COLLINS AMATEUR RADIO CLUB
Richardson, Texas

SIGNALS
MONTHLY NEWSLETTER

Volume 40 Issue 12 **Web Site** http://www.w5rok.us **September 2019**

CARC
Membership Meeting

Tuesday 24 September 2019
1700 Social 1730 Meeting
1800 Program

Methodist Richardson Medical Center
At Bush/Renner/Shiloh Intersection
Conference Room A in Hospital Building

Subject:
"MARS & Amateur Radio—Supporting the Mission" by Bill Swan K5MWC

Local Club News

Meeting Notice

The next meeting will be held Tuesday, September 24, 2019, beginning at 5:30 p.m. in Conference Room A at the Methodist Richardson Medical Center, 2831 E President George Bush Hwy, Richardson, TX 75082 (intersection of George Bush and Renner Rd). Socializing begins at 5 p.m.

The program will be "MARS and Amateur Radio -- Supporting the Mission", presented by Bill Swan, K5MWC. Bill was employed by Rockwell Collins and the former Collins Radio Company for 44 years, retiring in 2011. He was first licensed as KN5MWC in 1957 and has been very active in amateur radio ever since.

Bill helped found the Plano Amateur Radio Klub in 1972, is a life member of the ARRL, and has been heavily involved with amateur radio emergency communications at the local, Section and State level. Collin County ARES owes its beginnings to K5MWC. He is a member of Army MARS.

A 1965 graduate of Texas A&M University (BSEE), he resided in Plano until 2001, when he moved to McKinney. Bill is a Registered Professional Engineer in the State of Texas, and, has been very active in the National Management Association and his church - Messiah Lutheran of Richardson and Plano.

(by Frank Krizan KR1ZAN)

CARC Community Service Activities

Siren Testing Dennis Cobb WA8ZBT, John McFadden K5TIP and Jim Skinner WB0UNI participate in the Richardson emergency siren testing. The July test was performed on 4 September. Once again, many of the sirens had one or more malfunctions, with at least five totally failing. The sirens are monitored by amateur radio operators and reports made using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz. Siren testing occasionally uses the University of Texas at Dallas (UTD) repeater at 145.430 MHz, which is designated as the backup repeater.

Crime Watch Patrol Jim Skinner WB0UNI participated in Richardson Duck Creek Crime Watch Patrol (CWP). CWP members, after successful completion of Richardson Police Department Training, patrol their neighborhoods and report all suspicious activities to the Police Department.

CARC August 2019 VE Test Session Results

by Frank Krizan, KR1ZAN

The Collins Amateur Radio Club's VE testing session on Tuesday, August 27, 2019, had five candidates testing.

A total of five exam elements were taken with four credits given for new Technician licenses and one for Extra.

Cody of Rockwall is now KI5GGV, Neal of Richardson is now KI5GGW, and Tony of Richardson became KI5GGY -- all new Technicians. Carl of Dallas earned his Tech license at our VE session and became KI5GGX and has already advanced to General at another testing session. Marc of Forney, KG4VMF, passed his Extra at our session

Congratulations to everyone.

VEs assisting with this session were: Victor Cook, AB5VC, Frank Krizan, KR1ZAN, Daryl Morgeson, AF5QJ, and Mark Wells, K9MDF.

The next CARC VE Test Session will take place on Tuesday, September 24, 2019, immediately following the regular CARC monthly membership meeting (about 7:30 p.m.). The test sessions are held in Conference Room A of the Methodist Richardson Medical Center, at the Bush/Renner/Shiloh intersection in Richardson. Walk-ins are welcome, but, it's best to register with the lead examiner, Kerry Weeks, at weeks.kerry@gmail.com or by phone at (214) 478-3230.

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VE SESSIONS

Collins Amateur Radio Club (CARC) Test sessions take place on fourth Tuesdays, immediately following the regular CARC monthly membership meeting (about 7:30 p.m.). The test sessions are held in Conference Room A of the Methodist Richardson Medical Center, at the Bush/Renner/Shiloh intersection in Richardson. Walk-ins are welcome, but it's best to register with the lead examiner, Kerry Weeks, at weeks.kerry@gmail.com or by phone at (214) 478-3230.

Dallas tests are held on the fourth Saturday of each month at 1000 hrs. 13350 Floyd Rd. (Old Credit Union) Contact Bob West, WA8YCD 972.917.6362

Irving tests are held on the third Saturday of each month at 0900. Fifth and Main St. Contact Bill Revis, KF5BL 252-8015

McKinney VE test sessions are held at the Heard Museum the first Sunday of the month. The address is 1 Nature Place, McKinney TX. The time of the testing is 1430, ending no later than 1645. ***Note: no tests given on holiday weekends.***

Garland testing is held on the fourth Thursday of each month, excluding November, and begins at 1930 sharp. Location is Freeman Heights Baptist. Church, 1120 N Garland Ave, Garland (between W Walnut and Buckingham Rd). Enter via the north driveway. A HUGE parking lot is located behind the church. Both the parking lot and the Fellowship Hall are located on the east side of the church building, with big signs by the entrance door. Contact Janet Crenshaw, WB9ZPH at 972.302.9992.

Plano testing is on the third Saturday of each month, 1300 hrs at Williams High School, 1717 17th St. East Plano. Check Repeater 147.180+ for announcements.

Richardson The Richardson Wireless Klub (RWK) VE team hold license testing on the third Thursday of each month at St. Barnabas Presbyterian Church, 1220 West Beltline Rd. Testing begins at 1900 hrs in room 12. Enter through the Northern most door on the east side of the church building. For further information contact Don Klick KG5CK. 972.464.2889 or E-mail rwkhamtest@gmail.com.

President and VP Messages

Hi everyone. I hope you have been enjoying the wonderful Texas weather this summer. I don't have much this time, as I have still been dealing with family issues, and my busy season for my photography is going into high gear.

We have ordered the keyer for the club station. We now have our new call sign, although we still have some issues with the license because our FRS number has been attached to several company licenses which are un-related to our club station. The new call sign is N5CXX, and has been updated on QRZ.com.

This month's speaker is Bill Swan, K5MWC, who will be speaking on "The New MARS" - the Military Auxiliary Radio System. This is a very interesting presentation, so come out and learn about the MARS Program.

Also, coming up in November is the election of club officers. We have some new members and we need to get them involved. I have been President for the past 3 years, and it is time to get a new President, and we need a Vice President, as this position has been vacant for over a year.

I hope to see everyone at the meeting this month.

73's,
Gene, K1GD
CARC President

Secretary's Report

27 Aug 2019

President Gene Duprey K1GD called the meeting to order at 1732.

The following were present at the meeting:

Jim Brown	AF5MA
Victor Cook	AB5UC
Mark Dempsky	N5MD
Gene Duprey	K1GD
Dave Jaksa	W0VX
Frank Krizan	KR1ZAN
Daryl Morgeson	AF5QJ
John McFadden	K5TIP
James Sanscha	N5AGN
Mike Schmit	WA9WCC
Jim Skinner	WB0UNI
Bill Swan	K5MWC
Rohan Thomas	KG5RCN
Mark Wells	K9MDI
Joe Wolf	N5UIC

Officers and Committee Reports:

The Secretary's Report is contained in this newsletter. The report by the Activities Chairman was presented and is summarized herein.

Old Business:

Last month membership renewal requests were mailed to all club members on the current roster. Gene Duprey K1GD reported that as of the meeting 20 applications had been returned to the club for processing.

Dave Jaksa W0VX reported that the approved purchase of a paddle keyer was on hold awaiting approval of the club's new call sign. The new call sign will be engraved on the keyer prior to delivery.

New Business:

Gene Duprey requested a volunteer to assume responsibility for tracking and updating of club membership records. These records are currently being updated as noted above. Three members (Frank Krizan KR1ZAN, Jim Skinner WB0UNI and Bill Swan K5MWC) indicated interest; they were directed to coordinate and agree on a plan to move forward.

Frank Krizan, Activities Chairman, discussed the program to follow this month's meeting. Those present will divide into two discussion groups: Group 1, led by Dave Jaksa, will discuss DXing and Morse code topics; Group 2, led by Frank Krizan, will discuss digital communications modes and related topics.

Frank also reviewed upcoming programs and activities. He requested candidates for club elections to be held in November, and suggestions for the site of the annual club Christmas dinner in December.

Meeting plans through December were addressed in last month's report. Additionally, the January meeting will cover reports by outgoing officers and installation of newly-elected officers. The program will be a "show-and-tell" event, with members presenting and discussing topics of their choice, with an approximate duration of three to five minutes each.

Adjournment:

The meeting was adjourned at 1755, followed by a program of roundtable discussions as described by the Activities Chairman under New Business.

"I'm Good on QRZ.COM"

by Frank Krizan, KR1ZAN

You may be very active on various social media platforms, but, when it comes to ham radio, the 'go-to' place is QRZ.COM.

For those hams who've been around for a while, QRZ.COM is a familiar place. It's grown from its early days of providing basic information derived from the FCC database. Hams can add their own biographies and photo galleries, provide QSLing instructions, brag about on-the-air accomplishments, maintain a station log, ham radio news, forums, advertisements, and more.

For those using computer logging, many logging applications have the ability to obtain real-time access to the QRZ.COM database for filling in names addresses, zones, logging instructions, etc. for stations being worked. A very nice feature of one's QRZ.COM account is visibility for a station's email address.

You'll often hear another ham tell you "I'm good on QRZ.COM" — meaning that you can find their email address there, plus photos and a description of the other station's rigs and antennas.

Go to QRZ.COM and enter your call sign in the upper left-hand corner to see what QRZ knows about you. If you're a newcomer to ham radio, all that will be shown is your mailing address, as registered with the Federal Communications Commission. The "Details" tab will only show other public information from your FCC entry.

In order to see anyone's email address, more "details" or edit your own biography and photos, you'll need to register as a user. There are several ways to work your way to registering on the web site, but the easiest way is to navigate

to: https://ssl.qrz.com/support?op=newacct. Follow the instructions, and you'll soon be able to enjoy most of the services offered by QRZ.COM.

If you want computer access from a logging program, you'll need to become a paid subscriber. The link, available under the "Contact Us" tab, is https://shop.qrz.com. Here you can select the level of subscriber you want to be or purchase several nice certificates for your shack.

As a minimum, I encourage all hams, new and old (well, at least experienced), to register as a QRZ.COM use, and set in your email address. It's very convenient for other hams you meet, in person or on the air, to be able to contact you to discuss ham radio or topics you've discussed on the air. Also, if there's something not right with your signal, a friendly ham may want to let you know, politely, without embarrassing you on the air.

Need help with your QRZ.COM account? There are several FAQs available and a "Contact" form to get help from staff (who are mostly volunteers). Or ask your question at a Club meeting. There's probably someone around who's done something similar to what you're wanting to do.

Rose, Chapter 6

Here is the next chapter of a new original work by Scott, N7NET. Enjoy, and once again, thanks to Scott.

The colors and the imaginative designs featured on some of Charlie's QSL cards fascinated Rose. Many were the products of print shops, while others were definitely the creations of skilled hands and gifted artists. In addition, many of the countries represented in these QSLs were from places she'd always believed were backward, perhaps incapable of such creations.

By the time Charlie had finished the pickup she had one card she wanted more detail about. "This one," she said, passing a card to him that pictured a radio sitting on a grass mat in what appeared to be a third world country. "Is this for real?"

"Yes, I remember this one. He and I have QSOed several times. He's a civil engineer. He earned his degree in the United States. His countrymen financed his education. He has returned to his homeland to help engineer roads, bridges, and buildings."

"How interesting," she remarked, studying the card again. "I should go home. My folks will be worried about me."

"You haven't had lunch, have you?" he asked.

"No, I'll eat at home."

"May I take you to lunch at May's?"

"I don't know if my father would approve. You and I haven't known each other very long, you know."

"There's a phone on the wall. Call them," he suggested.

She was hesitant. He wondered if that hesitation was because she didn't want to have lunch with him.

"If you'd rather not have lunch, I understand."

She went to the phone and Charlie stepped outside so she could talk privately.

"Mother said it would be okay," she said, joining him on the sidewalk.

"And your father, how does he feel?"

"Well, he's a little over protective. I'm his little girl, you know. But Mother said it would be okay."

"Artie, I'll be at May's if something comes up." Charlie shouted across the shop.

Virgil didn't mend any fences, nor did he fix the flat tire on the wheat drill after returning home. Instead, he headed for his favorite chair which gave him a view of the lane leading to the house as well as the kitchen clock.

Anne knew his was stressed, but she offered no comfort. Instead, she brewed a pot of coffee.

Then the phone rang.

Virgil heard enough of the conversation to know that Anne was consenting to her having lunch with that guy running the shop. He thought she must be out of her head. But he held his tongue. He knew he was over protective. It was tough turning loose. Even worse, he knew the day was coming when all this would be beyond his control. His stomach turned at the thought.

At last, the pickup came into view. As badly as he wanted to rush out to meet his daughter in the drive with a thousand questions, he kept his seat and waited.

"How does the pickup run?" he asked as she entered the living room.

"It runs good, Daddy, better than it ever has since I started driving. And the clutch doesn't chatter," she replied, dropping her purse on the sofa and then taking a seat across the room from him, waiting for the questions. She saw him glance at her mother and then noticed the stern set of her mouth. She knew he'd been warned to keep his trap shut.

"Did you learn some geography, Rose?"

"Yes," she said, describing the array of artwork and photos she'd seen. "I'll never look at overseas countries the same way again."

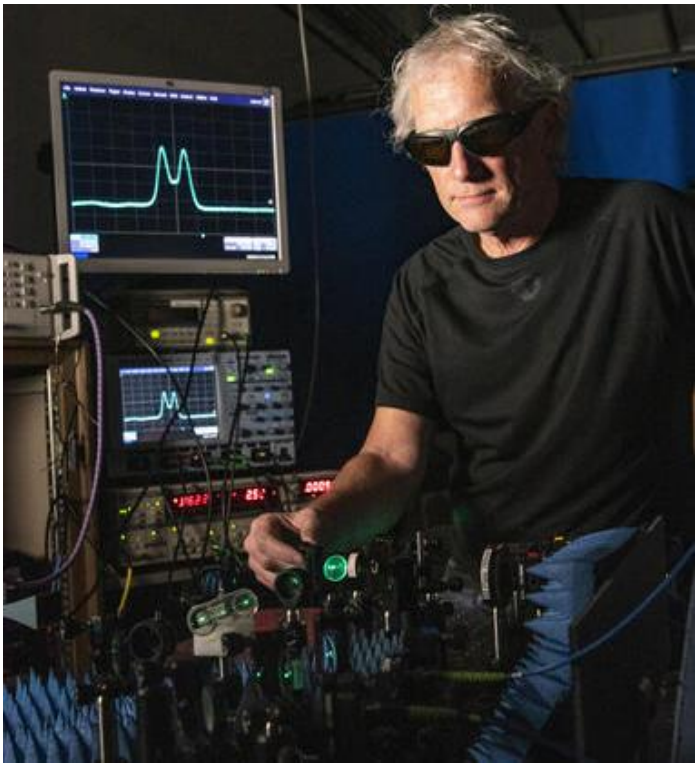
(To be continued)

(Contributed by Steve Phillips, K6JT)

NIST Team Shows Atoms Can Receive Common Communications Signals

September 05, 2019

Researchers at the National Institute of Standards and Technology (NIST) have demonstrated a new type of sensor that uses atoms to receive commonly used communications signals. This atom-based receiver has the potential to be smaller and work better in noisy environments than conventional radio receivers, among other possible advantages.



NIST researcher Chris Holloway adjusts a mirror to align a laser beam used in an atom-based receiver for digitally modulated communication signals. Credit: Burrus/NIST

The NIST team used cesium atoms to receive digital bits (1s and 0s) in the most common communications format, which is used in cell phones, Wi-Fi and satellite TV, for example. In this format, called phase shifting or phase modulation, radio signals or other electromagnetic waves are shifted relative to one another over time. The information (or data) is encoded in this modulation.

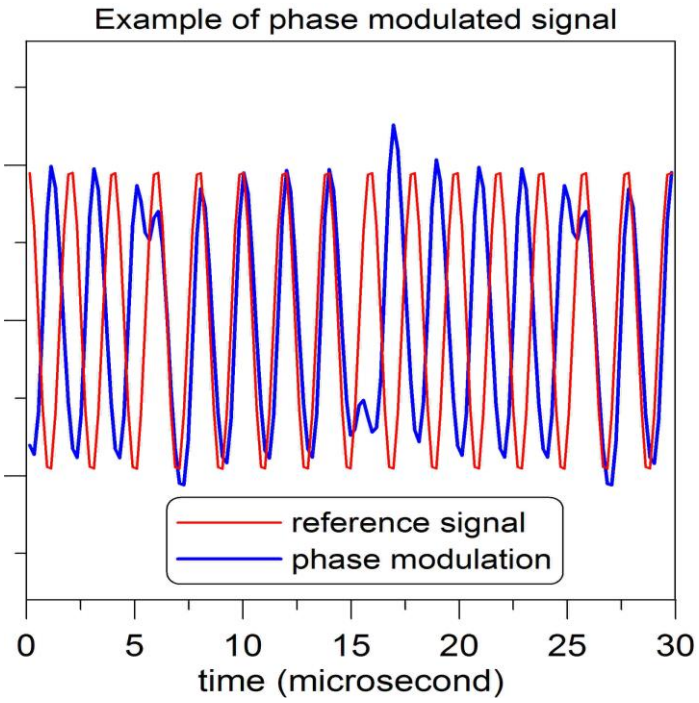
"The point is to demonstrate one can use atoms to receive modulated signals," project leader Chris Holloway said. "The method works across a huge range of frequencies. The data rates are not yet the fastest out there, but there are other benefits here, like it may work better than conventional systems in noisy environments."

As described in a new paper, the quantum sensor received signals based on real-world phase-shifting methods. A 19.6 gigahertz transmission frequency was chosen because it was convenient for the experiment, but it also could be used in future wireless communications systems, Holloway said.

The NIST team previously used the same basic technique for imaging and measurement applications. Researchers use two different color lasers to prepare atoms contained in a vapor cell into high-energy ("Rydberg") states, which have novel properties such as extreme sensitivity to electromagnetic fields. The frequency of an electric field signal affects the colors of light absorbed by the atoms.

In the new experiments, the team used a recently developed atom-based mixer to convert input signals into new frequencies. One radio-frequency (RF) signal acts as a reference and a second RF signal serves as the modulated signal carrier. Differences in frequency and the offset between the two signals were detected and measured by probing the atoms.

While many researchers have previously shown that atoms can receive other formats of modulated signals, the NIST team was the first to develop an atom-based mixer that could handle phase shifting.



Wireless communications often use a format called phase shifting or phase modulation, in which the signals are shifted relative to one another in time. In this example, the communications signal (blue) contains periodic reversals relative to the reference signal (red). These reversals are the blips that look like cats' ears. The information (or data) is encoded in this modulation. Credit: Holloway/NIST

Depending on the encoding scheme, the atom-based system received up to about 5 megabits of data per second. This is close to the speed of older, third-generation (3G) cell phones.

The researchers also measured the accuracy of the received bit stream based on a conventional metric called error vector magnitude (EVM). EVM compares a received signal phase to the ideal state and thus gauges modulation quality. The EVM in the NIST experiments was below 10 percent, which is decent for a first demonstration, Holloway said. This is comparable to systems deployed in the field, he added.

Tiny lasers and vapor cells are already used in some commercial devices such as chip-scale atomic clocks, suggesting it might be feasible to build practical atom-based communications equipment.

With further development, atom-based receivers may offer many benefits over conventional radio technologies, according to the paper. For example, there is no need for traditional electronics that convert signals to different frequencies for delivery because the atoms do the job automatically. The antennas and receivers can be physically smaller, with micrometer-scale dimensions. In addition, atom-based systems may be less susceptible to some types of interference and noise. The atom-based mixer also can measure weak electric fields precisely.

Researchers now plan to improve the new receiver by reducing laser noise and other unwanted effects.

Paper: C.L. Holloway, M.T. Simons, J.A. Gordo and D. Novotny. 2019. Detecting and Receiving Phase Modulated Signals with a Rydberg Atom-Based Receiver. IEEE Antennas and Wireless Propagation Letters. September 2019 issue. DOI: 10.1109/LAWP.2019.2931450

(Reprinted courtesy NIST.gov website. Contributed by Bob Kirby K3NT)

Sporadic SIGNALS …

… captured by Frank KR1ZAN

Dan Romanchik, KB6NU, posted some interesting thoughts this month about a DXpedition that was planning to use an FT8 Robot called a **"FoxBot"**. After the ARRL Board passed a couple of motions declaring that a human must initiate radio contact from both sides of a QSO for DXCC and contest credits, the DXpedition removed all mention of the FT8 Automated system.

Read more of Dan's thoughts on **robots and other ham radio topics** at https://www.kb6nu.com/dxpedition-to-use-ft8-robots/ .

The **ARRL Letter of Aug. 22**, 2019, and the **September 2019 QST**, page 62, have some excellent history on the beginnings of the American Radio Relay League and Hiram Percy Maxim. Maxim, and the League, were instrumental in lobbying Congress to reinstate amateur radio privileges following World War I. I hope you'll take the time to read up on a bit of ham radio history. Without the **"Old Man"**, there might not have been an amateur radio as we know it today.

There are many **"net lists"** that float around from time to time and often get out of date quickly. This has been especially true of new technologies (i.e., packet, D-STAR, DMR, etc.). **Daryl Stout, WX4QZ**, has created an excellent set of well-maintained Nets for D-STAR, D-Rats, DMR, CQ100 and EchoLink in the files section at **DStarNets at groups.io**. You'll have to become a subscriber (free) so you can access the file. If you're not a 'joiner' send me an email request and I'll be happy to download and send a copy to you. The list isn't just a table of nets, it's a running commentary on the net, times, nodes, etc., and, relatively big. Daryl updates the list quite regularly.

From John Stratton, N5AUS, Director, ARRL West Gulf Division: The **ARRL Foundation** has announced it is accepting **scholarship applications** between **September 1, 2019 and December 31, 2019** for the academic year 2020-2021. If you know a deserving Amateur, please urge them to apply. For details of the program, please see: http://www.arrl.org/news/arrl-foundation-scholarship-program-is-now-accepting-applications

John, formerly the Vice-Director of West Gulf Division, **became the Director** following the retirement of Dr. David Woolweaver, K5RAV. David had served as Director for 10 years and as Vice-Director for 10 years prior to becoming Director. I've had several beneficial and enlightening conversations with John since he became Director, and, find him to be as cordial, patient, competent and informative as Dr. Woolweaver was. You can find John **Stratton's contact info in QST or on the ARRL web**. I encourage you to contact him via email or telephone when you have questions about the League or amateur radio regulatory issues. The same holds true for our new **Section Manager, Steven Lott Smith, KG5VK**. Don't be shy — give them a call.

WWV turns 100 years old on October 1. A Special Event Station, **WW0WWV**, will be set up adjacent to the WWV transmitter site in Fort Collins, Colorado. "Round-the-clock "operation will take place on CW, SSB, and digital modes, from September 28 to October 2. Operations on HF bands including 160m. Satellite ops on SO-50, AO-91, and AO-92 and 6-meter meteor scatter. For more information, see the WWV Centennial Committee website: http://wwv100.com/

I'm not sure if this is ham radio or not, but, for those who aren't licensed yet and those who are newly licensed with no equipment and want to get a taste of what amateur radio is like, especially on the HF bands, take a look at **www.hamsphere.com** This site provides a real-time simulation of the ionosphere and equipment and antennas so you can listen in to conversations and take part in QSOs, including calling CQ. **HamSphere** offers just about everything that ham radio enjoys, including certificates, awards, contests and more. **You can try it out for free**, but, if you want to "stay on the air" there's a nominal fee. The more capability you want (i.e., fancy equipment and BIG BEAMS) you'll have to pay more.

The ARRL North Texas Section Manager, Steven Lott Smith, KG5VK, reminds us of the following upcoming **hamfests and conventions**: The **MicroWave Update, Oct 3-5** in Lewisville, TX http://microwaveupdate.org; The **Belton Ham fest "Ham Expo" is October the 4th and 5th** http://www.tarc.org/hamexpo; and, A new Ham fest on **November 2nd — the Parker County Ham fest & Emergency Preparedness Expo** http://www.arrl.org/hamfests/parker-county-hamfest-emergency-preparedness-expo

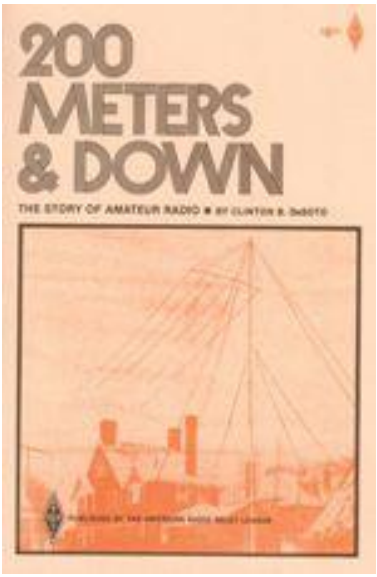
The ICOM folks really gave the entry level market a shake-up when they introduced the IC-7300 a couple of years ago. Now, they're going after the QRP market with the IC-705, just unveiled at the Tokyo Ham Fair. This is a portable HF/VHF/UHF transceiver featuring SDR technology, internal battery, GPS, Bluetooth and D-STAR. The output power is 10W and is can be charged via USB. No real info on pricing or availability, yet, for the US market. Some real competition for the Elecraft KX3.

The Plano Amateur Radio Klub's **70cm Voice repeater (444.250MHz, +, PL=79.7)** is now equipped with Allstar. It is **Allstar Node 50162**. If you're a member of PARK, a few of the Allstar control codes were published via email recently. PARK anticipates upgrading the 2m repeater later this year. The Plano club is working on establishing **additional repeater systems** in various parts of Collin County to enhance coverage for SKYWARN and ARES communication — one in Frisco and another in southwest Collin County.

Early History of Amateur Emergency Communications

by Rick Palm, K1CE

To fully appreciate anything, it's helpful to understand its history. For amateur emergency communications, that is certainly true; however, it is also simply fascinating. Not much has changed in over a hundred years of the radio amateur's role in the disaster and emergency communications arena, except for ever-advancing technology and technique. The following are some gold nuggets I found from reading -- and re-reading and highlighting - ARRL Assistant Secretary Clinton B. DeSoto's classic 1936 book, *Two Hundred Meters and Down--The Story of Amateur Radio.*



On just the second page of the book, DeSoto, in describing the typical radio amateur of 1936, offers up an adventurous band of free spirits involved in the radio art for the simple love of it, but turning serious about altruistic service to humanity when it came time to "saving a hundred lives in a fever-ravished Alaskan village . . ." Technical advancement of the art is their contribution to humanity, too, but with an unparalleled service "of matchless heroism in flood and disaster, . . . with their great emergency system of communications carrying on when all others have failed. In many years no community in distress in this country has been without valiant aid from Amateur Radio." DeSoto called emergency communications by amateurs the "Flower of the Art."

Early history of amateur communications also involves the handling of traffic, upon which, among other things, the ARRL was formed in 1914. Traffic handling by relaying is the essence of emergency communications, of course. "Floods, hurricanes, earthquakes - disasters of all varieties provide a large part of the amateur message total in the form of emergency traffic. Amateurs almost invariably form the last line of communication in times of natural emergency; this has been true in more than forty major and a large number of minor disasters in the past twenty years [that's from 1916 to 1936 - ed.] . Tragedy, drama, human interest incidents of all kinds, provocative of both laughter and tears, have all been logged in these hard-worked amateur radio stations."

DeSoto described the predominant characteristic of the amateur is his altruism: and that certainly is still true today, a hundred years later.

In 1913, on the heels of the research and development of radio design of the time, the primary interest had become application and practice, namely communication and the handling of messages. Amateurs occasionally handled traffic for third parties.

In March, 1913, "a possible new activity for amateur radio made itself apparent when amateur stations successfully

bridged the communications gap surrounding a large isolated area left by a severe windstorm in the Midwest. Amateur stations at the University of Michigan at Ann Arbor and at Ohio State University, in conjunction with numerous individual amateurs in and around the stricken area, handled widespread communications . . ."

Message handling, especially the organized *relaying* of those messages, for fun, friends, and in time of emergency formed the basis of the ARRL, which was to be founded the following year as the needed national organization to represent the amateur's interests. Operating speeds increased with the resulting increased proficiency, and advantages of national representation were manifest.

With significant service with proficiency already provided in times of emergency, the government and the ARRL worked together to prepare for war and the necessary radio operators to support it. In 1917, amateurs were ordered off the air, and as the US went to war, thousands of amateurs with the requisite emergency and message handling experience served the war effort until the Armistice in 1918.

Amateurs were back on the air in late 1919, and a year later, had turned to a new activity, the precursor to many services rendered today to law enforcement and emergency management: "amateur police radio," assisting the police with major crime solving efforts, including stolen automobiles.

In 1922, State governors hailed Amateur Radio operators as a "reserve of radio minute men for national emergencies."

In 1929, a new Army-Amateur Radio System organized networks across the country to assist the Army and American Red Cross for disaster relief communications.

In 1931, after years of experimentation to promote long distance communications, relative to the five-meter band, a few hams realized that there was a place for communications of just a few miles, or "line of sight," a realization that would serve as the bedrock for countless ARES groups forever more.

In 1933, new regulations permitted mobile operation at UHF; informal portable operation was also permitted.

Early Emergency Responses

Amateur Radio disaster responses from1919 to 1936 are summarized in chapter twenty - "Emergencies." DeSoto wrote "Since 1919 Amateur Radio has been the principal if not the only communication link following nearly forty major and a great number of less consequential disasters." He cites the Great Flood of March 1936 as the greatest amateur emergency public service of the time. As flooding expanded, normal communications were cut off, and amateur communication systems expanded flexibly and spontaneously to meet the need in the disaster that affected the entire eastern US. Many were based on the Army-Amateur, Naval Reserve and the ARRL Emergency Corps, forerunner of today's ARES program. At the peak of activity, it was estimated that a thousand amateur stations were engaged in providing effective emergency communications for prompt warning of authorities, immediate evacuation of threatened areas, and expedient supply of relief and rescue assistance. By the end of 1936, amateurs had earned nation-wide recognition for effecting communications where all other means had failed.

Conclusions

In the last chapter of his book, DeSoto expresses what still rings true today: The right of Amateur Radio to exist comes from its public utility. Operators perform a continuing public service in that they train themselves in a highly-specialized and difficult field to be of use to the nation in time of emergency.

Want a thrill like no other for less than $16 and a few hours on a Sunday afternoon? Do what I did and read DeSoto's *200 Meters and Down - The Story of Amateur Radio*. Published in 1936, it covers the discovery of radio physics, experimentation, application, and the breathtaking development of Amateur Radio in the dawn of the art. The main takeaway, among many others, for me was the degree to which *amateurs* and *Amateur Radio operators* were involved in the development of all radio communications, including the broadcasting service. Pick up the book, and find yourself amazed of the early pioneering work of radio amateurs, the kind of pioneering that still goes on today. — 73, Rick, K1CE

(Reprinted with permission from the ARRL Sept. 18, 2019 edition of the ARRL ARES E-Letter)

(Contributed by Frank Krizan KR1ZAN)

Microwave Update 2019

Conference registration is now available on line at www.microwaveupdate.org.

The North Texas Microwave Society would like to invite you to the annual Microwave Update Conference to be held October 3rd through the 5th 2019 at the Hilton Garden Inn and Conference Center in Lewisville (Dallas) Texas. Microwave Update is the premier microwave conference of the year and was initially started by Don Hilliard W0PW (sk) back in 1985.

The latest list of speakers now includes Rex Moncur VK7MO, Tony Emanuele K8ZR, Rick Fogle WA5TNY, Brian Hendryx, Paul Wade W1GHZ, Joe Jurecka N5PYK, Doug Miller K6JEY, Greg McIntire AA5C, Steve Kostro N2CEI, Kent Britain WA5VJB, Bob Stricklin N5BRG, Barry Malowanchuk VE4MA, Tom Williams WA1MBA, Tom Apel

K5TRA, Tom McDermott N5EG, Dave Robinson G4FRE, Ben Lowe K4QF, Skip Macaulay VE6BGT, Warren Ferber WF0T and Al Ward W5LUA. Check out the web site for the titles.

Friday morning will be dedicated to antenna gain measuring led by WA5VJB, noise figure testing led by W5LUA and phase noise analysis led by AF8Z and KC4YOE.

On Thursday afternoon, we plan to have a workshop led by Tom McDermott N5EG on GNU Radio. GNU Radio is a development and simulation environment used to create and test software design radio applications. This is a powerful learning tool and GNU Radio can be used to implement working radio applications.

Topics to be covered during the workshop will include:

Installation of the GNU Radio package in Windows.

Review of GNU Radio capabilities and core concepts.

Review of important GNU Radio modules, building a project, implementing and running projects involving hardware.

Use of Gnuradio Companion (GRC) graphical environment.

Demonstration of Gnuradio Companion (GRC) application with Ettus radio.

The attendee is encouraged to bring their 64-bit laptop with Windows 10. The focus will be on Windows but GNU radio works well in Linux also. The workshop is scheduled for Thursday afternoon from 3 PM until 6 PM.

Our Saturday night banquet speaker will feature Rex Moncur VK7MO who has activated over 100 grid squares on 10 GHz EME in both Australia and New Zealand. Rex has also set numerous distance records on both EME and terrestrial using the various WSJT modes. Rex will show us some of the beautiful places he has visited and talk about his adventures to some of the more remote places down under.

Deadline for the proceedings is September 3rd.

Hotel registration has been setup. The hotel link is

https://hiltongardeninn.hilton.com/en/gi/groups/personalized/D/DALLEGI-MICRO-20191003/index.jhtml.

The conference rate for Thursday, Friday, and Saturday night is $104 per night for a King which includes breakfast. The rate on the same days for a Double Queen is $114. The rates for Wednesday night is $129 for a King and $132 for a Double Queen. The hotel charges a higher rate on Wednesday as they have a lot of business travelers. If your plans change and you can't attend, you have until September 30th to cancel without any cancellation fee. If you book without using the link above please mention North Texas Microwave Society so we can get credit for the room nights as this is required for us to keep conference registration rates as low as possible. The Group Code is "MICRO". If you have any problems with booking the hotel rate please contact w5lua@sbcglobal.net. We would like to have everyone at the same hotel. It's more fun for all.

73

Al Ward W5LUA Conference Co Chairman

Bob Stricklin N5BRG Conference Co Chairman

Upcoming Events

Daily	DFW Early Traffic Net (NTS) at 6:30pm 146.88 – PL 110.9Hz
Daily	DFW Late Traffic Net (NTS) at 10:30pm 146.72 – PL 110.9Hz
Daily	Texas CW Traffic Net at 7:00pm on 3541 KHz and at 10pm on 3541 KHz www.k6jt.com
1st Wednesday	Richardson Emergency Siren Test. At noon using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz.
2nd Wednesday	ARES North Texas HF Net Every month—3860 KHz at 8:30 pm—9:30pm

SEPTEMBER

21-22	**10 GHz & Up – Round 2.** The objective of 10 GHz and Up is for North American amateurs work as many amateur stations in as many different locations as possible in North America on bands from 10-GHz through Light. Amateurs are encouraged to operate from more than one location during this event. Details at http://www.arrl.org/10-ghz-up.
21-22	**EME – 2.3 GHz and Up—**Work as many amateur stations as possible via earth-moon-earth path on authorized frequencies above 50 MHz. From 0000 UTC Saturday through 2359 UTC Sunday. Details at http://www.arrl.org/eme-contest.

OCTOBER

21-25	**School Club Roundup—**Objective: To exchange QSO information with club stations that are part of an elementary, middle, high school or college. Non-school clubs and individuals are encouraged to participate.. A station may operate no more than 6 hours in a 24-hour period, and a maximum of 24 hours of the 107 hour event. Details at http://www.arrl.org/school-club-roundup
19-20	**EME - 50 to 1296 MHz—**Objective: To work as many amateur stations as possible via the earth-moon-earth path on any authorized amateur frequency above 50 MHz. Full weekend 48-hour period (0000 UTC on Saturday through 2359 UTC Sunday). Details at http://www.arrl.org/eme-contest.

COLLINS AMATEUR RADIO CLUB
Richardson, Texas

Mail Station 461-290
P.O. Box 833807
Richardson, TX 75083-3807

TO:

COLLINS AMATEUR RADIO CLUB
Richardson, Texas

CLUB STATIONS
(972) 705-1349

W5ROK REPEATER
441.875 MHz +5 MHz Input
131.8 Hz PL - RX and TX

W5ROK-1 PACKET BBS ROK Node
145.05 MHz

W5ROK-N1, W5ROK-N2 & W5ROK-N3 HSMM-MESHNET Nodes 2.4 GHz

Tuesday 24 September 2019

1700 Social 1730 Meeting

Methodist Richardson Medical Ctr
At Bush/Renner/Shiloh Intersection

Conference Room A in Hospital Building

NEXT SIGNALS INPUTS DEADLINE:
→→→ 11 October 2019 ←←←