QNI NEWSLETTER

JANUARY, 2022

BIG NEWS! IMPORTANT CHANGES TO THE DIGITAL TRAFFIC NETWORK

Thanks to the hard work of our Digital Traffic Net staff, users of DTN are no longer limited to the use of a PACTOR hardware modem. Over the past year, DTN region nodes have been converted to facilitate parallel VARA access.

For those unfamiliar with VARA, this is a high-performance sound-card mode that is now commonly used for Winlink access. Now, all that's required to act as a DTS representative is a computer sound card or inexpensive sound-card interface, inexpensive software, and your regular HF transceiver.

With this change, state/section nets are encouraged to recruit additional Digital Traffic Stations to provide more robust liaison to the RRI Digital Traffic Network. See the articles on pages 4 and 7 for more details.

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Winter Issue

In this issue:

QNI MISSION STATEMENT

QNI is dedicated to promoting 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 any particular net or emergency communications organization.

Our mission is to provide a forum for EmComm 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.

THE FIRST BROADCAST STATION?

By James Wades (WB8SIW)

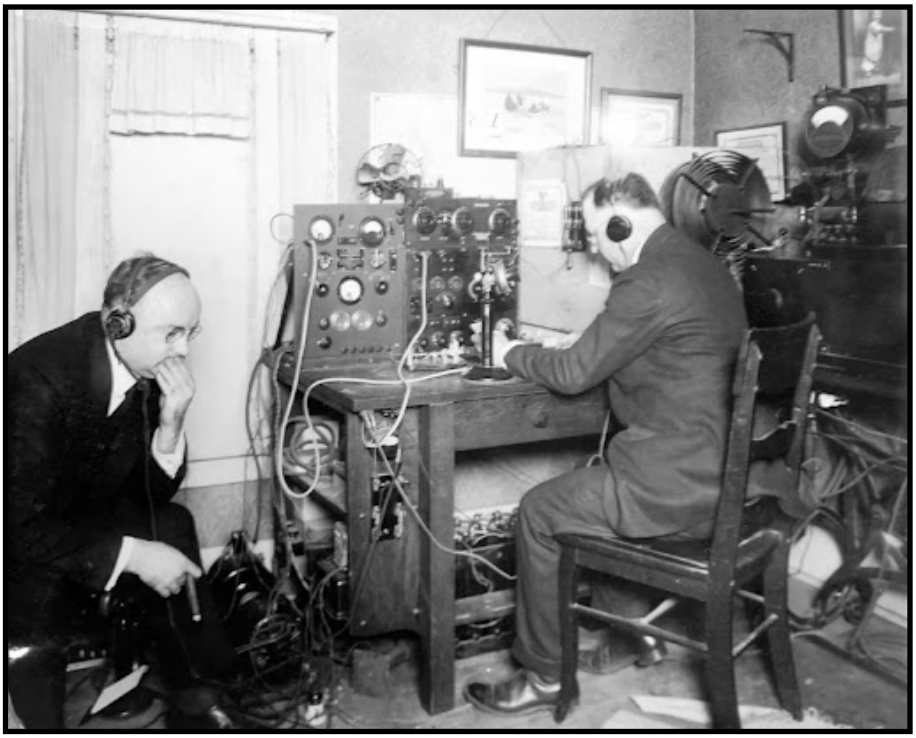
Most historians credit KDKA as the first broadcast station. This assertion is typically based on the fact that KDKA commenced operation on November 2, 1920 using a commercial license. However, one might argue that this credit to KDKA is tenuous at best.

Certainly, KDKA was preceded by a variety of experimental broadcasts by such notable pioneers as Fessenden, DeForest and Charles Herrold, who began conducting experimental transmissions as early as 1909. Fesseneden's famous Brant Rock broadcast occurred in 1906. However, none of these experiments actually gave birth to a broadcast industry as currently conceived. Experimental in purpose, these early activities did not anticipate news and entertainment distribution to a non-technical audience.

There are likely only two erstwhile competitors for the title of "first broadcast station" that incorporate the required concept of distributing news, information and other content of general interest to a listening audience using radiotelephone, these being WWJ in Detroit and KDKA in Pittsburgh.

When analyzing priority in broadcasting, it's important to understand that the early development of the radio industry occurred under the regulatory framework of the Radio Act of 1912, which was long obsolete by 1920. The commercial license issued to KDKA was not a broadcast license as we conceive of it today. Such licenses were issued under a regulatory framework that anticipated point-to-point radiotelegraph or maritime service.

WWJ radio in Detroit is perhaps the closest competitor to KDKA and an argument can be made that it was actually the first successful broadcast station, having been on-air with regularly scheduled broadcasts since August of 1920, nearly three months longer than KDKA. These early broadcasts anticipated an audience and were conducted with the intent of distributing news and information to a widespread audience.



Clyde Darr broadcasting from his home in Highland Park, Michigan while a representative of the Detroit News observes the activity.

Both KDKA and WWJ grew out of the experiments of local radio amateurs. In the case of KDKA, Frank Conrad (8XK), an employee of Westinghouse, was conducting experimental broadcasts from his home in Pittsburgh. These broadcasts attracted the interest of Westinghouse executives, a few of whom foresaw the potential of broadcasting.

WWJ also grew out of experimental broadcasts by a prominent radio amateur, Clyde Darr (8ZZ), who is perhaps best remembered for his art work featured on most of the QST magazine covers throughout the

1920s. Darr's broadcasts from his home in Highland Park, Michigan were gathering the interest of experimenters and radio enthusiasts throughout Michigan, one of whom was James E. Scripps of the Detroit News. It wasn't long before the newspaper decided to work with Darr and other members of the Detroit Radio Association to establish a broadcast station at their office on Lafayette Street in Downtown Detroit.

8MK / WWJ control room before Western Electric broadcast equipment was installed.

WWJ officially commenced broadcasting on August 20, 1920 using an Amateur Radio License (8MK). It is here that confusion develops along with a bit of generational myopia, for in history the details are rarely simple and context is often lost.

Whereas KDKA had the advantage of being sponsored by Westinghouse, which had access to a variety of patent rights not available to other manufacturers, including vacuum tube patents and their various applications, the team at the Detroit News did not have this advantage. Initially, a DeForest radiotelephone transmitter was purchased, but DeForest had sold the commercial rights to his vacuum tube and transmitter technology, while retaining only the right to sell to radio amateurs and experimenters. Therefore, the Detroit News project had no choice but to commence broadcasting under an Amateur Radio License to avoid infringement on patent rights controlled by the Radio Trust (RCA, Westinghouse, AT&T, General Electric).

A somewhat later view of the WWJ control room showing more specialized transmitting equipment.

Eventually, this problem would be sorted out and WWJ would install a Western Electric transmitter and obtain a commercial license, but the fact remains that the issue of a commercial license versus an early Amateur Radio License, both of which were issued under the obsolete framework of the Radio Act of 1912, as well as within the constraints of a problematic monopoly created by FDR and Woodrow Wilson's in the form of the RCA Radio Trust assembled in 1919, renders the licensing argument a questionable standard at best for priority in broadcasting.

As an aside, and perhaps another example of the importance of the influence of the RCA monopoly can be found in the pioneering experiments in radio dispatching by the Detroit Police Department later in the decade of the 1920s.

The first practical police dispatch station had to borrow vacuum tube "pulls" from local broadcast stations to stay on-air, as its pioneering transmitter facilities were not a product of the radio trust and its monopolistic practices. Therefore, RCA would not sell vacuum tubes directly to the DPD pioneers who built the facility. Furthermore, like the early radio broadcast stations, the Detroit Police Department's early radio dispatching experiments also struggled with licensing under the obsolete regulations, first being licensed as a regular "entertainment" broadcast station (KOP) and later as an experimental station. As with the birth of broadcasting, there were no prior definitions for a "police radio" service. For a time in the early days of DPD radio dispatching, the department was even required to broadcast musical entertainment between police calls to comply with the letter of the law!

So one can easily see that the credit given to KDKA is tenuous at best. One might argue that the influence of a major manufacturing company behind a project also facilitated a certain leverage to control the historical narrative.

Therefore, one can probably make a strong case that WWJ is the first and oldest continuously operating broadcast station in the United States as well as the first station to combine both broadcast activity with the promotion and development of an audience as a customer base for its broadcasts.

Finally, an analysis of this history of broadcasting reveals a fundamental truth about history. In recent years, there has been a tendency to analyze and measure past historical events and historical figures by modern sensibilities based on modern political impulses. This generationally myopic approach can lead to questionable or incomplete conclusions. In any era, people must operate within the margins of their time, constrained by a limited range of legal, social and philosophical constraints. A failure to operate within these constraints naturally leads to marginalization or failure, if not an adjudication of insanity. Therefore, a proper measure of any historical event or any historical figure must take the constraints of that time into account. As one can see from this analysis of the early days of broadcasting, the constraints in which these radio pioneers operated had a profound influence on the actions taken.

On a related note….the "official" centennial of broadcasting in 2020 has now passed with hardly a whimper, leading one to wonder if radio broadcasting as we know it will see its sesquicentennial in 2070. More about this in another article…..

HOW TO SET UP VARA TO ACCESS DTN HUBS

By Jim Kutsch (KY2D) Eastern Area Digital Manager

INTRODUCTION

Some RRI Eastern Area Digital Traffic Network (DTN) HF hub stations are offering experimental access through the VARA digital mode in addition to the traditional Pactor I, II, and III modes. Typically, all frequencies scanned by hub stations offering VARA listen for either Pactor or VARA calls and respond accordingly. The advantage of VARA is that it does not require a hardware modem. VARA is a digital communications mode generated and decoded using a computer sound card. As with other sound card modes such as FT8, audio and PTT connections need to be made between the computer and the transceiver.

Other than that, accessing the DTN hub only requires two software packages on the station computer.

This document describes how to set up an HF Digital Traffic Station (DTS) and send digital radiograms over the DTN using VARA. Also, those stations that normally retrieve traffic from a hub station over HF can use VARA to pick up any traffic in their message queues. Based on feedback from those stations accessing KY2D via VARA, VARA access has moved from experimental to a standard offering on the KY2D hub. Further, other DTN hub stations are adding VARA access. The remaining portion of this document explicitly references use of the KY2D hub in the examples, but access to any other VARA-equipped DTN hub station should be the same except for changing KY2D to the callsign of the other hub.

SOFTWARE

To access the KY2D hub via VARA requires the VARA HF modem software. It can be downloaded from https://rosmodem.wordpress.com. Look for the VARA HF modem. The software runs at slower speed for free, which is fine for testing. Paying the license fee unlocks high speed. KY2D will accept both slow and high-speed connections and automatically negotiates speed with the other station.

At the time of writing this document, the VARA software is not integrated with the software typically used by DTN stations, Airmail or Outpost PMM. To use VARA, Winlink Express is needed. A download for Winlink Express can be found at https://downloads.winlink.org/User%20Programs.

A Winlink email account is not needed to use Winlink Express to send radiograms over HF VARA in DTN. Winlink Express is only used as the message display and input mechanism. The messages will all be sent over the air.

HARDWARE AND CONNECTIONS

The only hardware that is needed is a computer sound card. It can be a simple USB external sound card or something like the SignaLink. It's important **not** to use the computer's built-in sound card. Doing so can far too easily result in Windows sounds or other computer audio being inadvertently sent over the air.

The audio output from the sound card needs to be connected to the radio's mic input. Even better is using AUX-in or line-in if either of those are available on the radio. The radio's speaker or line-out output needs to be connected to the sound card's input. Finally, a CAT control cable is the preferred way to connect the PTT signal, although VOX can work if the VOX delay is set short enough to quickly drop out of transmit.

Computer control of the radio via CAT is also useful if you wish to put the needed frequencies in Winlink Express. But, entering the frequency manually on the radio works fine.

SETUP

Instructions for setting sound card and rig audio levels are given on the Winlink and VARA web pages and won't be repeated here. In the Winlink Express setup, select the VARA modem option.

FREQUENCIES

The KY2D MBO scans several frequencies listening for both Pactor and VARA calls. Each frequency is monitored for 3 seconds before moving to the next frequency in the list. If a call comes in, KY2D stays on that frequency until the communication is complete then the connection is dropped and frequency scanning resumes. The KY2D frequencies are: 3.5904, 3.5924, 7.1009, 10.1424, 14.0964, 14.1089, 18.1079, and 21.0919.

Note these are stated as "dial" frequencies. The Airmail software table states DTN hub frequencies as center frequencies which are 1500 HZ higher. If Airmail is using CAT control, it automatically sets your rig to 1500 Hz lower than the specified center frequency. Thus, when using VARA with Winlink Express, pay attention to the difference between dial and center frequency.

All frequencies are USB and require a bandwidth setting of at least 2.8 KHz. Set your radio to USB or "audio data" if your radio has a data mode and set bandwidth accordingly. A receive or transmit bandwidth that is too narrow seriously limits data speed and can even completely prevent connections.

PICKING UP MESSAGES

To receive messages, initiate a Winlink VARA call to KY2D on any of the scanned frequencies noted above. If there are messages queued for your station, they will be transferred to your PC and will be marked for deletion on the MBO. Note that connecting to KY2D only retrieves RRI DTN messages in your station's queue. Winlink.org messages are not in that queue. Also note that what messages are to be placed in your queue must be prearranged and configured in the MBO. Thus, unless you already pick up messages from KY2D by Pactor, you do not have a defined message queue and one will need to be set up.

SENDING OUTGOING RADIOGRAMS TO THE DTN

Before sending an outgoing radiogram, it must be entered in Winlink Express. Although there are radiogram templates in Winlink Express, it is better not to use them. They are intended for sending messages via the Winlink network, not the DTN.

Outgoing messages must be addressed in NTS:zip@NTSxx format. Unlike Airmail or Outpost, the address must start with "NTS:" to indicate it's going to the DTN. Then the usual zip code atsign "NTS" followed by the two-letter state or province is given. For example, a message to KY2D would use "NTS:07960@NTSNJ" in the "to" field. Note that there are no blanks in the address string. International messages are addressed as NTS:call@-xxx where "call" is the call sign of the addressee and "xxx" is the 3 letter ISO country code. Note the minus sign preceding the country code. For example, Peter's address is NTS:DL4FN@-DEU.

In the subject line, specify one of:

City followed by callsign of the addressee (e.g., “MORRISTOWN KY2D”
City followed by area code followed by NNX of the addressee, e.g., “MORRISTOWN (973 723”
City followed by - - if no phone is available, e.g., “NEW YORK - -”
Then place the actual radiogram, all in upper case, in the Winlink Express message text area, starting with the usual preamble, e.g.
NR 123 R KY2D 12 MORRISTOWN NJ MAR 29

- Several radiograms can be entered before connecting to the MBO and sending them. However, each radiogram should be entered as a separate message. Once outgoing radiograms have been entered, initiate a connection to the KY2D MBO.

- If you are using Winlink Express to connect to the Winlink network as well as to DTN, be careful. Unlike Airmail, Winlink Express does not have any way too indicate what gateway should be used to inject the message into the network. When a Winlink Express connection is established over the air, **all messages** waiting to be sent will go out to **that** station. If you have entered messages for Winlink.org and for DTN, they both will go out over the next connection. That can put DTN messages into Winlink.org or Winlink messages into DTN. Thus, be careful to enter messages for DTN then connect to a DTN hub station like KY2D and send them before making any other Winlink Express connection.

How to Set up VARA on a DTN BPQ32 Hub Station
By Jim Kutsch (KY2D) Eastern Area Digital Manager

INTRODUCTION

The RRI Eastern Area Digital Traffic Network (DTN) HF hub, KY2D, has been successfully offering experimental access through the VARA digital mode in addition to the traditional Pactor I, II, and III modes. All frequencies scanned by KY2D listen for either Pactor or VARA calls and respond accordingly. The advantage of VARA for new Digital Traffic Stations is that it does not require a hardware modem. VARA is a digital communications mode generated and decoded using a computer sound card. As with other sound card modes such as FT8, audio and PTT connections need to be made between the computer and the transceiver. Other than that, for a DTS to access the DTN hub requires only some additional software on the station computer.

Pactor III is preferred for hub-to-hub message transfer or for hub access by Pactor III equipped stations. Thus, a hub cannot convert completely to VARA mode. However, creating a dual-mode Pactor and VARA hub is not complex. Once done, that hub is available to amateurs who are interested in digital traffic activities but do not want to invest in Pactor modem equipment.

This document describes how to add the VARA digital mode to an existing Pactor-equipped BPQ32 station. Initial setup of a BPQ32 Digital traffic Network hub is well documented elsewhere and is not covered here.

SOFTWARE

Adding the VARA digital mode first requires the VARA HF modem software. It can be downloaded from https://rosmodem.wordpress.com. Look for the VARA HF modem. The software runs at slower speed for free, which is fine for testing. Paying the license fee unlocks high speed, which is advised for hub stations. High speed VARA will accept both slow and high-speed connections and automatically negotiates speed with the other station.

HARDWARE AND CONNECTIONS

The only hardware that is needed is a computer sound card. It can be a simple USB external sound card or something like the SignaLink. It's important **not** to use the computer's built-in sound card. Doing so can far too easily result in Windows sounds or other computer audio being inadvertently sent over the air.

Custom wiring is required to allow both the sound card and the Pactor modem to obtain receiver audio output, and for both sound card and Pactor Modem output to reach the transmitter input. For the audio output of the radio, just assemble a Y cable that connects both the sound card line-in and the Pactor modem line-in together. Connect that to the currently used source of receiver audio output that was previously connected to the Pactor modem.

Additional care is needed in combining the sound card output and the Pactor modem output, to feed a clean signal to the transmitter. At KY2D the combined signals are fed to an AUX-LINE-IN to the transmitter using a broadcast quality audio combiner device. There are several choices, but the passive Radio Design Labs STD600 audio combiner was selected. It can be found multiple places on the web for around $80, but may be available for significantly less on eBay. If the STD600 is used, wire one STD600 port to the audio out of the external sound card, wire a second port to the audio out of the Pactor modem, and wire a third port to the microphone or AUX-In of the radio where the Pactor modem is currently connected. Leave the 4th STD600 port unused.

SETTING LEVEL

After combining the external sound card input and output with those of the Pactor modem, audio levels need to be readjusted on the radio, on the external sound card, and on the Pactor modem. Caution: setting transmit audio levels is complex because the sound card output is much louder than the Pactor modem output. Also, the needed level will depend on whether the combined signal is feeding the transmitter's mic input or a line-in input. Start by setting the sound card output very low in Windows (around 15% or less). The Pactor modem output will need to be set much higher to overcome the loss in the STD600 or similar audio combiner. The sound card and Pactor output levels must be balanced with the transmitter's MIC or AUX-IN gain. Sound card levels are set in Windows, MIC gain in the transmitter, but Pactor output is a BPQ setting. In BPQ32.cfg in the Pactor port stanza, look for the PSKA and FSKA settings. For KY2D they are set to:

PSKA 2900 ;TX Output level. May need optimizing. Default is 140

FSKA 2900

BPQ32 SETTINGS

The VARA HF Modem software must be defined in BPQ32. First, in the Pactor port stanza in BPQ32.cfg, add an "interlock" line to prevent the BPQ system from attempting outbound Pactor and VARA calls from the radio at the same time. Most BPQ32 Pactor-only systems do not need to port share so interlock statements are not typically used. However, if an interlock statement is in use in the hub station configuration, use an unused number where "1" is used in this document. A similar line will be used in the VARA port definition stanza. The interlock numbers in the Pactor port and the VARA port must match. With the interlock statement added, the top of the Pactor port stanza should look like this:

PORT

PORTNUM=4 ; Optional but sets port number if stated

ID=SCS PTCIIUSB Pactor

DRIVER=SCSPACTOR

INTERLOCK=1 ;Prevent simultaneous Pactor and VARA outbound connections

Now create a new port in BPQ32.cfg for VARA. It should look like this:

PORT

PORTNUM=5

ID=HF VARA

DRIVER=VARA

INTERLOCK=1 ;Prevent simultaneous Pactor and VARA outbound connections

PORTCALL=KY2D ;use your own port call

CONFIG

APPL BBS

ADDR 127.0.0.1 8300 PTT CI-V PATH C:\VARA\VARA.exe

ENDPORT

With the above in place, the system can receive incoming VARA and Pactor calls from other BPQ systems. For individual Digital Traffic Stations using Winlink Express to call, the needed settings in the User and Forwarding tables on the hub are described later.

SCAN FREQUENCIES

With the suggested BPQ32 settings shown above, the hub will listen for both Pactor and VARA calls on all scanned frequencies defined in the Rig Control section of the Pactor port stanza.

MAKING OUTBOUND VARA CONNECTIONS

To make outbound connections to a VARA-capable hub, modify the "Connect Script" for that station in the forwarding definitions. All that needs to change is the port attach command in the "ATT x" line. Assuming the Pactor port is 4 and the VARA port is 5, just change "ATT 4" to "ATT 5" for the station being called. The station can even be called on VARA, then on Pactor if desired. As an example, this Connect Script would try calling KY2D on VARA then if the VARA call fails, Pactor would be tried:

ATT 5

RADIO 3 .5904 USB

C KY2D

ELSE

PAUSE 5

ATT 4

RADIO 3 .5904 USB

C KY2D

ENABLING VARA ACCESS FOR DIGITAL TRAFFIC STATIONS TO THE DTN

Please refer to "Using VARA TO ACCESS KY2D" before setting up VARA access for Digital Traffic Stations. The DTS needs to use Winlink Express and observe certain addressing practices.

The Demise of AM Radio?
An Editorial by James Wades (WB8SIW)

An old RCA radio from the 1950s sits atop a table in the family room of our remote lake cabin in Michigan's Upper Peninsula. Despite its age, it continues to see service as an important entertainment and information device in an area lacking cable television, terrestrial Internet service, or even reliable cellular service.

Like most radios of its era, it lacks an FM band. Yet, it continues to provide a level of service not available via FM radio. During the day, it reliably receives AM broadcasts from cities as far away as Chicago and Milwaukee, both of which are nearly 300 miles away. It also provides access to programming originated by a variety of smaller stations located throughout Wisconsin and Northern Michigan. At night, it does its job as a gateway to North America. If one wants authentic country music, he can tune in WSM from Nashville. If one wants to hear the Chicago White Sox play baseball, it's there for the asking via WMVP. If one wants to hear French language programming, its available direct from Montreal via CJBC.

Unlike FM radio, with its limited coverage area, the AM band continues to provide access to diverse, locally produced news, information. and sports broadcasts transmitted over a wide area by regional and former "clear channel" stations (now somewhat diminished by poor FCC policy). Some of this programming is still produced at "full service" stations that focus on local content and responsible news gathering, thereby providing an alternative to the usual talk-radio opinion formats, the sometimes nauseating "sports talk" stations that spend hours talking about the minutia of a single game, or the various religious stations that operate mostly on charity.

The now ancient radio receiver at the lake cabin also provides some other interesting insights into the status of the broadcast industry. Despite being originally designed as a "radio direction finder" for use on pleasure boats, it not only has excellent sensitivity, but good audio quality. A rotatable antenna atop the receiver allows one to null out interference while enhancing performance, and a simple "single-ended" audio section driven by a low-power vacuum tube somehow provides sound quality that is much better than that from

many current high-end automobile radios operating in the "AM" mode with their "pinched" audio that seems to bludgeon the senses. It certainly out-performs most of the cheap Chinese-manufactured table radios sold in recent decades. One can't help but wonder why so many manufacturers can't produce an AM radio that sounds as good or better than this ancient RCA unit, despite 65 years of technological evolution. It's almost as if someone wants to kill the broadcast industry!

Viewed from the unique perspective of the author, AM radio remains relevant and useful. Yet, for many in the broadcast industry, the funeral for AM radio is already being planned in the form of a pauper's grave. The investment bankers and large media consolidators who have spent years eviscerating the industry in search of higher profits have squeezed the last few remain drops of blood from the stone by eliminating much of the unique, local programming and personality that once tied local radio to its community. In many cases, automation and syndication implemented on a broad scale has created a monotonous, monolithic sound that offers little that is fresh, entertaining, or enlightening. In some cases, radio amounts to a poor man's juke box. Yet, oddly, current management often wonders why radio continues to lose revenue and listeners.

Of course, it's not entirely the fault of radio management. Local advertising revenue has been in a long period of decline as local retail establishments, once the life blood of small/medium market radio revenue, began being supplanted in the 1990s, first by chain retail stores, and now by on-line marketing. Signal quality has also diminished dramatically as the Commission has eviscerated enforcement and systematically ignored the ever increasing level of RF pollution driven by cheap, Chinese switching power supplies and other poorly designed processor-based products that serve as unintentional radiators.

Today, solutions to radio's diminishing social relevance and diminishing revenue are often framed in terms of either technology or a need for further corporate consolidation. Others argue that AM radio in particular must transition to digital broadcasting to survive. A loud chorus is even insisting that the FCC eliminate the few remaining ownership caps. Meanwhile, local programming and promotions are eliminated, local technical support is being eviscerated in favor of "tiger teams" that fly to stations when technical failures occur, and "brokered" radio programs dominate the weekends.

Few want to accept the grim reality that broadcast radio doesn't have a technology problem. Rather, it has a serious management and regulatory problem. The demise of localism, the loss of unique personality, the severing of the perceived interpersonal relationship between on-air personalities and local community, the lack of effective promotions, and uncreative programming, along with the regulatory practices of an FCC held captive by large corporate interests, have all conspired to isolate radio broadcasting as an institution from the community it is supposed to serve.

While the Internet and social media have also played a role in the diminished status and revenue of broadcasting, one must nonetheless ask if doubling-down on the failed management policies of the past 30 or more years is the solution to restoring the industry to some level of status (and profitability) in the popular culture. Certainly, increased consolidation is not working. The large broadcast conglomerates simply can't

assess the needs of local listeners, nor can they successfully build the essential relationship with listeners from a corporate office 1500 miles away. People and communities are diverse and while there is sufficient commonality of interests to support some syndicated programming (talk radio and sports, for example), these limited options are often insufficient to cement the essential local relationship and build that social network called "community."

Outside of some major market exceptions, radio is becoming largely invisible to the public, and it's almost nonexistent to the younger demographics because it no longer fills their needs. Yet, the potential for broadcasting remains. It can build community in a way that serves as an important counterweight to the divisive insularity and tribalism that is being driven by social media validation-feedback loops and corporate social media manipulation. *However, radio can't survive and thrive through increased consolidation, nor can it survive a technological transition that would make an installed base of millions of radios obsolete overnight.*

If the radio business is to survive, steps must be taken to end the failed and destructive media consolidation policies of the past three or more decades. For too many decades now, the FCC has been held as a captive agency by corporate interests. At the policy level, the FCC has ceased to operate as a regulator. It has abrogated its responsibility to protect and enhance the public interest for too long. *Our elected official have ceased to view the RF spectrum as a public resource to be managed on behalf of the American People and in turn, transformed it into a type of "private property" to be parceled out like real estate investments to benefit corporate interests.*

Restoring the industry would require a wide-ranging rework of existing policies. At the policy level, actions ranging from increased enforcement of Part 15 regulations to eliminate RF pollution, to lowered ownership caps in exchange for policies that allow expanded coverage and increased power levels for locally owned service providers could be implemented. The industry itself would also need to develop a relationship with manufacturers to ensure that quality broadcast receivers are available to the public. Most importantly, the industry needs to enter the 21st Century, not through technological change, but by leveraging existing media trends to promote itself as a unique, attractive source of both community and content.

Future success will not come from repeating the same, failed policies of the past three or more decades while nonetheless expecting different results. This is, in fact, the definition of insanity and it speaks volumes about the current media ownership and government policy.

A few Will Rogers quotes:

"*I have always thought that the best doctor in the world is a veterinarian. He can't ask his patients what is the matter; he just has to know.*"

"*A man that don't love a horse, there's something the matter with him.*"

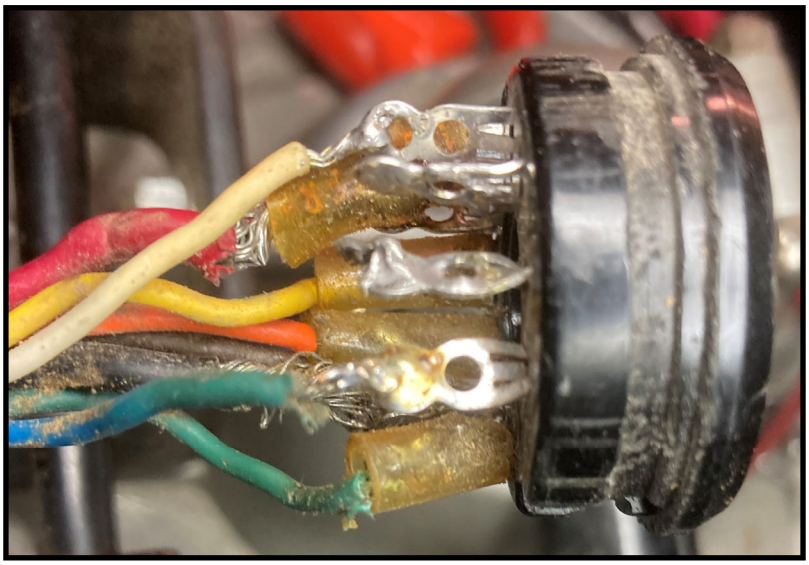
"*No man can be condemned for owning a dog. As long as he's got a dog he has a friend, and the poorer he gets the better friend he has.*"

A Heathkit HW-101
By James Wades (WB8SIW)

The Heathkit HW-101 was perhaps the most popular Amateur Radio transceiver kit ever sold. Introduced in 1970, the kit was in production for thirteen years, with an estimated 30 to 40 thousand units sold. Back during the 1970s, they seemed to be everywhere!

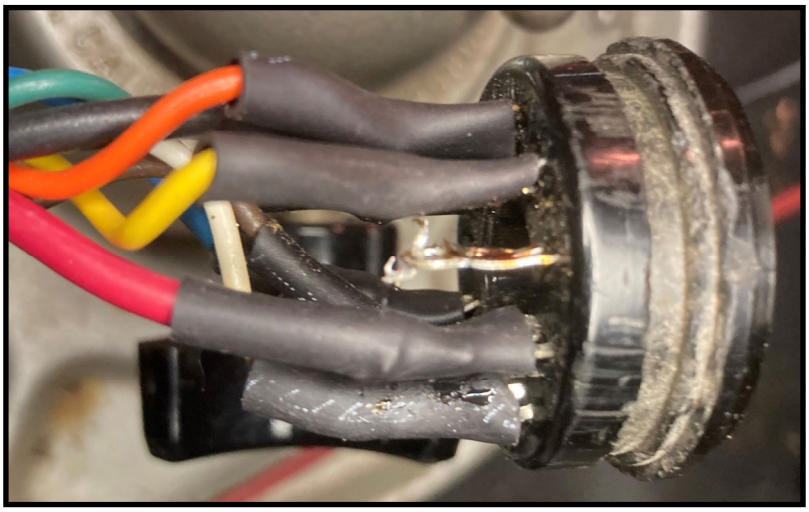
Back during the early 1980s, I built an HW-101 for a handicapped radio amateur. Upon his passing, the transceiver was returned to me by his family. It brought back a few good memories, and the radio itself was still in excellent cosmetic condition, so I decided to restore it. Having been carefully assembled, it likely retaining a solid foundation for current use.

An inspection of the transceiver showed that several resistors and capacitors required replacement. Unfortunately, the original power supply was apparently lost or discarded at some point in the past. However, while preparing for practicums at an equine dental school in Idaho a couple of years ago, I noticed an old Heathkit PS-23 and an HW-18 CAP transceiver sitting atop a shelf in the barn. A couple of inquiries with the owner of the dental school resulted in a gift of the dusty and somewhat corroded transceiver and the associated Heathkit power supply that had belonged to his late business partner.



Above: The power-supply cable as found showing terrible construction practices.

Below: Connections disassembled, de-soldered, cleaned and properly reassembled.



With the HW-101 completed, the power supply was taken out of storage and rebuilt using components purchased from the "Heathkit Shop." Upon completion of the power supply rebuild, it seemed wise to check the condition of the multipair power cord that came with the power supply and which connects the power supply output to the transceiver. Opening the connectors revealed a total mess. Sloppy solder connections, loose wires, and generally poor construction practices were obvious. I decided to completely disassemble both ends of the power cord by de-soldering the pins, cleaning them off with a Dremel tool and wire brush, redressing the cable and properly insulating the individual connections. With voltages upwards of 630 volts on the multipair cable, such things are not to be trifled with. The thought crossed my mind that perhaps the cause of death of the

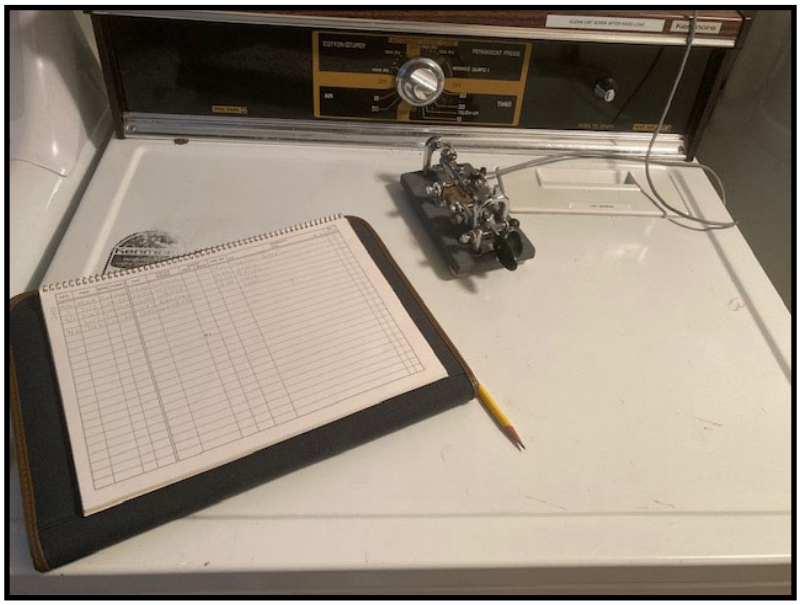
original owner was his own, inexpert assembly practices! When it comes to Heathkits, the moral of the story is "inspect everything carefully." A lot of ham operators were simply not properly trained or sufficiently practiced in electronic construction techniques to ensure a reliable or safe outcome.

After carefully reassembling the cable and double-checking that all conductors were properly assigned to their corresponding pins on the octal connectors, voltage measurements were then performed on the power supply. These too were confirmed for the obvious reasons! It was now time for the "smoke test."

The transceiver was placed on the mobile work bench cart and power was applied. Everything seemed to be working. A length of coax was run from the transceiver to the RF patch-bay in the shack and signals could be heard on all bands. After a quick tune-up, a few stations were worked on 40-meter CW. Over the next few days, it was used to check into some traffic nets. All seemed to be in working order. It was fun to use this old transceiver once again. Heathkit obviously did a good job of engineering this kit.

So, the next question is "what does one do with a forty-year-old transceiver." In my case, it was transported up to the lake cabin where it now lives alongside an old Allied SX-190 receiver for use when I'm at the lake. No longer will I need to drag a transceiver along on trips to the cabin.

Above: The HW-101 installed in the utility room.
Below: The "operating desk" atop the clothes dryer.



Not being as foolish as those who have 5000 square foot "lake homes," our 1940s rustic cabin, located in a remote area, is rather small. As such, the transceiver lives in a small utility room at the back of the cabin where it sits atop a shelf above the washing machine and dryer. The top of a clothes dryer serves as the operating table when not being used to fold clothes. One stands to operate, which is not as bad as it seems. Most of one's time is spent enjoying the outdoors anyway, and most operating is limited to checking into the occasional traffic net or a brief QSO.

It is an interesting experience using this old transceiver. One thing that I've noticed is that some operators seem to rely extensively on narrow filters. Because the transceiver does not have a zero-beat" function, one has to approximate the correct frequency to attain zero-beat. In 1970 or 1980, this wasn't a problem. Most operators didn't rely on narrow filters or they only used them when absolutely necessary, such

as during a contest or under crowded conditions. Things are different today. I have discovered that some net control operators will not hear you unless you're exactly on frequency. If off by a few hundred Hertz or so, you can try to check into a net all you want, but you will never be heard!

Another characteristic of the HW-101 that reveals a change in operating practices is the fact that the HW-101 does not have break-in keying. There is a slight VOX delay at the end of a transmission. When checking into CW nets, nearly all NCS operators don't wait long enough before repeating letters. Even when the VOX delay is set to a minimum such as 500 milliseconds, it's often hard to know whether one has been given the invitation to check-in!

Despite a few hams becoming reliant on very narrow filters as opposed to using the "brain filter," and the lack of delay repeating letters, the transceiver can still be used on the traffic nets. I suppose regular use will eventually result in associating the received pitch with zero-beat, eliminating the problem of being slightly off -frequency. As to the letter issue, perhaps the "N" with tilde (dah-dah-di-dah-dah) or a similar obscure combination (humor intended) could be used!

Speaking of filters, the HW-101 receiver also has a nice CW filter. One can select either SSB bandwidth or CW bandwidth. I've never been a big fan of filters. They seem to create an aural "tunnel vision" that I don't enjoy. Over the years, I have found that I can mentally select the CW signal I want to hear without the crutch. However, now and then, having access to a narrow filter can be useful, particularly when a strong adjacent signal is found to be overwhelming.

All that is now lacking for the HW-101 is a microphone! I will need to keep an eye out for an older high-impedance mic at an upcoming ham radio swap meet, when they re-emerge from the COVID era.

-30-

The Power of Denial
By James Wades (WB8SIW)

During a recent meeting with a major metropolitan transit agency, the agency representatives disclosed the fact that most communications with their field forces was conducted using cellular telephones. Evolution and worker preferences demanded this mode of communications it was said, with dedicated two-way radio use now limited primarily to train crews.

This situation is informative on several levels, so let's take some time to deconstruct it and respond.

Disaster Response:

When asked how communications would take place in the event of a cellular outage or during periods of extreme overload, such as another 9-11 attack or a major natural disaster, the answers amounted more to an evasion. The solution, as it turns out, would be to rely on train crews and the limited number of two-way radios available for communications. This was obviously an off-the-cuff response designed to defuse the real

intent of the inquiry.

Follow-up questions such as these also resulted in evasion or denial:

- What would happen in a mass evacuation during which on-going coordination with multiple work crews would be necessary? How would this be accomplished without reliable communications?

- If employees aren't familiar with two-way radio circuit discipline during normal operations, what leads one to believe they will "magically" develop a more stringent discipline in time of emergency?

- Two-way radio networks have limited circuit capacity. How could radio nets/channels be layered based on function and how would communications traffic move between functional groups. Is it practical to expect reasonable circuit efficiency without net layering based on craft/discipline, with central coordination at a dispatch center or EOC type facility?

These are just a few questions for which there were no answers.

Generational Myopia:

The situation illustrated above is an excellent example of what the author likes to call "generational myopia." A sizeable percentage of managers and employees within the organization have likely had a cell phone in their hand (and central to their day-to-day life) since they were pre-teens. Because of this, denial driven by generational myopia trumps the reality that situations could arise during which the cellular data networks that supports this centerpiece of their lives are unavailable.

Denial is a powerful force in human behavior. Negative or discomfiting data is often dismissed in favor of data that is validating and therefore comforting. Without digressing too far, perhaps the best example exists in the realm of politics and social issues in which individuals dismiss those who offer an alternative perspective to their preferred worldview. In such cases, narratives are accepted without question or intellectual scrutiny, and the individual then selects ideas, opinions and data that supports the narrative in the same manner the shopper at a grocery store tends to stick with preferred brands. One might call this behavior "validation addiction."

The validation addict generally suppresses any ethical obligation to seek objective truth. This is often based on the discomfort that arises when one's prejudices or beliefs are challenged. Whether it's the latest social or political issue, or the perceived value of the "tech narcotic" in the form of the cell phone, the addict chooses not to start down the road to truth. In the worst-case scenario, one even hears such individuals argue that "everyone has their own truth," or they promote intellectually addled theories such as "positional truth;" but again, we digress. Simply put, most individuals suffer from a degree of validation addiction, some more than others.

Emergency Management:

One sees a similar type of denial in emergency management agencies. It's hard to sell the concept of survivable and decentralized communications in the form of ARES ®, MARS, SHARES or the like to agencies composed of individuals who have come of age with highly reliable cellular data networks. Many simply can't conceive of an operational environment in which a widespread network outage renders their daily methods and preferred communications tools inoperative. For that matter, and at the risk of sounding cynical, many can't even plan a lunch date in advance, let alone apply a hazard and vulnerability analysis in such a way that it challenges the assumption that their preferred methods of communications will always remain intact.

Even some radio amateurs fall victim to this myopic view of commercial telecommunications common carrier service. They see themselves in competition with commercial services and, as a result, dismiss those modes and techniques, which are well suited to leveraging basic, decentralized and survivable assets.

The Sales Problem:

Ultimately, this all boils down to a significant "sales problem" for organizations that offer survivable communications options, including the Amateur Radio Service. These sales problems are both *internal* and *external*. Internally, it is becoming increasingly difficult to recruit EmComm volunteers, while externally, it is increasingly difficult for served agencies to see value in the EmComm capabilities offered by the Amateur Radio Service. Therefore, the challenge to EmComm programs is to develop a suitable apologia that makes a strong case for developing and retaining independent, survivable systems.

Moving forward, our national organizations need to look beyond the tactical management of EmComm and implement a broad strategic plan, which incorporates an educational component targeting served agencies, community organizations, and radio amateurs themselves. Four core goals must be accomplished:

- Outreach to radio amateurs who are not active in public service communications must be improved. This includes better integration of new radio amateurs who obtain licenses for various volunteer work and prepping into ARES® and similar programs

- Served agencies must be better educated about the vulnerabilities of commercial telecommunications infrastructure. Sufficient data and case histories must be included to overcome denial.

- The image of the Amateur Radio Service must be revamped. It's no longer enough to show "Joe Hamm" holding an HT on the front of a colorful brochure. Rather, the diversity of Amateur Radio capabilities must be explained and demonstrated.

- Radio amateurs involved in EmComm must have the <u>demonstrated</u> ability to communicate effectively, maintain radio logs, process message traffic and keep administrative records in support of EmComm activities. It is no longer enough to simply possess a working two-way radio.

One place at which everyone can start is by developing a "Neighborhood Hamwatch Program." Reach out to local VOADs. Get them equipped with basic GMRS and FRS capabilities. Train them in basic radio procedures, situational awareness reporting, basic traffic handling and the like. Assign competent amateur radio volunteers to serve as both administrative points-of-contact and operational gateways to their nets/ frequencies. Incorporate them into your exercises.

Don't overlook the value of public service events such as races, parades, and similar events. For larger events, deploy a real message center, provide the administrative capabilities that impress, assist with efficient coordination and monitoring. These events provide basic communications training, field deployment exercising, and numerous public relations opportunities.

Lastly, avoid myopia and denial. Don't be afraid to ask the "what if" questions. Don't be afraid to bring up those discomfiting scenarios. Both volunteers and professionals need some reality checks now and then!

-30-

Some Lessons from Field Day
By James Wades (WB8SIW)

Due to an unexpected illness of a key volunteer, the author found himself filling in as the Winlink-RRI Region 4 digital liaison (gateway) on field day. The experience turned out to be quite informative. Let's share some observations that could be helpful for emergency planning.

- Region 4 radiogram quantities were extremely high and getting to the game late proved to be a significant disadvantage. It was a bit like drinking from a fire hose. Many hours were spent working through a major backlog of traffic. Connect times alone on the digital network took a significant amount of time.

- Many originators were not from seasoned traffic operators. Many messages were originated without an address or telephone number. Many of these were mailed to the recipient from the gateway in order to prevent inconvenience to state or local net volunteers.

- A surprising number of messages contained only a name, call, city and state. No additional address information was provided.

- A variety of minor formatting issues arose. One common issue involved a lack of understanding of how to insert the signature. While the Winlink-RRI template enforced the requirement for a proper signature, the result was occasional messages with two signatures, one of which appeared in the text and the second of which appeared in the proper location on the radiogram.

- The good news: There is a lot more interest in traffic handling and radiograms this year, despite a lower than usual field day turn-out.

Ultimately, several important lessons have been reinforced and perhaps some changes in procedures are in

order.

- We need to increase the visibility of our on-line, peer-reviewed training materials.

- Local EmComm organizations need traffic training based on the radiogram and RRI Radiogram-ICS213 message formats.

- We need to stress the value of valid phone numbers and/or email addresses included with all originations. Simply put: it is not the duty of the delivering operator to research this contact information and, in time of emergency, delivering operators will NOT have time to do so.

Field day offers an excellent insight into what might happen in time of emergency. Originators must make it a standard practice to include complete contact information and options with all originated radiograms. Furthermore, a bit of research in advance of origination is required to understand the simple, universal radiogram format.

Developing Alternate Options for Routing Traffic
by James Wades (WB8SIW)

For many years, traffic operators in the Eastern half of the United States and Canada have taken advantage of the "Hit and Bounce" net to move traffic throughout much of the Eastern Area. This independent net has proven very effective for expediting traffic flow outside of the usual RRI cycles. HBN has also proven very useful for ensuring timely routing of message traffic, such as messages originated from EmComm exercises and the like.

Recently, your editor used HBN extensively to support an AUXCOM training exercise. Radiogram-ICS213 messages received at the digital gateway were routed to HBN to ensure timely delivery. The experienced CW operators had no trouble adapting to the formatting and delivery requirements for this type of message traffic (training videos and documents are available on-line).

Another advantage of HBN is the ability to manage traffic flow and distribution when confronting poor propagation conditions. HBN meets on 7112 KHz at 8:30 AM Eastern Time, providing an alternative to evening long-path conditions that sometimes disrupt section and region nets during periods of low solar activity. Likewise, traffic is listed by state, which can accelerate routine traffic routing to compensate for delays.

It seems reasonable that the HBN model could be applied to other RRI areas, either within the context of a directed net or within the context of a "watch frequency" concept. The latter concept might be a better starting point for implementing an RRI "open net" in the Central and Western Areas. It would work as follows:

Traffic operators would monitor 7115 KHz at 8:30 AM Central Time in the Central Area and 8:30 AM Pacific Time in the Western Area. Operators holding traffic for a state within the operational area would simply

announce it on the QSX frequency. For example:

RRI RRI de W6RRI QTC TX 2, AR 1 K

Any operator capable of accepting the traffic for relay to his state/section net would be welcome to respond. For example:

W6RRI de NR8TU QSP TX 2 K

For small amounts of traffic, the two operators can exchange the traffic on frequency. For larger amounts of traffic, say three or more messages, they may want to QNY up or down a few KHz, thereby implementing a "watch/working frequency" arrangement.

There are other advantages to this arrangement.

First, it establishes the frequency as a traffic routing option. 7115 is also an IATN frequency and this method would further establish the concept of dedicated "traffic frequencies" in the minds of casual users. Second, the concept is scalable in time of emergency. The process can be continued indefinitely throughout a disaster operation, thereby allowing welfare, priority or even emergency precedence traffic.

The benefit of this arrangement is the fact that minimal overhead is needed to implement the process. If participation grows and the traffic community sees the need for a formal, directed net, then such a method can be implemented. In the meantime, however, the idea is to ensure that traffic moves reliably and in a timely fashion across a wide range of propagation conditions.

IATN watch periods?

Closely related might be the concept of a watch frequency schedule for traffic. Such an arrangement would allow operators to move traffic between areas according to a fixed schedule, while simultaneously allowing operators with time-sensitive traffic or those who couldn't make a prior evening's net to inject messages between regular net schedules. As with the morning area watch arrangement, this concept would be scalable in time of emergency. Exact times for this arrangement have not been determined nor has the concept been formally adopted (it's in the "idea" stage), but a possible schedule might be:

1500Z (1600Z during daylight savings time)	14115 KHz
1800Z (1900Z during daylight savings time)	14115 KHz
2100Z (2200Z during daylight savings time)	14115 KHz

The idea is to add some level of predictability that would allow operators to move traffic outside of normal schedules when necessary.

Is the arrangement regressive?

An important question to ask is whether these arrangements might be regressive. Might they decrease participation in scheduled nets or undermine the system of cycles? No one can't answer this question with absolute certainty until the concept is implemented, but it seems apparent from the HBN experience that the opposite is true. The additional net opportunities afforded by HBN have encouraged participation in all traffic

nets. Additionally, such options would move routine traffic more rapidly across country, thereby improving the reputation of the traffic system and its level of customer service, which should also encourage broader participation.

Traffic operators are welcome to offer their opinions on these ideas, perhaps leading to formal adoption by the RRI Board of Directors. Feel free to send your comments to:

info@radio-relay.org

Two-Meter Renaissance
By James Wades (WB8SIW)

As one drives around the United States, he will regularly encounter vehicles identified with Amateur Radio callsign plates that are not equipped with any type of two-way radio equipment.

The history of Amateur Radio call sign license plates is deeply rooted in emergency communications. State governments established a unique category of license plate designed to identify radio amateurs available for disaster response. This antecedent is evidenced by the fact that most states charge a much lower rate for call sign license plates than that charged for vanity plates. Therefore, one must ask a very simple question:

> *If one purchases a call-sign plate and affixes it to a vehicle not equipped with two-way radio, does the license plate function as a public service tool or does it function as a vanity plate?*

One might argue that those who obtain a call sign plate for use on a vehicle not equipped with at least a basic two-meter FM radio should be charged the "vanity" price for the plate. One might even say that an informal contract exists between the state and the radio amateur. It amounts to, "we agree to charge you less for a specialized call-sign plate in exchange for your vehicle being equipped to provide emergency communications."

Is ham radio in general, and two-meters in particular, an underutilized resource?

As one travels throughout the United States and attempts to contact a vehicle with an obvious VHF antenna on the calling frequency (146.520), the answer is almost always silence.

Repeater systems in most areas are likewise dead-silent. Even in major metro areas, one can attempt to establish contact on many repeaters for hours with nothing but silence in response.

Ironically, that radio service which so many hams hold in contempt, CB radio, seems to still offer considerable activity thanks to our nation's community of Interstate truckers. Despite some occasional crude language or some harassment by high-power base stations, Channel 19 has evolved into a fairly "matter of fact" style of communications much of the time. Most importantly, a motorist can obtain a fair amount of "real-time" data on CB Channel 19 that is not available from GPS units or cellular data network navigation apps. This real-time feedback can prove extremely valuable on long road trips.

One might even suggest that the odds of obtaining help in a remote area in which cellular data networks are

unavailable would be greater on CB radio than via Amateur Radio VHF or UHF frequencies. That's a sad assessment of current state of Amateur Radio.

Just Preppers and radio sport?

The Amateur Radio Service should be more than just a "break glass in time of emergency" resource for preppers or local community volunteers with little interest in the art of two-way radio communications, nor should it be mostly a playground for the contest set. Routine, daily use of our common resources could do much to restore the fraternal fabric of our hobby/service. It might also expose new people to the concept of an *independent, non-corporate*, *non-government* communications capability.

Some steps local radio clubs can take to renew interest in two-meter and mobile capability might include:

- Retain the basic two-meter FM repeater infrastructure. Do not balkanize the band with a variety of digital voice modes. Instead, keep two-meters as a universal common-denominator band for local communications and instead, deploy digital voice modes/repeaters on an alternate band, such as 440-MHz.

- Using a volunteer scheduling application or email reflector, recruit members to monitor the local repeater and the 146.520 calling frequency during a portion of their day. These volunteers should announce their presence a few times each hour. A radio club in the Milwaukee area has done this and it generates a surprising amount of activity.

- Utilize '52 as a **calling** frequency. Extended conversations on a calling frequency tend to encourage those monitoring to move to a different channel or turn down the audio and forget about it. Instead, train new hams and club members to use a "calling/working frequency" arrangement. Once communications is established on '52, operators can QSY to an adjacent channel such as '55, '58, etc. to carry on their conversation, and then return to the calling frequency after the QSO is complete.

- Start a project to get two-meter radios back in member's cars. Implement a club project in which members gather as a group on a weekend and work as a team to install transceivers and antennas on their vehicles. This could apply not just to VHF/UHF units, but might also be an interesting club project for installing HF mobile capabilities as well.

- Establish and reinvigorate the weekly radio club net. Incorporate training presentations and drills. Encourage the use of the club's resources for traffic handling. Bring the occasional radiogram from the state/section net to the repeater.

- Use the VHF/UHF capabilities as a foundation for expanding into the implementation of a "National SOS Radio Network" and "Neighborhood Hamwatch" system. The latter program is an excellent way to bring community volunteer organizations active in disaster response (VOADs) into your network using GMRS and FRS assets with VHF/UHF capabilities serving as the gateway. More information on these latter programs is available on the Radio Relay International Web Page.

EmComm and Traffic Handling:

Some years back, a group of traffic operators conducted a nationwide survey of VHF simplex frequency usage and determined that 145.760 MHz would make an excellent QSX frequency for EmComm and traffic operators. The idea is to get ARES and EmComm members to monitor 145.760 MHz while going about their business. In the event of an ARES activation, an announcement could be distributed using the frequency. Likewise, traffic operators could list radiograms for delivery or coordinate net liaison activity. The frequency would not be used for casual conversation.

In at least one dense metro area, traffic operators are using a VHF frequency in the two-meter CW sub-band for a local CW traffic net. It apparently works very well! It's a great place to learn CW traffic skills and as an added benefit, it offers a degree of natural communications security for sensitive traffic.

A Service or a Toy?

Ham radio is more than a toy for contests and chit-chat. It's also a fraternity and a service. Ultimately, it's the fraternal fabric that binds radiomen together, creates community, and allows Amateur Radio to remain a useful resource for public service communications. Former U.S. House Speaker Tip O'Niell often said, "all politics is local," but in the case of the Amateur Radio Service, "all activity is local," and it starts with the radio clubs.

Frequency Flexibility
By James Wades (WB8SIW)

Modern transceivers offer incredible frequency agility compared to those of several decades ago, but many traffic and EmComm operators fail to take advantage of this flexibility.

It's no secret that conditions have been terrible over the past several years. Yet, many nets fail to take advantage of alternate frequencies/bands. This is understandable to a point; nets rely on the fact that operators know where to report. A predictable frequency makes that possible. On the other hand, it makes little sense to struggle through conditions in which most stations and net control are "QRK 1."

All traffic nets should identify a secondary and perhaps a tertiary frequency for use when conditions are unfavorable or for use in time of emergency when alternate RF propagation conditions are expected. These alternate frequencies can serve two purposes, the first of which is to accommodate unusual propagation conditions and the second of which is to avoid interference, either malicious or incidental.

For example, let's imagine that your primary state/section net frequency is on 3550 KHz. Several alternate net frequencies can be identified (frequencies for illustration purposes only). For example:

- During RTTY contests, an alternate such as 3650 KHz might be used by those appropriately licensed.
- During periods of low solar activity, an alternate frequency such as 1810 KHz might be pressed into service.
- In time of emergency in which nets must operate during the mid-day hours, a 40-meter frequency such as

7060 KHz might be pressed into service. (All frequencies for example only)

When moving a net to an alternate frequency, one has a couple of options for notification. One option is the "five-minute rule." If the net call isn't heard within 5 minutes of the scheduled start time, operators know to check the alternate frequencies for the net call 5 minutes later.

Another option is to move the net immediately, leaving a volunteer on the primary frequency during that five -minute interim to announce the QSY periodically.

Obviously, one can send out a quick text-message blast or e-mail blast, but one should keep in mind that during a communications emergency, it may be impractical to use such notification methods. Nonetheless, provided such methods don't become a crutch, they offer some potential for quick notification of frequency changes or emergency net activations.

Rank-and-file net members should also consider frequency flexibility. By designing antenna systems for rapid band change or resonance on commonly used bands, one can facilitate a quick, convenient change to an alternate frequency either for primary net operations or for traffic exchange. Other conveniences, such as automatic antenna tuners can add further convenience. Such improvements will also offer advantages in other operating areas, such as during contests or when dedicating a transceiver to a Digital Traffic Net function.

Amateur Radio is an incredibly flexible resources, the capabilities of which are often underutilized. Frequency flexibility unavailable to other radio services is perhaps one of those more useful capabilities.

-30-

Announcing the Clyde Darr Memorial Traffic Award to be Presented Annually by the RRI Board of Directors

Thanks to the commitment of an annual donation, effective in 2022, the Radio Relay International Board of Directors will elect an individual traffic operator exemplifying the highest standards of the Amateur Radio Service for an annual award. Some of the factors in candidate selection include operating skill, organizational support and development of RRI programs and infrastructure, on-going net participation including net-control and liaison duties, participation in RRI disaster telecommunications exercises and actual emergency operations, new operator mentoring, operator recruiting, and administrative support of RRI.

The Board of Directors will solicit nominations from August 1 to September 30 each year, with award presentation occurring thereafter.

The award itself will be a special and fitting tribute suitable for display and commensurate with the high standards of excellence represented by Radio Relay International.

The award is named in honor of Clyde E. Darr (8ZZ), a pioneering radio amateur, traffic operator, and pioneer in the birth of broadcasting and the development of organized Amateur Radio. While not quite the Most No-

ble Order of the Garter or the Presidential Medal of Freedom, it is expected that this award will be the highest honor in the traffic handling and EmComm community.

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RRI Help Wanted!

RRI is growing rapidly, and many of the same, familiar individuals are straining under the workload. Therefore, we earnestly solicit volunteer help in the following areas:

==========

Training Bulletin Manager:

Duties:

Transmit RRI CW training bulletin twice monthly on 20 and 40 meters.

Requirements:

- Ability to transmit the CW training broadcast using a program such as FLDIGI and a sound-card or relay interface.
- Antenna system of good quality.
- Amplifier to facilitate 1-KW operation.
- Basic knowledge of radiogram format and ability to copy CW at speeds up to 20-wpm.

The training message texts will be provided to the Training Bulletin Manager, who will only be responsible for transmitting them on schedule.

QNI Newsletter Circulation Manager:

Duties:

Distribute the QNI Newsletter to RRI Registered Radio Operators, translate QNI to searchable/discoverable HTML format for publication on-line, translate to a basic text format for distribution to visually impaired subscribers. Expand circulation via social media and maintain a secondary database of non-RRI subscribers.

Requirements:

- Solid understanding of web site management and formats.
- Ability to navigate social media outlets effectively to ensure effect promotion of RRI and the QNI Newsletter.
- Selectively posting content and links in a curated manner to avoid platforms subject to “trolling.”

Network Data Manager:

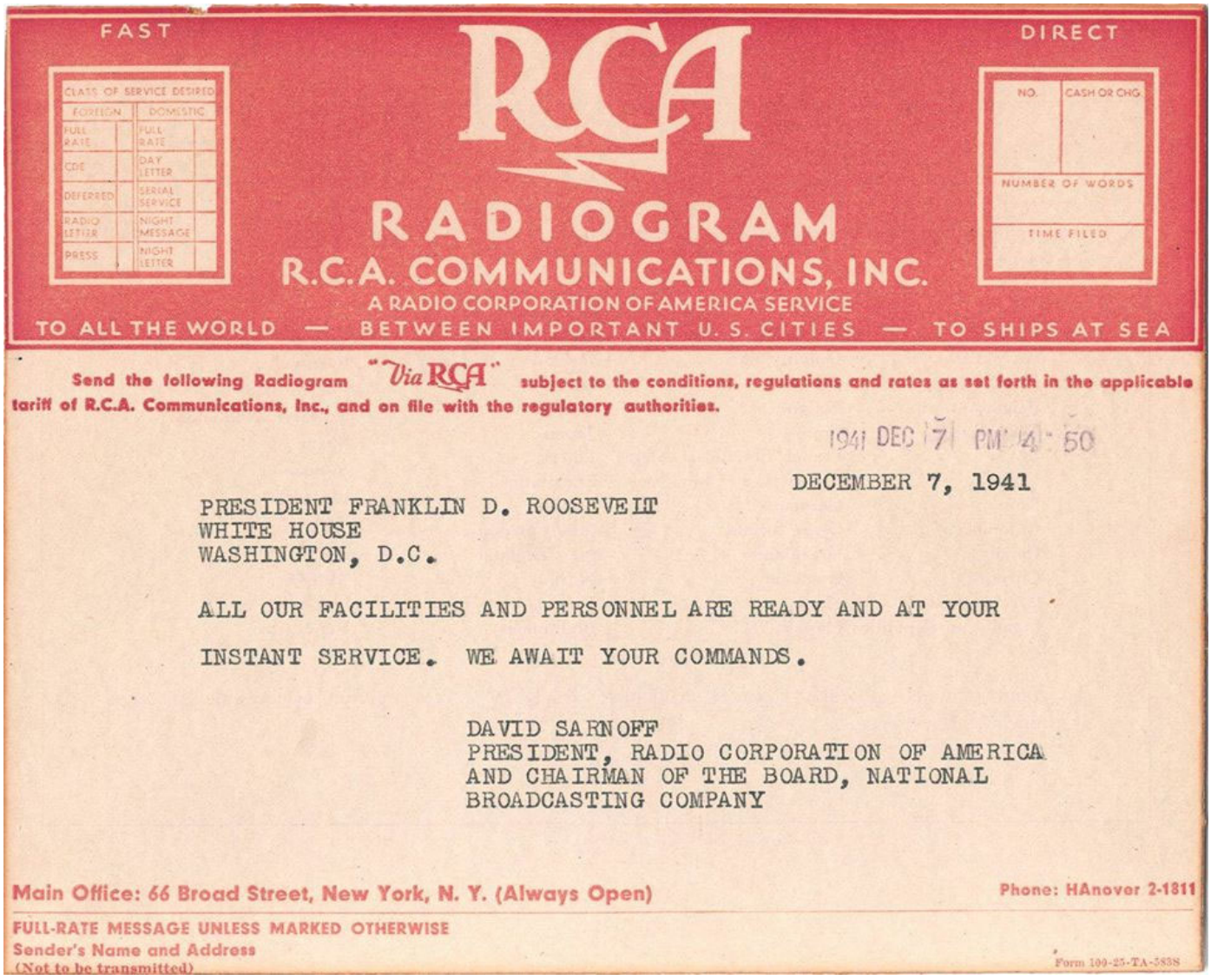
Duties:

Receives net reports and Registered Radio Operator participation reports in a single text file from the RRI statistician, all of which are in a standard, radiogram format and reporting sequence. Develop software methodology to translate the consolidated radiogram text data into a searchable spreadsheet template suitable for publishing. Facilitate the on-going once-per-month reporting process after initial development and beta testing.

Requirements:

- Experience with database management, spreadsheet applications and basic software development.
- Basic familiarity with radiogram format and net reports.
- Desire to work with RRI volunteers to build a quality, professional public service communications program.

If you can volunteer for one of these positions, please contact: james.wades@radio-relay.org



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A Traffic Operator's Newsletter

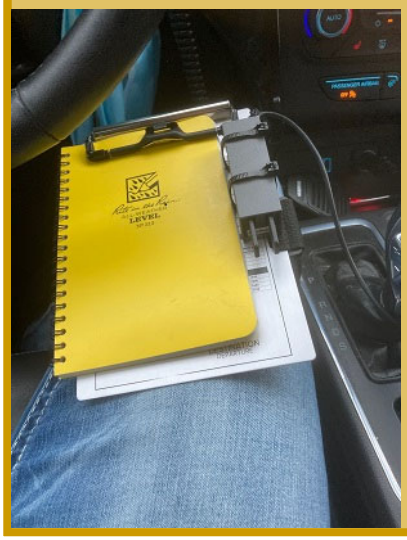
QNI is published quarterly…or more often when the Editor feels like it!

Other Hobbies and Interests?

Undoubtedly, many in the RRI/NTS community have interests outside of Amateur Radio. Perhaps you enjoy fishing, sailing or woodworking, quilting or fashion design. **Please send a photo of yourself engaged in an interest other than Amateur Radio and we will publish it here in QNI.** In order to prime the pump, here is a photo of your editor active in one of his "outside interests:"

Mobile CW

Your editor has extensive experience using mobile HF CW for routine QSOs and net operations. Experience shows that excellent connectivity is routinely possible. In the hands of an experienced operator HF CW is the same as using a microphone, and if one has to copy message traffic, such as during a disaster operation, all one needs is some message forms and a pen or pencil. No bulky computer is needed in the vehicle. Here are some photos of the most recent iteration of your editor's simple arrangement. The back-pack arrangement is easily stowed away and the keyer paddles are mounted to a pilot's kneeboard that straps to one's leg.



Left: Pilot's kneeboard with paddles straps to leg. An Army KY-116/U straight key is occasionally used as well.

Right: Transceiver and tuner contained in backpack. Can be disconnected quickly and stored to prevent theft or when not in use.