

WorldRadio

ONLINE

Year 39, Issue 8

FEBRUARY 2010

Hibernating DXers Always Awaken

Echoes From Antarctica

**Boy, I Wish I Had
Recorded That!**

**Lifelong Learning With
Morse Code**

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WorldRadio ONLINE

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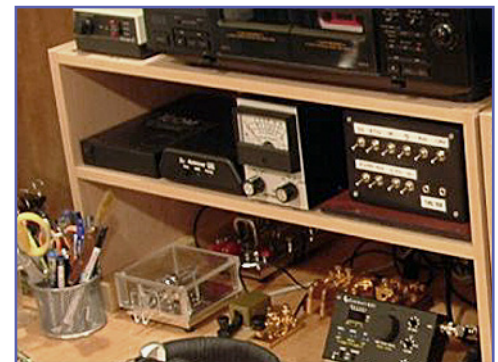
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ON THE COVER: A new tower is successfully installed. Read the complete story in this month's *DX World* column, "Hibernating DXers Always Awaken."



Several Short Subjects

By Carl Luetzelschwab, K9LA

This month's column is devoted to several topics that just aren't long enough by themselves. The topics are varied, and I hope you enjoy them (and maybe even learn something!).

DXing From The South Pacific

Last October's Conway Reef DXpedition (3D20CR) reported, "We have about a two hour window around midday where there is little to any activity because of propagation conditions." Likewise, the November 2009 Chesterfield Island DXpedition (TX3A) commented that "Just before noon almost every day (0100 UTC), conditions here deteriorate on the high bands (20 to 10 m) and do not recover until about 3 PM local time."

Both of these DXpeditions experienced the same phenomenon – significantly increased D region absorption around local noon. Figure 1 gives a hint of this.

Figure 1 is an azimuthal equidistant map centered on TX3A. The month and time are set up for the month of this DXpedition at local noon. Note that the Sun (the yellow star underneath the red-dotted QTH flag) is pretty much directly overhead (a solar zenith angle of 0 degrees) at TX3A at local noon. Since absorption is inversely proportional to the solar zenith angle, the most absorption will occur at local noon – and it will be especially high when the Sun is directly overhead.

We can estimate the D region absorption in the ionosphere just to the north of TX3A (assuming paths to Europe, Japan, and North America) by using the figures on pages 297 and 298 in *Ionospheric Radio Propagation* (K. Davies, 1965, NBS Monograph 80). Figure 2 does this for 20m from sunrise (the plus sign at 90 degrees on the left) to sunset (the plus sign at 90 degrees on the right) for a 10 degree elevation angle out of TX3A.

The absorption increases by about 14 dB on 20m from either sunrise or sunset conditions to local noon conditions at TX3A in November. This increase in absorption will also occur on the next hop out of TX3A along a given path (but not to the same degree as the solar zenith angle will be higher farther away from the overhead Sun), so it's easy to see why 20m could drop out around local noon when you're on a DXpedition to the South Pacific in northern hemisphere winter (when the Sun is in the southern hemisphere).

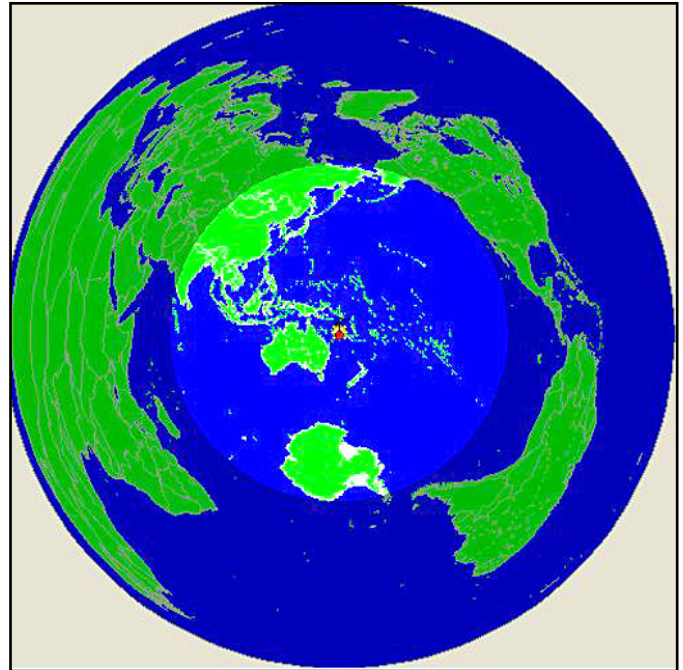


Figure 1 – TX3A in mid November at 0100 UTC.

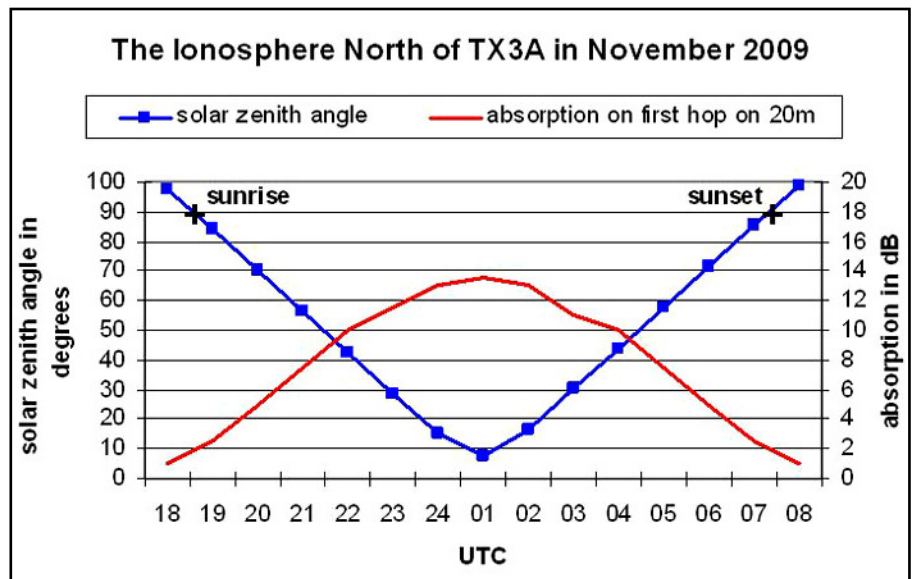


Figure 2 – Absorption near TX3A.

Of course, the solution to this is to move up in frequency, where absorption is less. But unfortunately, these DX-peditions occurred at extreme solar minimum when the MUF at the other end of the path likely wasn't high enough to support the higher frequencies.

Is There DXing On 4 MHz?

An interesting article appeared on the web awhile back. Although the author's explanation of ionization raised my eyebrows, his comment about propagation on 4 MHz was even more puzzling. He said, "80M signals are almost always highly or fully attenuated by the D-layer, and what propagation that occurs on 4 MHz is actually by the signals traveling across the Earth's surface, or ground wave propagation." The author also included a table summarizing propagation on the amateur bands, and for 4 MHz the entry read "Seldom has skip propagation." It's not clear to me if the author is a ham, but I can say for sure if he is he doesn't have any real-world experience on 80m.

Of course, the real fact is that ionospheric absorption on 4 MHz decreases significantly at night, thus allowing

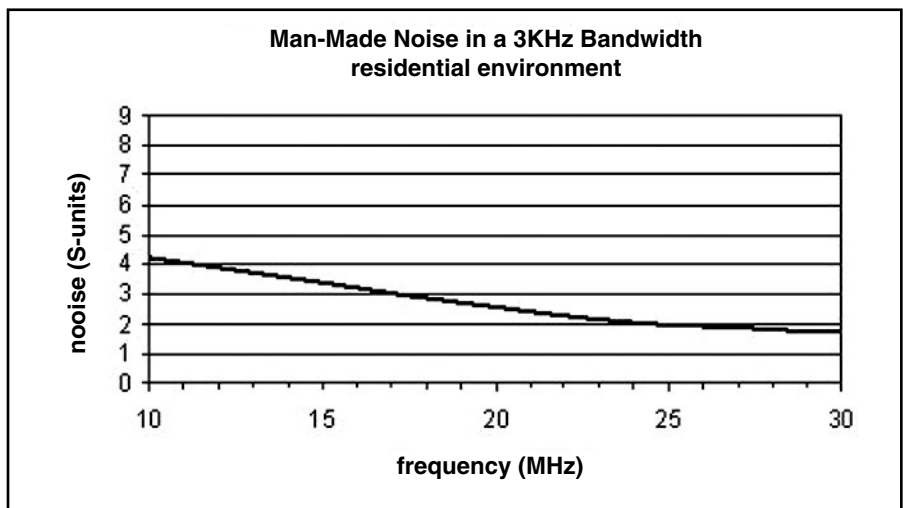


Figure 3 – Trend of Man-Made Noise

worldwide propagation. Sure, it's not there every night due to the night-to-night variation of the ionosphere, but to say 4 MHz seldom has skip propagation is just wrong.

So rest assured that there is DXing on 4 MHz.

Why Is 17m Open, But Not 20m? Or 15m, But Not 10m?

Normally the lower band is open but not the higher band due to the MUF (maximum usable frequency) not being high enough. But when the MUF is high enough, why is the higher band open but not the lower band?

One possibility is the behavior of signal strength and man-made noise. Signal strength usually increases as the frequency goes up due to less ionospheric absorption. Man-made noise usually increases with a lowering of the frequency (see Figure 3). Thus going higher in frequency should result in a stronger signal, with lower background noise. That could make the higher band appear to be open when the lower band isn't.

Another possibility for the higher band being open but not the lower band is a unique mode of propagation. For example, trans-equatorial propagation or sporadic E could be available on the higher band, but not on the lower band.

And yet another possibility is the incoming elevation angle dictated by the ionosphere for the path. The issue is the antenna pattern in terms of electrical height – for a given antenna height, the pattern on the higher band will produce more low angle radiation than the pattern

on the lower band. Thus, an incoming angle at your QTH could be below the main lobe of your antenna system on the lower band, resulting in a significant signal strength disadvantage. But the incoming angle could be right in the main lobe of your antenna system on the higher band, resulting in 'full gain' from your antenna system.

In general, I would expect this phenomenon to be more pronounced on the longer paths.

Index Of Refraction In The Ionosphere

The atmosphere outside the ionosphere (for example, in the troposphere where VHF/UHF ducting can occur) is a non-dispersive medium. Non-dispersive means the index of refraction is independent of the frequency of the electromagnetic wave. The math works out such that an index of refraction greater than 1 causes bending in the atmosphere outside the ionosphere.

In contrast, the ionosphere is a dispersive medium – the index of refraction depends on the frequency of the electromagnetic wave. The math works out such that an index of refraction less than 1 causes bending in the ionosphere (in other words, the refractive index decreases with an increase in electron density). In the ionosphere we necessarily have to use the concept of group velocity as opposed to phase velocity.

For a more detailed discussion of this, see any good ionospheric book (for example, *Ionospheric Radio*, Chapter 3, K. Davies, 1990, Peter Peregrinus Ltd).

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Homeland Security Revisited: Who Will **REALLY** Be There When All Else Fails?



By **Bill Sexton, AAA9PC / AAR1FP / N1IN**

Editor's note: This month, Bill is offering a commentary on the state of *MARS* and the world in which it operates. The opinions expressed are personal and do not necessarily represent those of *Army MARS*, of *WorldRadio Online* or of *CQ Communications*.

With laudable concern for national security, amateur radio—the organized element, anyway—is firmly fixed on homeland security as its overriding mission in these perilous times. And rightly so.

Unfortunately, that focus puts us hams in very lonely company. Unemployment, national debt, war in Afghanistan, health care, the national political logjam, you name it, all eclipse disaster preparedness in the American mindset as this column is being written.

“The question of terrorism barely came up” at the first meeting of Republican governors after the November off-year elections, one commentator noted. There’s little likelihood the other party’s governors would have differed.

It’s not as though people lack reminders of the peril.

Last April, vandals sliced through eight underground fiber cables in northern California, knocking out not only telephones but cash machines, business computers and even internal phone operation at several hospitals and businesses in an area skirting Silicon Valley. The Internet’s total vulnerability was made manifestly clear and was soon forgotten.

More recently, the killings at Ft Hood, TX last November and arrest of five young Muslim men from Virginia five weeks later in Pakistan heightened official alarm about the potential of homegrown terrorist cells springing up undetected here in the homeland.

Regardless of the palpable indifference across America, the natural and manmade risks we face together haven’t gone away just because the public attention has.

The MARS Role

Take a relatively minor example of the national disconnect as it affects one sector of amateur radio: The Military Affiliate Radio System, which by definition is the ham entity most closely aligned with federal emergency response, has been steadily losing budgetary support from its Pentagon sponsors, even as homeland security spending exploded elsewhere following 9/11.

Navy-Marine Corps MARS lives a ticking clock as the Navy determines its future one year at a time. Meanwhile at Army

MARS, the latest budget cut this fall left HQ staff with four employees (a single Army civil servant and three contractors). These four are supposed to manage a thousand and more emergency responders spread across 50 states *plus* military outposts in Europe, Asia and the Pacific. Recruiting, training, answering to the chain of command, writing operational doctrine, exercising control during emergency mobilizations, the lot. Good luck, gang.

And even as the Department of the Army activated a brand-new headquarters for domestic civil support after Hurricane Katrina (ARNORTH), Army MARS was left within the military command charged with conduct of combat communications abroad (NETCOM). “Orphaned” is not too strong a word considering the awesome global responsibilities concentrated in the HQ to which Army MARS still reports. The arrangement made sense in the era of MARSgrams and phone patches for troops fighting abroad, but these services have been supplanted by e-mail and cell phones.

That arguably parochial concern (agreed, there is a war on after all) pales in comparison with the larger evidences of disconnect. Take infrastructure.

A National Dilemma

Experts on homeland security in and out of government have long viewed robust resilience as the best defense against disaster, manmade or natural, and it deserves a lot more attention than airport passenger screening.

The key to resilience is infrastructure. Call it the New Orleans lesson if you will, after Katrina’s impact on neglected levees (which a federal district court has lately blamed squarely on neglect by the Corps of Engineers).

Yet among the priorities of federal and state government today, investment in the desperately-needed upgrading of highways, bridges, dams, ports, toxic chemical factories, etc., is too tiny even to be labeled a “priority.” It barely qualifies as an “after-thought.”

Before taking a closer look at MARS engagement with these issues I should emphasize the opinions expressed here are mine alone and are in no way attributable to past or present MARS leadership. I’ll further concede my recklessness of putting such views down on paper a full two months before this is to be published. Who knows what unpredictable event(s) might uproot the world situation in the meantime?

Otherwise, however, the time is ripe. Stu Carter, a retired Air Force LTC, has been replaced after three years as Chief of

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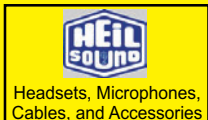


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Infrastructure Security, In the Dutch Manner

Compare the Dutch response to the coastal floodplains to that of the United States:

Worried more about natural calamity than terrorist attack — with good reason — the Netherlands is leading a fight of a different kind,” reported the Washington Post. “How to live with global warming.”

“As sea levels swell and storms intensify, the Dutch are spending billions of euros on ‘floating communities’ that can rise with surging flood waters, on cavernous garages that double as urban floodplains and on re-engineering parts of a coastline as long as North Carolina’s,” the Post reported from Amsterdam. “The government is engaging in ‘selective relocation’ of farmers from flood-prone areas and expanding rivers and canals to contain anticipated swells.

“The measures are putting this water world of dikes, levees and pumps that have kept Dutch feet dry for centuries ahead of the rest of the world in adapting to harsher climates ahead,” the newspaper reported.

Army MARS by ex-Signal Corps communications technician Jim Griffin. This veteran communicator, now a civil servant, had been Carter’s deputy for two years and oversaw renovation of the MARS gateway station at the Ft Huachuca AZ HQ.

Carter was a forward thinker who quickly discerned that MARS hadn’t caught up with the full implications of 9/11 and Katrina. He poured his abundant energy (he’s a marathon biker) into totally restructuring the tactics of emergency

response based on two givens: (a) full readiness to serve the military’s needs if ever called on but in the meantime (b) aggressive pursuit of direct support relationships with civil response agencies, pitching in to help in any way they need. His tenure culminated in a massive retraining program. Failure to pass it meant an end to MARS membership. The new Army MARS is much leaner.

MARS’s Enhanced Toolbox

In referring to tactics, I mean the mechanisms of ecomm support such as: expanding the Army Mars Winlink system, calling for designation of regional deployment teams *before* disaster happens, pressing members to associate themselves with local first-responder units, reorienting HF radio nets to serve the command and control function during emergencies, and establishing an early-warning protocol all EMAs can use. Carter’s was a phenomenal undertaking.

With that transformation well underway, Carter’s successor is inevitably faced with addressing the broader issues of strategy, by which is meant the “where” and “why” and “how” of applying the expanded toolbox. Given the limited resources of his office, it’s not an enviable prospect.

No strategic issue is more significant (nor probably more difficult) than reconciling how *three* different MARS services (Air Force, Navy-Marine Corps and Army) are to relate to one chain of command (civil or military) under the Incident Command System. If there’s one fundamental principle equally central to military and civil response doctrine, it’s unity of command. Yet in the present scheme of things, the three services operate independently. And the MARS chiefs only get to strategize once a

year, and that for only a few hours at the Dayton Hamvention®.

A Defense Department “instruction” to clarify who’s in charge under what circumstances has been in preparation for some years. It hadn’t emerged as this was written.

An ARES Challenge?

There’s rethinking of old attitudes in the wider ham community, too, as evidenced by recent commentaries by Jerry Boyd N7WR, a former police and fire chief and until recently, a longtime contributor to this publication. “In my last *WorldRadio* column I offered the opinion that the days of amateurs providing emergency communications assistance to public-safety agencies is, in many places, drawing to a close,” he wrote in *CQ Magazine* last fall.

His point: Government-funded radio gear and fulltime staffers to operate it are gradually taking over from the amateur force in state and municipal agencies.

In response to his dismaying observation, Boyd said. “At least a dozen writers, some public-safety professionals like me, underscored my point . . . Their common question is, ‘Where do we go next?’ “Boyd’s unhesitating answer was to offer support to hospitals, bus systems, schools, local governments and the Red Cross.

Fresh thinking is showing at the upper levels of government. In one notable instance, Defense Secretary Robert Gates has ordered creation of a new command to defend military networks against computer attacks. As an indication of the priority he assigns cyber-defense, he said he’ll recommend that the President put the Director of the National Security Agency in charge, with the rank of four-star general.

Later it was revealed that NORAD, the North American Aerospace Defense Command, is reviewing the level of its commitment to preventing another 9/11 attack. A top general explained, “The fighter force is extremely expensive, so you always have to ask yourself the question, “How much is enough?” That’s a question that will surely resonate with airline passengers bemused by shoe inspections before boarding planes.

At the Edge of Disaster

Re-evaluating the current preoccupations of homeland security and redirecting its priorities is a constant theme for Stephen Flynn, the security consultant

and former Coast Guard officer whose 2007 book, *The Edge of Disaster*, established him as an eminent thinker in the field. Two years after the book’s publication—and well into the new administration in Washington—Flynn remains distressed by the national focus.

“While there is still room for debate whether DHS was a philosophical mistake,” he wrote in the May-June 2009 issue of *The American Interest*, “there’s no question it has so far proven to be a bureaucratic failure . . . After the photo-ops accompanying its birth in November 2002, DHS was largely orphaned by the White House and Congress. . .

“In short, despite the rhetoric of the past seven years, when it comes to reducing America’s exposure to the threat and consequences of terrorism within U.S. borders, there is not much ‘there’ there, behind the homeland security curtain. . . President Obama has been set up to be blamed for all the shortcomings that he has inherited when disaster strikes again.”

Flynn urged the President “to be truthful in acknowledging that the threat of terrorism can never be fully eradicated, even as he makes clear that its risks and consequences can be successfully managed.” He called on Obama to “challenge [the American people] to share in the responsibility of bolstering the nation’s resilience in the face of all hazards, not just manmade ones.”

Well, resilience is and always has been at the heart of amateur radio’s involvement in homeland security.

It lies at the core of the Army MARS task of providing replacement communications during the initial 48 to 72 hours of a major disaster while federal response gets moving—a commitment that may seem overly brief measured against the lasting impact on communications of a 100-year earthquake or another Katrina.

Or of a really widespread cyber attack along the lines of the sabotage to fiber cables by party or parties unknown who simply climbed down four manholes in Morgan Hill, CA (close by San Jose) in the middle of an April night. New question for DHS: Who guards America’s manholes?

For hams dedicated to homeland security, there’s a lot to think about these days—none of us more so than Chief Griffin of Army MARS and his peers at Air Force and Marine Corps MARS and the senior commanders the three report to. It’s a time for facing facts if there ever was one. Who’ll be there when all else fails?

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Mapping the Road to Recruitment

Devere "Dee" Logan, W1HEO

Expanding the amateur radio population doesn't just happen. It takes initiative by hams. That's you, me, and every licensee who enjoys this great hobby's fun and public service benefits. It's certainly a case of "the more the merrier!"

Recruiting should be an ongoing effort; especially by radio clubs concerned with building membership to insure their future. But recruiting more hams is equally important to each of us. We know how important it is to have a healthy, growing radio service. Without growth, our frequencies could be at risk, perhaps snapped up by others who would love to have them for their own purposes.

While we're not crying wolf, we do see signs that more needs to be done. You may have noted the no-growth status of some radio clubs. Their club members are growing older, less active, and not so involved, while their club is slowly turning into a coffee-and-doughnuts social club. Unless they add activities to attract new members or recruit new hams, their future prospects are bleak.

In contrast, we probably know a number of active radio clubs that present a more positive prospect for the future. Their clubs

have a variety of activities, interesting programs, licensing classes, public service participation, repeaters, nets, newsletters, publicity and more. They're "radio active."

Jump-starting Recruitment

Dictionaries supply several definitions for recruit. The one appropriate in our case is: "to furnish or replenish with a fresh supply; to renew or restore health and strength." Certainly sounds like exactly what we need.

There's no magic tonic that will make this easy. Yet, recruiting can be as simple as individual radio amateurs talking to friends about our hobby, or as organized as a club-wide campaign conducted by a team of members.

Most of us can recall being introduced to ham radio by a friend or relative. These "Elmers" continue to be one of the most effective ways to attract and assist potential licensees. There's nothing like the personal, human touch, and it's still one of the basic magic bullets of recruiting.

The recruiting process consists of several interconnected steps. We identified them when the Ham Radio Promotion



Field Day offers an ideal way to promote amateur radio to the public, using banners such as this one.

Project was formed (www.neoham.org). It all starts with raising awareness of what ham radio is. Publicity and promotion can do this. We as individuals certainly have explained to others what amateur radio is and what it isn't.

Once people are familiar with ham radio, we can next seek out those who appear interested, and consider them prospects for licensing. At that point, we can qualify them as serious candidates, and perhaps steer them to sources of help. This is where the radio club traditionally became the point of entry through licensing classes and Elmering. Today, several alternative sources of help can be found, including study guides and internet websites.

Recruiting Tool Kits

Presenting amateur radio as an interesting, fun hobby and public service activity can be done in a variety of ways. The simplest approach is for individuals to tell others about their own personal radio experiences and possibly to offer a visit to a radio shack. Having promotional literature to pass along can help show the wide range of ham radio activities. Radio magazines and club newsletters are typical and would be a good addition to a one-on-one approach.

Most active hams have a number of interesting personal stories that can be intriguing. Contacts with exotic locales, unusual QSOs, and emergency communication events such as Field Day are typical. A typical comment might be: "I had an interesting chat with a radio ham in England yesterday. He said that they were getting record rainfall in some sections." Such personal stories, included as part of normal conversations, build on the human interest aspects of ham radio.

Once people express interest in our hobby, referring them to a local radio club can be the next step. Clubs that make an effort to welcome visitors and offer to help them on the road to becoming licensed are some of the best recruiting tools that we have. Offering licensing classes, introductory orientation sessions and having a group of helping hams are key ingredients in assisting prospects interested in becoming licensed. The benefit can be a dual one: adding to our ham population and the radio club membership roster as well.

The recruiting process can be made easier by having an assortment of tools. Certainly amateur radio literature, magazines, and radio club newsletters are use-

ful. Having a promotional video, such as "Amateur Radio: Wireless Window to the World," produced by the Ham Radio Promotion Project, is an easy way to present our story. Displays showing photos of typical ham radio activities are valuable additions to club presentations to schools, scout groups etc.

Finding The Audiences

Once the recruiting tools are in hand, it's time to find audiences for our story. Radio clubs can offer a program or talk on ham radio to various groups, issue publicity stories on activities such as Field Day, or sponsor their own presentations at libraries, schools, scout troops etc. Our previous columns have suggested a number of ways to promote and publicize ham radio. Clubs should have some continuing efforts to do this.

Recruiting, like marketing, benefits from having a list of prospects. Clubs can recruit new members by developing a list of area hams and sending e-mail invitations to meetings. A notice to local media also helps, along with word-of-mouth and personal invitations by club members.

Expanding our network of individuals who are familiar with us and can spread the word to others is a worthwhile practice. Social media, such as blogs, Facebook, YouTube, Twitter etc. are additional options, but not all are appropriate or worth the time and effort required to make them effective. There are many ways to get the word out, so find the ones that work best for you or your club and for which you have the necessary resources.

Recruiting is not rocket science. It can be done easily in various ways, from simple individual contacts to well-organized radio club presentations. So let's shift into high gear and hit the road that leads to the growth of amateur radio!

Devere "Dee" Logan, W1HEO, is a veteran public relations counselor and writer. He's been active in radio clubs for more than 40 years.

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Telegrams to Santa

By Jim Wades, WB8SIW

Even an unemployment rate near 20% couldn't dampen the Christmas spirit of Saginaw, Michigan residents during their 2009 "Holidays in the Heart of the City" event. As in previous years, the Saginaw Valley Amateur Radio Association (SVARA) was part of the event, assisting with parade communications and bringing holiday cheer to the children.

For many years, the club has maintained a tradition of collecting radiograms addressed to North Pole, Alaska. These messages to "Santa Claus" allow the children to request gifts, while undoubtedly providing some useful insights to Mom and Dad looking over the children's shoulders as they complete the message forms.

In prior years, these "Santagram" messages were originated via the National Traffic System (NTS). Arrangements were made in advance with Ed Trump, AL7N, of Fairbanks, Alaska to accept the messages and deliver them to North Pole, Alaska, where volunteers have traditionally processed letters addressed to Santa. Unfortunately, in recent years, it was found that few messages made it to their destination. The ongoing deterioration in the level of NTS participation simply resulted in Santagrams disappearing within the system or arriving weeks late.

While planning the event in 2008, SVARA member Joe Turner, K8CQF, a former Michigan Section Traffic Manager, contacted Ed to discuss the problem of disappearing messages. Ed then came up with a simple solution; the use of land-line telegraphy. As originally envisioned, the SVARA group would collect the messages and then transmit the file to me, via ham radio, and I would then put them on a land-line Morse circuit directly to Alaska. After some consideration, I suggested a slightly modified approach. "Why not just originate them via land-line Morse at the event itself?" With that suggestion, an annual demonstration of Morse telegraphy was born!

The process is actually quite simple. A temporary telegraph office is established at the "Holidays in the Heart of the City" event. A link is established through one of the US or Canadian telegraph hub systems, and the telegrams are sent live to Fairbanks, Alaska via American Morse.

The 2009 event took place in two phases. The first phase was the traditional outdoor event. On Friday evening, November 21, the SVARA group set up its communications trailer in a prominent location just outside the entrance to the city zoo, where the main holiday festivities take place. The telegraph office was then set up and connected to Fairbanks. After a few



Children eagerly lined up to send a telegram to Santa.



Members of the Saginaw Amateur Radio Association sent "Santagrams" to Santa Claus via Morse code.

quick tests, things were ready to go for the Santagram portion of the event.

As children and their parents approach the tables, they are assisted by SVARA members as they fill out their Santagram forms. The completed telegram forms are then passed to Jim Wades, who transmits them over the Morse wire to Fairbanks. The steady rhythm of the telegraph sounder does much to adver-

tise the Santagram activity. People hear the Morse from the local sounder, become curious and are attracted to the table where they are encouraged to file their messages to Santa.

For the operator, sitting outside in sub-freezing temperatures pounding on the old Vibroplex bug for a few hours can be a somewhat "chilling" experience. However, seeing the imagination of children at work and observing the fascination of both children and adults who have never seen telegraphy in action makes it well worthwhile.

On Saturday, the event moves to the Saginaw Historical Museum, commonly referred to as the Castle Museum. Here, yet more children are encouraged to send their Christmas wishes to

"Santa's Elves" at the North Pole via telegraph after having visited with Santa himself nearby. As with the previous night's outdoor event, both children and adults are fascinated by the art of telegraphy and they often can't wait to send a message!

While many of the messages are typical requests for toys and the like, some are rather poignant. It is not uncommon for an adult to file a message asking for a "job," a "home" to live in, or even a "new life." Nonetheless, most who visit the telegraph office ask for one or two Christmas gifts with the hope they will bring a bit of joy during the holiday season.

The SVARA members and the telegraph crew have a great time. Most people today, including many radio amateurs, have

Landline Morse Today

In the early days of telegraphy, the Morse system was quite visible. The railroad station agent often did double duty as the Western Union agent, sending and receiving telegrams for the local community. It was at the local depot that one waited for the train, obtained market quotations, picked up express packages or met the drayman. The steady rhythm of the telegraph sounder was a constant presence in the background of daily life.

With the advent of direct-dial long distance telephone service and the decline of rail passenger travel, the telegraph receded from public view, yet it remained a viable, technology widely used for a host of applications including sports play-by-play originations, newsgathering, brokerage work, railroad message service, pipeline work, and so forth. Even the telephone company used telegraphy for internal communications because telegraph circuits could be composited over voice circuits, allowing the later to remain in valuable toll service. The last commercial Morse systems in the United States remained in operation until the 1980s!

In North America, Morse telegraph instruments utilize a normally closed series current loop operating in the vicinity of 20 to 60-mA. Those radio amateurs who recall the old teletype machines will be quite familiar with this, as the mechanical teleprinter operates on the same principle.

Because wire and cable are the most expensive part of any telecommunications infrastructure, engineers are always looking for ways to squeeze the maximum revenue from their expensive physical plant. Over time, the basic simplex telegraph loop evolved to permit multiple telegraph signals to be carried over a single wire. With the arrival of stable vacuum tube oscillator circuits, carrier systems were developed, which greatly increased the number of telegraph circuits, which could be carried on a single wire. Today's modern computer modem owes much of its heritage to the carrier systems of the telegraph era. Listen to the output of a dial-up modem, and one hears "mark" and "space" tones that would be quite familiar to a telegraph engineer from the 1940s.

It is this modem technology, which allows one to use landline telegraphy today. In the 1980s, Ace Holman, a retired AT&T engineer, with the help of Greg Raven, Ed Trump, and other members of the Morse Telegraph Club (MTC), constructed a telegraph hub system built around modems using the old Bell-103 standard. The process of using the hub is actually quite simple:

An operator at a remote telegraph office configures his instruments in a normally closed current loop. Through a simple interface circuit, this loop is coupled to the input of a simple computer modem, such as an old Tandy DCM-6 or Western Union TLA. He then dials into the hub. At the hub side, an auto-answer frame detects the ringing voltage, answers, and automatically couples a dial-tone line to one of several modems associated with the hub. Through this process, multiple telegraph offices can be interconnected and share a common circuit. In practice, the telegraph

instruments behave just as if they were on an actual wire. One can still break the circuit by opening his key, and the sounders and relays at each connected office respond in unison.

Two hubs are currently in operation. The US telegraph hub ("KB") is located at Buchanan, Michigan, and the Canadian telegraph hub (HN) is located in Toronto, Ontario.

Enter The Internet

While the hub systems are still widely utilized, newer members of the MTC are beginning to adopt the "Morse KOB" program (www.morsekob.org) developed by MTC member Les Kerr. This system replaces the older hub technology with a computer server. As with the hub system, the traditional telegraph instruments still work as originally intended. With this system, a local current loop is established to operate the traditional telegraph instruments. This loop is then connected to a computer via a simple serial port interface circuit. Specially designed software is then used to communicate with the remote "KOB" server. With this system, an almost unlimited number of telegraph offices can be linked together, all of which behave just as if they were on a traditional telegraph wire 75-years ago!

The KOB system also allows one to access continuous news broadcasts, weather bulletins and code practice in American Morse code on any one of several channels. These services are ideal for one wishing to learn American Morse code or for those who wish to operate an authentic telegraph sounder in association with a museum exhibit.

The Repeater

I have reworked the Bell System Athearn Repeater originally used by Ace Holman to link the older KB telegraph hub with the more recent Internet based KOB network. On one side of the repeater, is a local current loop interfaced with the KB hub equipment. The other side of the repeater is a local current loop interfaced with the KOB network. This system provides a rare opportunity to see an original 80-year-old telegraph repeater in use in a manner consistent with its original application. A brief discussion of this repeater can be found on "YouTube" at: http://www.youtube.com/watch?v=_l8FpKK37cw

Donations

The MTC is looking for older Bell-103 standard modems. Examples include the old Tandy DCM-6 and the military BZ-277 A/G analog data interface. While these are obsolete for computer applications, telegraphers wishing to become active on the hub systems would be grateful for the donation of these older style modems. Please contact us at the following e-mail address if you have one to donate: jameswades@gmail.com

never seen a landline telegraph circuit in operation. Most are surprised to learn the American Morse code is in use. As a matter of fact, many are unaware that commercial and railroad telegraphers use the original version of the Morse code, which differs significantly from the Continental Code used by radio amateurs. A few individuals even had to be convinced we were actually transmitting the messages! One visitor, after hearing the explanation of how the telegraph circuit works was heard to say "I don't know whether to believe you or not." It took some time to convince him that the telegraph equipment was functional and the operators actually knew what they were doing.

During five or so hours of operation, approximately 322 Santagrams were originated and transmitted to Fairbanks. This is the highest quantity yet, and the interest is stronger with each passing year. We have found that the use of Morse adds an

air of mystery to such events, which would not be present with the use of voice or data communications. The success of the event owes much to the very uniqueness of the process of telegraphy.

After the conclusion of the event, Ed Trump at Fairbanks sends a list of children's first names, ages, and cities to the Editor of the local newspaper, so that children can see their messages made it to the North Pole. This provides both relevant feedback and increases the overall value of the event.

Ultimately, it's a win-win for everyone in which Christmas cheer and hope are provided to the children while the older children and adults are able to witness an important part of our telecommunications history in action. In addition, the local amateur radio club builds goodwill and interest in the community.

There seems little doubt a similar event can be created in other communities.

While an American Morse operator may be hard to come by in many areas, CW could certainly be used and it too would undoubtedly provide the necessary air of mystery, which seems to greatly add to such an event.

If you would like to learn more about land-line telegraphy, visit the web site of the Morse Telegraph Club at: www.morsetelegraphclub.org

One can also visit the Saginaw Valley Amateur Radio Association web page at: www.k8dac.com

Additionally, a brief video of the activity taken by Bob Wades, KA8KDR, during the activities at the Saginaw Historical Museum is available on "YouTube." Simply type "telegraph operator Saginaw" in the "YouTube" search engine.

Upcoming Changes To The Traffic Column

In recent months, much thought and discussion have been given to the future of the *Traffic* column. After several discussions with Editor Nancy Kott, we have decided to change the focus of the column somewhat. While we will continue to discuss traffic handling, the intent will be to expand the focus to include specific issues of emergency communication from home or passing traffic from a basic portable station in times of emergency.

Beginning in our next column, we will be returning to basics. One can expect columns on the theory and "mechanics" of emergency communications ranging from how to check-in to traffic nets to developing emergency power resources or deploying stations in the field.

While we will likely provide occasional insights into the best management practices for EmComm groups, the primary emphasis will be on traffic handling and individual preparedness. Our plan is to promote those skills and capabilities which can allow a radio amateur, either individually or within an organized group, to be genuinely prepared to assist himself, his family, or his community with high-quality emergency communications in the event of a disaster.

In keeping with this change, the name of the column will change to *Traffic and Preparedness*.

Happy 2010!

Finally, with this *Traffic* column, I would like to extend my best wishes for a happy and prosperous new year to all of our *WorldRadio Online* readers.

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HAMFESTS & SPECIAL EVENTS

OHIO - K8BF 5th Annual Freeze Your Acorns Off (FYAO) QRP Special Event Station, Saturday, February 27, 1500 UTC - 2300 UTC. Fred Fuller Park, Kent, OH. Portage County Amateur Radio Service (PCARS). General areas of 15, 20, 40 and 80 meters both CW & SSB. Also Echolink through the KC8RKV echolink node. Certificate available - SASE to: Al Atkins, KB8VJL, 12433 Chamberlain Rd., Aurora, OH 44202

NEW JERSEY - New Providence ARC Auction, February 19, New Providence Municipal Building Gym, New Providence. Sellers 5:30 pm, buyers 6:30 PM, auction starts 7 PM. Contact James Kern, KB2FCV, email james1787@aol.com, phone 908-219-4016, www.nparc.org.

PENNSYLVANIA - WACOM Special Event Station - February 1 through February 8th, 1900Z-1900Z, Washington, PA. Washington Amateur communications, W3C, Washington County, Pennsylvania Sportsmen Show. 21.285 14.280 7.260. QSL, Ed Oelschlager, 60 Carl Ave., B2, Eighty Four, PA 15330. For more info: wa3com@gmail.com or www.wacomarc.org

SOUTH CAROLINA - 37th Annual & Original Charleston Hamfest and Computer Show - Saturday, February 2, 8AM - 3 PM, Exchange Park Fairground, 9850 Hwy 78, Ladson. Talk-in The WA4USN linked Repeater System - 146.790-No-Tone Charleston, 145.250-Tone 123.0 Summerville and 147.045+ Tone 103.5 St. George. For more info: email wa4usn@amsat.org, phone Jenny, website www.wa4usn.org

WASHINGTON - Commemorating George Washington's birthday - W7G - Transmitting from the city of George in the state of Washington from 2200 UTC on February 19 through 2359 on February 22. Look for us around: 14.250 18.135 7.225 3.880. QSL via W7BJN.

Have your hamfest or special event listed . . . click here!



SPECIAL EVENT

Angel Santana, WP3GW, holds his Certificate of Participation in the Arecibo Observatory Special Event, activating the callsign KP4AO, November 1, 2009. Standing next to WP3GW is Angel Vazquez, WP3R, President of the radio club and organizer of the event, and an all ham family from the city of Trujillo Alto: Jose, KP4JRS, his father Jose, KP4JFR, his sister Marie, NP3YL and kneeling is Shelia, NP3SI, the wife of KP4JRS.

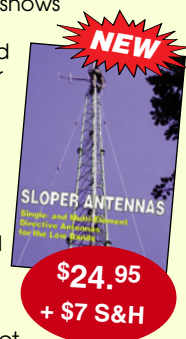
Photo by Angel Santana, WP3GW

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CW is the Real Language of Love

By Randall Noon, KCØCCR

Some people think French is the language of love. *Au contraire mon ami*. CW is the language of love. Allow me to prove my case.

First, consider the fact that once the basic CW alphabet is known, CW can be more or less understood by persons who have no language at all in common. Using Q-codes is like knowing all the common “Getting Around” phrases in all the Berlitz language books for travelers. Consequently, if a person meets someone on the air using CW that he or she would like to know better, but speaks a foreign language, it is not a problem. On the other hand, if a person is using SSB, NFM, or AM and hears a potential Valentine transmitting from Flanders, and doesn’t happen to speak a word of Walloon, Frisian, or Limburgish, the chance of any romance blossoming from the QSO is slim.

Then, there is the fact that CW sounds poetic and musical. Shortwave listeners who don’t know CW have told me how they often listen to CW exchanges in the amateur bands just because they sound pretty and they enjoy the rhythms. It’s sort of like listening to the ocean waves, rain, or New Age Music. One night during a QSO with a fellow in Ohio, he asked me out of the blue whether I played an instrument. When I told him I did, he then told me he was a retired music teacher and he thought my strings of three consecutive dits in characters like “S” or “3” sounded like triplets being played.

There are publications and web sites that explain how to turn CW messages into music. Two such sites are <http://homepage.ntlworld.com/dmitrismirmov/MorseMusic.html> and www.philtulga.com/morse.html.

Several songs have Morse code letters in their musical themes, and some have even used Morse code alone as a solo part. Everyone knows about the Morse code “V” for victory theme in Beethoven’s Fifth Symphony, and one of the National Public Radio bumps is a piano vamp that sounds like “C” followed by “S” repeated over and over.

Have you heard Joe Walsh’s *Songs for a Dying Planet*, where the song, *Vote for Me* is preceded by a CW message? Joe Walsh holds an Advanced Class license, by the way, and has sometimes used Morse code solos to introduce other songs. There is a song by Rush called YYZ in their album, *Moving Pictures*. The rhythm that corresponds to the letters “Y-Y-Z” in Morse was inspired by landing at Toronto International Airport, whose three letter airport code is YYZ. In Kate Bush’s album, *Hounds of Love*, she worked S-O-S into the song *Watching You Without Me*.

Of course, my personal favorite use of CW in music is done by the Ham Band, who compose and play music for ham operators. My favorite number of theirs is *It’s Great to QSO in Morse Again*. For Valentine’s Day, however, you may wish to listen to their sad, three-quarter time love song, *The Radio Widow*. There are many more examples of CW in music too

numerous to list here. They all attest to the fact that CW is so much like music that musicians actually incorporate CW into their compositions.

With respect to poetry, there is nothing more romantic than listening to the Bard’s sonnets in CW. All 152 of Shakespeare’s sonnets have been transcribed into CW for your listening and CW copying improvement pleasure. A person can chose a listening speed at 7, 13 or 20 wpm. The web site for this literary treat is http://www.retards.org/radio/shakespeares_sonnets_cw/. For those who recall the song *Brush up Your Shakespeare*, from *Kiss Me Kate*, the lyrics of that song are still true today:

Brush up your Shakespeare,
Start quoting him now.
Brush up your Shakespeare
And the women you will wow.

By the way, the reader can see the *Brush up Your Shakespeare* number performed on You Tube at <http://www.youtube.com/watch?v=aSmZfnax1yw>. Also, did you know that there are books on CW, such as *The Princess of Mars?* These are great ways to enjoy improving your ability to copy CW. Per license agreement, you can download the Edgar Rice Burroughs science fiction novel at http://www.hotpeppersoftware.com/downloads/pom_downloads.html. It’s not a Shakespeare sonnet, but it’s certainly fun.

Of course, CW could not be claimed to be the language of love unless it was actually used to bring lovers together, and it has done this very well since the 1840’s. Long before the internet and chat rooms, there was Morse code. When telegraph lines were quiet and operators had to ensure that the lines were open, they regularly tested the lines by sending messages of no consequence. When single male telegraphers in small town railroad stations and telegraph offices discovered that the large, central telegraph offices in the cities were often staffed with single ladies, it didn’t take long for messages of no consequence to turn into messages carrying all kinds of consequences. As noted in the book, *The Victorian Internet* by Tom Standage, the telegraph was the first instant communication system to promote love and romance at a distance, and Mr. Standage artfully recounts many such romances in his book. Besides male and female telegraphers being smitten by Cupid, there are also many stories of proposals, rendezvous, love notes, assignations and arranged marriages being made via Western Union.

Likewise, CW in radio has been used since it was invented to promote romance. Who hasn’t seen a movie on late night television where there was a marriage performed by proxy over the radio using telegraphy during a storm on the high seas? For those who listen the bands in the more quiet regions, such as 14.100 to 14.150, 21.100 to 21.200, or 28.100 to 28.300 MHz there are lots of people passing messages back and forth who

are using CW to get to know one another. And, of course, there are also messages on the CW sub-bands of love gone badly. One night I was listening in the upper 15-meter CW sub-band when I heard an exchange that went something like this.

Ca Op: I can't believe that jerk.

NY Op: Yes, he didn't deserve you.

Ca Op: Boy, I am getting even.

NY Op: How?

Ca Op: I am sitting here in the wow-est lingerie he will never see.

NY Op: Yes, serves him right the cad.

By the way, the power of Cupid on the CW sub-bands should never be underestimated. One trick of Field Day groups to increase contact traffic is to have their YL operators mention their name during the CW exchange like this: de WZ9ZZQ 10-A NE 10-A NE OP IS SUZI SUZI QSL? That exchange often results in an immediate pile up on that frequency.

February is not only the month where CW is the language of love; it is also a month for the love of CW, even when it is freezing cold outside. Here is a Scholastic Aptitude Test type CW analogy question for fun involving February.

If New Zealand is the antipode to Des Moines, Iowa, give or take a few hundred miles, what is the equivalent antipode of Field Day?

Give up? It's "Freeze Your Keys Day." This year "Freeze Your Keys" day falls on Saturday, February 20. Like Field Day, this is a day set aside in the middle of winter where operators go outside, set up Special Event stations, usually QRP, and prove that they can operate even when it is cold enough to freeze your keys. If a person wants to join in the fun, the operating hours for the event are from 1400 to 2200 UTC (8 am to 4 pm CST). One of the clubs operating in the cold on Feb. 20 will be the Kickapoo QRP Amateur Radio Club from Leavenworth, Kansas, who will be on 14.060 and 7.040 MHz. QSL via Gary Auchard, 34058 167th St, Leavenworth, KS 66048-9473.

The FISTS Winter Sprint is Saturday February 13, 1700Z-2100Z. The rules and an entry sheet are available at <http://www.fists.org/sprints.html>. This is a great CW event for first time contesters. FISTS are known for being patient with beginners and will slow down when asked ("pse QRS"). Give it a try.

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