALLIED POWERS PD PARA THE REPRESENTATIVE WILL BE ACCOMPANIED BY COMPETENT ADVISORS REPRESENTING THE JAPANESE ARMY CMA THE JAPANESE NAVY AND THE JAPANESE AIR FORCES PD THE LATTER ADVISOR WILL BE THOROUGHLY FAMILIAR WITH AIRDROME FACILITIES IN THE TOKYA AREA OF THE ABOVE PARTY UNDER SAFE CONDUCT AS PRESCRIBED AS FOLLOWS COLON PARTY WILL TRAVEL IN A JAPANESE AIRPLANE TO AN AIRDROME ON THE ISLAND OF IE SHIMA CMA FROM WHICH POINT THEY WILL BE TRANSPORTED TO MANILA CMA PHILIPPINE ISLANDS CMA IN ABLE UNITED STATES AIRPLANE PD THEY WILL BE RETURNED TO JAPAN IN THE SAME MANNER PD PARTY WILL EMPLOY AN UNARMED AIRPLANE CMA TYPE ZERO MODEL TWENTY TWO CMA LOVE TWO CMA DOG THREE PD SUCH AIRPLANE WILL BE PAINTED ALL WHITE AND WILL BEAR UPON THE SIDES OF THE FUSELAGE AND TOP AND BOTTOM OF EACH WING GREEN CROSSES EASILY RECOGNIZABLE AT FIVE HUNDRED YARDS PD THE AIRPLANE WILL BE CAPABLE OF INFLIGHT VOICE COMMUNICATIONS CMA IN ENGLISH CMA ON ABLE FREQUENCY OF SIX NINE SEVEN NOUGHT KILOCYCLES PD AIRPLANE WIL PROCEED TO AN AIRDROME ON THE ISLAND OF IE SHIMA CMA IDENTIFIED BY TWO WHITE CROSSES PROMINENTLY DISPLAYED IN THE CENTER OF THE RUNWAY PD THE EXACT DATE AND HOUR THIS AIRPLANE WILL DEPART FROM SATA MISAKI CMA ON THE SOUTHERN TIP OF KYUSHU CMA THE ROUTE AND ALTITUDE OF FLIGHT AND ESTIMATED TIME OF ARRIVAL IN IE SHIMA CMA WILL BE BROADCAST SIX HOURS IN ADVANCE CMA IN ENGLISH CMA FROM TOKYO ON A FREQUENCY OF ONE SIX ONE TWO FIVE KILOCYCLES PD ACKNOWLEDGEMENT BY RADIO FROM THIS HEADQUARTERS OF THE RECEIPT OF SUCH BROADCAST IS REQUIRED PRIOR TO TAKE DASH OFF OF THE AIRPLANE PD WEATHER PERMITTING CMA THE AIRPLANE WILL DEPART FROM SATA MISAKI BETWEEN THE HOURS OF NOUGHT EIGHT NOUGHT NOUGHT AND ONE ONE NOUGHT NOUGHT TOKYO TIME ON THE SEVENTEENTH DAY OF AUGUST ONE NINE FOUR FIVE PD IN COMMUNICATIONS REGARDING THIS FLIGHT CMA THE CODE DESTINATION QUOTE BATAAN UNQUOTE WILL BE EMPLOYED PD PARA THE AIRPLANE WILL APPROACH IE SHIMA ON ABLE COURSE OF ONE EIGHT NOUGHT DEGREES AFD CIRCLE LANDING FIELD AT ONE NOUGHT NOUGHT NOUGHT FEET OR BELOW THE CLOUD LAYER UNTIL JOINED BY AN ESCORT OF UNITED STATES ARMY PETER DASH THIRTY EIGHT SUGAR WHICH WILL LEAD IT TO ABLE LANDING PD SUCH ESCORT MAY JOIN THE AIRPLANE PRIOR TO ARRIVAL AT IE SHIMA

MACARTHUR
BT 150503Z
1416 15 AUG 45

Another historic message. This is a teletype message received on a US Navy circuit announcing the arrangements for the surrender of Japan. The use of punctuation and some of the procedures utilized in formatting the message may prove of interest to traffic handlers. In particular, the use of "CMA" for "comma," "PD" for "period," "Para" for a new paragraph, and the like.

The New Requirement for Zip Codes

By Marcia, KW1U

Those of us who have been active in the "traditional" NTS network for years have developed a habit of addressing service messages and the like to a particular call sign. However, with the advent of NTSD, it is necessary to take into account the requirements for traffic that may move from NTS to NTSD. This includes the requirement for appending a proper zip-code to all addresses so they may be automatically routed in the event they are transferred to NTSD. For example, it is no longer sufficient to address a service message simply to "N1IQI." Rather, the minimum address one should use for such a service message would be

N1IQI
PEMBROKE MA 02359 — Editor

I recently received two messages for relay to addressees that are apparently well known. In both cases, a full address was not used.

I would like to make a request to all concerned that zip codes be included with all originated traffic. After much discussion amongst traffic handlers, I think we have concluded we need all modes; CW, voice, and digital. However if a message is put into the digital system at any point it ***must*** have a zip code for routing purposes. I have often had to look up zip codes for autoforwarding via NTSD.

I would like to see all traffic that might enter NTSD (and that is almost all traffic) have a zip code included. A call sign database is an easy source for such information.

Thanks for your consideration.

73, Marcia KW1U
MBO in MA

A State of Confusion

By David Struebel WB2FTX

Some have reported a bit of confusion regarding the structure of the WL2K System and the NTSD System. Here is a simple way to understand the difference:

The NTSD System forwards traffic entirely by RF using digital modes, such as PACTOR. This traffic is placed in the system at the Section or perhaps Region level, it then moves across the country using digital means to its destination Section.

On the other hand, the WL2K System might be seen as a group of RF to Internet Gateways. Like NTSD, the WL2K System uses

PACTOR, as well as packet radio methods. However, each WL2K node might be seen as a gateway to the Internet. As soon as one originates radio e-mail, it moves directly into the Internet via the gateway. The rest of its journey is via Internet methods.

Some confuse the WL2K System with NTSD. While both systems may use the same digital modes, NTSD does **NOT** rely on the Internet to function. In a sense, it functions in much the same manner as the traditional NTS method of layered nets, only with automatic routing, forwarding, and storage of message traffic.

The Need for 160-meters

By James Wades, WB8SIW

Some years ago, the Michigan Net, QMN set up a CW net to support a 200-mile dog sled race in Michigan's Upper Peninsula. It was an enlightening experience for many. Several "no code" technicians were shocked to see the CW Net Control walking nicely printed, professional quality messages forms containing numerical data and times across the hall to the race coordination center while the voice operators on two meter FM were still struggling to transfer less complex data by voice.

In reality, the voice operators could have been equally efficient, but none had real traffic handling experience. On the other hand, the CW operators were comfortable with operating in an environment in which brevity and efficiency is paramount and in which standardized procedures are essential to a properly functioning network.

As the evening progressed into the nighttime hours, we relied extensively on a volunteer from Louisiana who served as a relay station. We had anticipated a long propagation path and had arranged for volunteers from the former "NREN" network to be available in the event 80-meters went long.

The dog sled race situation serves as an excellent parallel to a disaster operation, which could occur late at night during the solar minimum. How would your Section Net function when the "skip" is so long that direct statewide communications is not supported on 80-meters.

One answer that has proven effective is the development of 160-meter capability. 160-meters shares many characteristics of both the medium frequency and high frequency range. It is not uncommon for one to have good quality communications throughout a Section on 160-meters when 80-meters proves unusable.

For many years, Amateur Radio manufacturers did not offer equipment equipped for 160-meters. This had much to do with international frequency allocations, the LORAN network, and

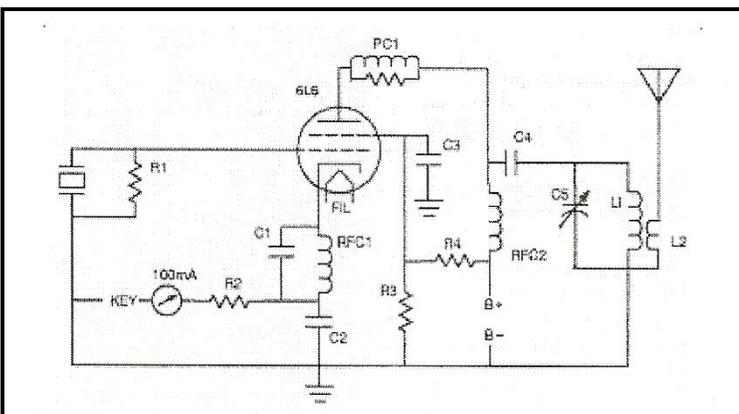
so forth. However, in recent years, one is seeing a wide range of commercially manufactured equipment equipped for 160-meters. Likewise, one can still build a simple crystal control transmitter for 160-meters. For example, the 6L6 vacuum tube is still manufactured and it remains popular for a variety of audio applications, in particular, guitar amplifiers. The once popular QSL-40 circuit remains viable today and a simple 160-meter transmitter can be built inexpensively in a single evening on a work bench. Older "boat anchor" receivers remain quite serviceable and function well on 160-meters. In addition to offering a bit of nostalgia, such equipment can get on 160-meters at very little expense.

Perhaps the biggest "deal breaker" for many hams is the antenna. While a full size 160-meter dipole may be impractical for those living in urban or suburban settings, almost any random wire of reasonable length can be used on 160-meters. "Marconi" antennas operated against ground (or a counterpoise) can be made quite efficient through good grounding techniques. Once one has sufficient length to obtain a reasonable radiation resistance, current distribution along an antenna can be improved in a variety of ways. This includes using a "flat top" configuration or adding a loading coil near the end of the antenna (base loading is less efficient).

Several manufacturers, such as "Alpha Delta" offer trap dipole antennas equipped for 40, 80 and 160-meters. These models are ideal for traffic handlers who primarily concentrate their public service activities on these bands.

On a final note, consider the 75 or 80-meter mobile antenna. Despite a very low radiation resistance, the use of a low-loss loading coil near the top of a mobile whip and the addition of a small capacity hat of some type allows one to radiate a useable signal. Certainly, one can radiate a far better signal from a fixed station location using 60 to 100-feet of wire and a good ground system designed to minimize I-squared-R losses in the soil.

By adding 160-meter capability, Section Nets that operate primarily during NTS Cycle 4 can maintain reliable communications and ensure efficient traffic exchange during both routine operations as well as in time of emergency during the solar minimum.



The classic QSL-40 circuit. 350 to 450 volts B+ will not stress the tube or crystal, resulting in a reliable 160-meter signal. This circuit is ideal for those who lack a current transceiver with 160-meter capability.

Parts list for QSL-40 circuit:

- R1: 56K 1 watt resistor
- R2: 220 1 watt resistor
- R3: 12K 5 watt resistor
- R4: 6K 5 watt resistor
- C1: 50 pF mica/mylar
- C2: 0.001 mF mica
- C3/C4: 0.002 mF mica
- C5: 150 pF variable
- RFC1/2 2.5 mH 125 mA RF chokes
- PC1: Parasitic choke—8 turns No. 20 on 47 ohm/1 W Resistor
- L1 Tank 54 turns #22 enamel wire on 1.5 inch form
- L2 Line to antenna 8 turns #22 enamel on 1.5 inch form

California Shakeout

By Kate Hutton, K6HTN, LAX STM
and Robert Allen, W0RJA, LAN NM

The annual Great California ShakeOut, the largest earthquake drill in the United States, recently had its fifth occurrence, on October 18.

Each community uses a scenario that involves a fault near their location. Los Angeles and the surrounding towns still use the original scenario, which features a magnitude 7.8 earthquake on the San Andreas Fault, starting just east of the Salton Sea and subsequently breaking northward along the fault past Palmdale. Ground shaking lasts for up to two minutes in some locations. Such an earthquake would disable Interstates 10, 15, and 14, along with the railroad, power lines, pipelines and fiber optics that intersect the San Andreas Fault in Cajon Pass and San Geronio Pass. Two of the three aqueducts supplying water to metropolitan Los Angeles, Orange County, and San Diego would be disrupted and need extensive repairs. In the scenario, the entire western power grid goes down, landline and cell systems are damaged and/or become overloaded, and the internet effectively slows to a halt.

More than 9 million people participate in the drill at one level or another. Most just stop what they are doing at the time of the "earthquake" and get under a desk, sturdy table, etc., to avoid potential falling objects. Others, such as CERT team members and ARES, ACS and DCS radio operators, have a more extensive activation.

ARES/NTS

Most of the hospitals that are served by ARES LAX have a

state-mandated drill in November, so declined to participate in ShakeOut this year. Some ARES members operated anyway, from the parking lot of their assigned hospital. Normally, the Section Manager David Greenhut N6HD directs each deployment in a drill to send him a radiogram listing the operators who were present. Those messages very seldom happen, however.

Robert Allen W0RJA and Jutti Marsh K6FRG helped out at a large safety fair that morning at the Los Angeles Metro Union Station, a major hub for Amtrak, light rail, and the bus system. (The Metropolitan Transit Authority briefly stopped all busses and light-rail trains at the time of the "earthquake", this year.) ARES and NTS shared a table at the safety fair. One of several ARES net control stations was there. NTS had a WL2K packet station, prepared to take sample "THIS IS ONE WAY I MIGHT CONTACT YOU AFTER A MAJOR DISASTER HERE" radiograms to people's out-of-state emergency contacts, via Section MBO K6RXX.

Simplex nets

NTS also operated 2 meter simplex nets at three different times, processing a few out-of-state contact messages for "RN6", which were sent digitally, for the sake of speed, and some deployment messages for the SM. LAX Section has some geographic challenges, so quite a bit of relaying was involved within the nets. Net Control Jack KO6V had a good strategic site, however, at a former Nike base, now park, in the Santa Monica Mountains, overlooking both San Fernando Valley and Los Angeles Basin.

Gary Apgar NY6Y operated a single sideband net, also.

TEST W

Kate Hutton (K6HTN) tried to elicit out-of-state contact traffic at her work place, where there was a rather large internal drill. We submitted the following blurb: "

Contact your Out of State Emergency Contact via Amateur Radio ... From 9am-1pm members of Caltech's Amateur Radio Club (CITARC) will allow members of the Caltech Campus to send a short sample message such as: "This is one way I might contact you after a disaster," to their Out of State friend or family member located in the US or Canada. Senders must have either the email address of the recipient, or complete address & telephone number. The messages will leave campus via HF radio and go to an "internet gateway" ham station outside the affected area. The messages that do not have email addresses will be delivered by telephone by a ham outside of California. To participate in this, see one of the ham operators at the CITARC radio room on the second floor of Winnett or in the Seismo Lab."

The blurb ended up not to be easy to find in the final drill instructions, however, and NTS received only six pieces, mostly from drill organizers.

There was a NTS volunteer, Alice Bennet, K6BNT, assisting the campus radio club during the drill.

All We Needed Was Traffic

The conclusion seems to be that, although we were set up and ready to go, and dialed in with ARES, we got almost no traffic. We processed eight pieces for "RN6" and heard perhaps two deployment messages bound for the SM.

At the safety fair, our people did hand out a lot of literature on amateur radio and on the importance of having an out-of-state contact. They talked with a large number of interested people. Just no traffic.

Anticipated Problems

In the real "Big One," most people will not be able to recall or find contact information for their out-of-state contact.

Los Angeles is place of many immigrants. When we do public events such as the LA Metro safety fair, many people ask to send a message to relatives in other countries, especially Latin America. We have to explain that the National Traffic System has no infrastructure to do that, even for nations that have a third-party agreement with us, although such an infrastructure might arise in a real disaster.

With the exception of a core group of three people, all NTS members are also ARES members. This may help with tactical traffic at deployment sites, but will leave the NTS personnel badly stretched. It does not help that the STM is a seismologist.

We still do not have enough WL2K packet gateway stations, or members able to operate WL2K (WINMOR or PACTOR) on HF. We do have at least four NTS operators that are able to operate portable Winlink packet stations at remote sites. There is no auxiliary MBO station.

Considering that five years ago, LAX Section barely had nets, we are actually doing pretty well. But it sure feels like tilting at windmills sometimes. Really big windmills ... magnitude 7.8 windmills!

SEND US YOUR ARTICLES! Perhaps your ARES organization has had a recent emergency drill? How did it go? What is your NTS net or ARRL Section doing to improve NTS? What ideas do you have to promote NTS and improve our program. Let's hear from you! Send your articles to: jameswades@gmail.com

**QNI
The NTS
Newsletter**

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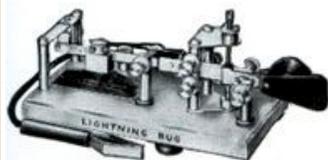
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**ARES and NTS at LA City Hall
By Robert Allen, W0RJA**

On Saturday Sep 22, members of the LAX Section ARES and NTS groups provided communications for the Los Angeles Congress of Neighborhood Councils at city hall. Los Angeles has roughly 90 Neighborhood Councils, organized to allow clear, consistent communication of concerns and suggestions between city government and the individual neighborhoods. The leadership of these Councils meet annually to discuss areas of mutual interest.

ARES operators provided tactical communications between various fixed areas of the event, roving operators, and dedicated "shadow" operators for certain individuals.

The three NTS operators present, who are ARES members as well, set up and operated a mobile 2-meter/440-mHz and packet WinLink2000 station. While not many radiograms were generated, there was great interest among the attendees. A large amount of printed materials was distributed. A large number of pocket sized out-of-state emergency contact cards were handed out

as well. Members of the public often have a difficult time recalling enough address and telephone information to send their closest relatives a radiogram, even under calm circumstances.

As a side note; the Los Angeles City Hall is an imposing 32-story reinforced concrete structure. It was upgraded in the mid-1950s for nuclear survivability, and again between 1998 and 2001 for seismic retrofit. It is currently the tallest base-isolated structure in the world. Communications worked quite well into and out-of the building, using UHF hand-held radios at 5 watts. The NTS packet station was able to connect with two of the local gateway stations, from a patio location, surrounded by similar concrete-and-steel "boxes."

LAX ARES and NTS participate together in a large number of events and drills each year, exercising our skills and equipment at new locations, with their individual communications challenges. These activities also help us promote the capabilities of the NTS to the amateur radio community and also the general public.

A Christmas Bit

*If I were Santa Claus this year
I'd change my methods for the day
I'd give to all the children here
But there are things I'd take away*

*I'd enter every home to steal
With giving I'd not be content
I'd find the heartaches men conceal
And take them with me when I went*

*I'd rob the invalid of pain
I'd steal the poor man's weight of cares
I'd take the prisoner's ball and chain
And every crime that sent him there*

*I'd take the mothers fears away
The doubts which often fret the wise
And all should wake on Christmas Day
With happy hearts and shining eyes*

*For old and young this is my prayer
God bless us all this Christmas Day*

*And give us strength our tasks to bear
And take our bitter griefs away.*

By Edgar Guest

Edgar Guest was a well known figure in Detroit for many years during the early 20th Century. His homespun poetry appeared regularly in the *Detroit Free Press* and he was a regular guest on local radio programs, at major civic events and other important functions.

It is the hope of your Editor that this poem will encourage our readers to shift their focus from the misguided consumption that now dominates the holiday season to the things that really count, such as faith, family, friends and community.

Our best wishes to all for a happy, healthy, and stress-free holiday season.