

CARC Membership Meeting

Tuesday 25 February 2020
1700 Social 1730 Meeting
1800 Program

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

Subject:
"Low-Noise Receiving Antennas"
Dick Sander, K5QY

Local Club News

Meeting Notice

The Collins Amateur Radio Club will meet on Tuesday, February 25th, from 5:30 p.m. to 7 p.m., in Conference Room B at the Methodist Richardson Medical Center, 2831 E President George Bush Hwy, Richardson, TX 75082 (Renner Rd at George Bush Tollway). Doors will open at 5 p.m. for socializing.



Our February business meeting will include the election of officers for 2020. A slate of nominees was proposed by the Board at the January meeting, and

additional nominations will be solicited from the floor prior to voting.

The technical program for February will be given by Dick Sander, K5QY, on the topic of "Low-Noise Receiving Antennas." Dick is an ARRL life member and was first licensed in 1958. Dick retired from Rockwell/Alcatel Telecom as a senior technical writer.

A very active ham, he's listed on the DXCC Number 1 Honor Roll and has 7BDXCC, 6BWAS, and WAS HF mobile. He is also an ARRL DX card checker including 160 meters. Dick modeled, designed, and built many of his antennas from 160-meter phased verticals to 440 MHz Yagis.

K5QY has given many antenna talks and presentations to local clubs and at DFW's Ham-Com Hamfest. You can check out more of his presentations and articles at www.k5qy.net.

An ARRL VE Testing Session will follow the program (about 7:30 p.m.).

CARC Community Service Activities

Siren Testing Dennis Cobb WA8ZBT, John McFadden K5TIP and Jim Skinner WB0UNI participate in the Richardson emergency siren testing. The February test was cancelled by the city of Richardson due to a winter weather advisory. 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.

2020 ARRL January VHF Contest



Our K5SRT/R ARRL January 2020 VHF contest unlimited rover travel plan was adapted from a plan developed during the fall of 2018. That trip planned for January 2019 didn't happen because of ice storms between Oklahoma City and Dallas Texas. As it turned out those grid squares and additional ones were added to our January 2020 VHF contest trip plans. Our team consisted of Ross K5SRT, Bob K3NT, and Alex KG9DUK with fellow <http://OKRover.info> friends Randy N0LD, Harvey W0HGJ, Nick KB0YHT, Jim-KC0QIE, and Jason.
(Continued on page 4)

CARC OFFICERS			
PRESIDENT Gene Duprey 319.270.8159 geneduprey2015@gmail.com	K1GD	VICE-PRESIDENT AVAILABLE	
SECRETARY Jim Brown 972.495.2209 jhksbrown@verizon.net	AF5MA	TREASURER Rohan Thomas 972.697.3512 Rohan7066@yahoo.com	KG5RCN
ACTIVITIES Frank Krizan 214-563-6679 kr1zan@arrl.net	KR1ZAN	WEBSITE MANAGER Mike Hollingsworth 972.571.6060 w5qh@arrl.net	W5QH
STATION TRUSTEE Bob Kirby 319.360.0500 k3nt@arrl.net	K3NT	NEWSLETTER EDITOR Jim Skinner 214.535.5264 wb0uni@arrl.net	WB0UNI
MEMBERSHIP Bill Swan 972-529-3906 bill@swanshome.net	K5MWC	N5CXX CLUB STATION 972.705.1349 461-290	

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.

SIGNALS is the monthly newsletter of the Collins Amateur Radio Club, published by and for its members. The entire contents of this newsletter are copyright © 2019 by the Collins Amateur Radio Club. Permission is hereby granted to any not-for-profit amateur radio publication to reprint any portion of this newsletter provided both the author and Collins Amateur Radio Club are credited.

President and VP Messages

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

This Section Reserved for messages from our President and/or Vice President

Secretary's Report

28 Jan 2020

In the absence of the President, Activities Manager Frank Krizan KR1ZAN called the meeting to order at 1735.

The following were present at the meeting:

Dennis Cobb	WA8ZBT
Mark Dempsy	N5MD
Bill Fell	KK5PB
John Galvin	N5TIM
Bob Jones	W5BJ
Bob Kirby	K3NT
Frank Krizan	KR1ZAN
John McFadden	K5TIP
Daryl Morgeson	AF5QJ
Mike Schmit	WA9WCC
Jim Skinner	WB0UNI
Jim Stafford	W5DTG
Bill Swan	K5MWC
Rohan Thomas	KG5RCN
Kerry Weeks	K5WKS
Mark Wells	K9MDI
Joe Wolf	N5UIC

Officer and Committee Reports:

The monthly Secretary's Report is contained in this newsletter. The Treasurer's Report was presented to the membership. There being no exceptions, the Treasurer's Report was accepted for audit.

The President's Message was included in the January newsletter.

Frank Krizan KR1ZAN presented the Activity Manager's Report; this is included below:

1. The February program will be presented by Dick Sander, K5QY, on the subject of Low Noise Receiving Antennas.
2. Several forms of discussion forums have been considered for use by CARC members. Based on inputs from the 2019 mid-year interest survey and the Member Interest Survey conducted at the Annual Meeting in November, email was the preferred method of communication. After evaluation and considering the desire for simplicity in use and maintenance, a discussion group will be established on

the GROUPS.IO system. Information on joining the group will be sent out as a special email.

3. In an effort to get the Membership Database under control, CARC plans to make use of Ham Club Online. As the database is being established, members will receive various announcements and requests for confirmation of information in order to make the Database as accurate and useable as possible. This effort is being handled jointly by Bill Swan K5MWC and Frank Krizan.

4. Field Day planning will begin in February. Inputs were invited from members on their preferences for CARC participation. Some thoughts are: 1) operate from the Club Station; 2) operate in "the field"; 3) participate as a Club offering a coordinated FD station with another club in the area. Frank asked for comments from members; send these to him at kr1zan@arrl.net).

Bill Swan presented the Membership Committee Report. He stated that we have 32 members, most of which are retirees. There are a few members that we need to contact in order to confirm payment of dues and contact information.

Old Business

At the November 2019 meeting, a motion was approved authorizing the completion of a revised Constitution (Revision D, Draft 3), which was emailed to all members on 3 January 2020. This formed the basis for discussion at the meeting.

Frank summarized changes in the circulated draft and moved to accept this draft as amended at this meeting. The motion was seconded by Kerry Weeks K5WKS and tabled pending discussion of proposed amendments.

A total of six amendments submitted by members since distribution of the draft were considered, as summarized below:

1. Motion to Amend: In Article I - Name, Residence, Section 3 - Residence, strike the words "for transacting of business" resulting in this sentence now reading "The principal office for transacting of business of the CARC shall be located within the Company's facility in Richardson, Texas." The Motion was made by Frank Krizan and seconded by Kerry Weeks. The Motion was approved without discussion.
2. Motion to Amend: In Article VI - Officers and Board of Directors, Section 4 (last sentence), delete the sentence "Any action of the Board of Directors may be voted down by a majority vote of a quorum." The Motion was made by Frank Krizan and seconded by Kerry Weeks. After considerable discussion, the Motion was rejected by the membership.
3. Motion to Amend: In Article VII - Duties of Officers, Sections 1, 2, 3, 4, and 5, the first sentence of each Section, reading "His duties shall be to:", is reworded to read "Duties

shall be to:” The Motion was made by Frank Krizan and seconded by Kerry Weeks. The Motion was approved by the membership.

4. Motion to Amend: In Article V - Membership, Section 1, the last sentence shall be reworded to read “Anyone meeting the requirements of Section 3 below will be admitted to membership in the CARC upon submission of a properly completed CARC application form and payment of applicable dues” by adding the words “and payment of applicable dues”. The Motion was made by Frank Krizan and seconded by Kerry Weeks. The Motion was approved by the membership.

5. Motion to Amend: In Article VIII - Dues, delete the last sentence which reads “Non-payment of such dues shall be cause for expulsion or suspension from the CARC at the discretion of the membership” since this is in conflict with Board duties. The Motion was made by Frank Krizan and seconded by Kerry Weeks. The Motion was approved by the membership.

6. Motion to Amend: In Article VI - Officers and Board of Directors, Section 2 - Term, Election and Qualifications, shall have the second sentence reworded to read “Officers must be voting members per Article V, Section 3 (1), in good standing.” by changing “full members” to read “voting members”. The Motion was made by Bill Fell and seconded by Kerry Weeks. The Motion was approved by the membership.

There being no further amendments or discussion, the Question was Called, and the revised Constitution as amended in the meeting was approved by the membership. Thus Revision D, Draft 3, as distributed and further modified by amendments 1, 3, 4, 5 and 6 above will be published as the new Constitution of the CARC.

New Business

Bob Kirby K3NT moved to authorize selection and replacement of a defective VHF/UHF radio in the Club Station used as a monitoring station at a cost not to exceed \$600.00. The Motion was seconded by Kerry Weeks and approved by the membership. Implementation will be handled by Bob Kirby and Dennis Cobb WA8ZBT.

Bob also reported that all the Club Station computers have been upgraded to Windows 10 and that the Packet BBS has been updated and is operational. There are plans to perform an upgrade on the PBBS hardware using previously-approved funding.

Joe Wolf N5UIC contributed several announcements including details about Hamvention and Tanner Electronics.

Frank Krizan announced that elections for the 2020 Officers would be held at the 25 February 2020 meeting. The Board has solicited candidates for all elected positions and will

take further nominations from the floor at the February meeting. The slate proposed by the Board includes:

- President: Frank Krizan, KR1ZAN
- Vice-President: Bill Swan K5MWC
- Secretary: Jim Brown AF5MA
- Treasurer: Rohan Thomas KG5RCN
- Activities Manager: Kerry Weeks K5WKS

The meeting was adjourned at 1840, followed by the program of the evening, “Show and Tell”.

2020 ARRL January VHF Contest

(Continued from page 1) First, thanks must go out to Randy N0LD for adding organization and coordination dynamics, support, and details to the 2020 trip. Randy added an additional four squares farther south.

I was glad to see Nick KB0YHT who had moved to Wichita KS and it was special to work him in Tulsa where we had tried to activate squares late in a previous contest. We even squeezed in a sit-down eyeball QSO (see the picture). Nick, who encouraged me to start roving had to move away or be in another rover, but at least he was now introducing others to the sport.



Our second four square, our plan start for our January 2019 trip, left us with a few stories we will remember—like around a lake on some tight tree lined back roads in the dark (I recall thinking are we being followed by that truck? Is that a Sasquatch? And I was glad to be finally moving North up Hwy 75 back toward Sherman TX.

Maybe it’s the engineer in me but some of the highlights in the January 2020 VHF contest include eye-ball QSOs with other rovers that were making their own treks. On a sunny Sunday morning in South East Oklahoma we contacted K5ND/R (run solo by Jim-K5ND, how do they do it?). Here is a tip: learn more about his rover and operation from his blog. I was glad to meet him and see it.

While Jim had contact with low hanging tree limbs, we believe Randy and Harvey may have hand trimmed them later (we need to bring extra tools next time to clear the way for others). At one stop I saw Jim climb up on top of the SUV to adjust his 6M Moxon at the top of his antenna stack (see pictures). I don't think my new 2016 Expedition would want me up on top so I added a small ladder to my equipment list this year. It was used on Friday night during the equipment debug/shake down and antenna mast refinement.



It's hard to believe that things all came together on the K5SRT/R rover for Jan 2020. A week before the contest the rover still had no radio or antenna equipment installed, and power was only partially in place. But ideas were developed and implemented during the 2019 holidays and equipment racks built from items off my prior rover. Holes got drilled, and wood table and mast put together in the cold rain before heading to North Texas with frost instead of ice. Several ordered items didn't arrive in time for use but the hitch mount did. So, we had to remain flexible and develop work

arounds—it was almost a winter rover field day exercise of sorts. Things can come together when you are really motivated. There is always room for future improvements.

Wow, what a fantastic setup and fun finish K2EZ/R (run solo by Andrea-K2EZ) had operating with unique software-aided tools and customized switches and transverter system. Since my smart phone/camera was back on the charger, at least someone got pictures (sure didn't want to miss seeing the show-and-tell). Although it was late in the trip, I had earlier in the evening taken a selfie of Ross K5SRT, Andrea K2EZ, and Randy N0LD when we first met as she pulled into the Tulsa area near us. I would say for late in the contest, Andrea pulled off some of the most time-efficient contacts and four-square dances with our rover as the January 2020 VHF contest drew to a rapid close.



Reminds me once again that a rover (from single operator to unlimited) must remain flexible and keep improving setup and capabilities. You have to ask yourself: Did I check all those connections (I know we took pictures of an LMR-400 connector issue we had to resolve Friday night when ours got to bed early), can we make it work better, will it travel and hold together on back roads or at highway speeds in various weather conditions? Don't forget to ask how you can help others as well.



Finally I'm thankful for contacts on the road both in North Texas and Oklahoma, and while I can't remember them all (we have them logged), I do recall the Collins Amateur Radio Club operating their first VHF contest using a new call sign, N5CXX, out of Richardson, TX. The prior W5ROK club was where I got my first ham ticket before relocating to Oklahoma. N5CXX, stay in touch, and I'll continue to watch for your Signals newsletter, one of the best newsletters out there.

There were lots of lessons learned, pictures taken, and more will be added as time allows. Be sure to see more from the trip on OKRovers.info. I'm glad we had the signs on the rover for those who questioned who we were or what we were doing at times. I know a few cows looked as well. Tip: You can also see more tips under Amateur Radio or VHF Rovers on Facebook. I hope you will share what you learned, stories and pictures, as well as asking questions you have. There are some smart people who will help you learn what might seem obvious later. You become smarter being around smart people. A key rule is to have fun and give back to or help others when you can.

Another reason the trip was special was we had planned to start near Greenville, TX the year before. That 2019 plan was for three rovers KG9DUK/R (Alex KG9DUK, & Nick KBOYHU), N0LD/R (N0LD, W0HGJ & Marcus N5ZY) and K5SRT/R (K5SRT and K3NT, (long term friend and mentor) but ice storms during the days before the trip started ended the trip to Texas before we started.

I had planned to pull out in Jan 2019 on a backup circle trip in Oklahoma as my navigator/digital operator Bob K3NT was stuck in Texas with ice between here and there (not a good combo). My laptop setup was acting up as well and the backup computer was in Texas with Bob. The red F150 K5SRT/R used for that trip turned out to be its last as high miles and faulty AC eliminated its use in the summer months. While I was finally ready a weekend in advance after a long weekend in Kingston, OK (site approximately between Oklahoma City and Dallas) the ice storm showed up.

The morning of the January 2019 contest, while drinking coffee and looking into the frozen laptop, I received an urgent call from Nick KB0YHT that antennas had been blown off Alex's, KG9DUK/R, rover while enroute on the highway to Nick's. Could I come help? I threw things in my rover and we operated it as KG9DUK/R in Jan 2019, pulling together our pool of equipment enroute to the cotton bale start (picture I recall from near the start), so Alex would still get to go under his call sign. So now you know the rest of the story—rovers and friends working together make for great times and memories.

Thanks to all the OK Rovers for all your help in January 2020. I couldn't have done it without your organizational skills, encouragement, support, and radio (thanks Harvey)

/antenna/adapters/advice (thanks Bob, Randy, and Alex) at times. Just goes to show that if budgets are tight (on a new rover) and you have helped enough others then they will be there to help you in return.

Happy New Year and glad to have the January 2020 VHF Logs in the book! Let me know if I can help,

(Contributed by K5SRT- Sidney Ross Terry)

ARRL NTX Section Newsletter

Events This Month and Early March

I will be traveling to the Wichita ARC meeting (February 20th) and the West Fork ARC meeting in Bridgeport the following Saturday (February 27th).

New!!!

February 29th Hella Hams Sidewalk Sale at the Hella Shrine in Garland Texas. More info on this event below.

March 7th is the Irving Ham Fest. This is one of the best Flea Market style events in North Texas

March 13/14th is the Belton Ham Fest. There is always a big turnout and lots of used gear for sale.

ARRL Awards:

We should have many of our fellow North Texas ARRL members getting nominated for awards that are provided by the League each and every year; details may be found on the ARRL website with a simple search string "Nominations Solicited for 6 ARRL Awards." It would be great if clubs in our section would each form a nomination committee to get selected amateurs from their club or community nominated for these awards. I know folks this kind of stuff takes time, but if we don't nominate someone, none of us will get recognition that we all deserve. Pay it forward, and one day you may get an award. As of today, I have forwarded two nominations for awards to our Division Director.

Mentor Fest

Mentor Fest this year will be held on the third Saturday of April, April 18th. This is an all-day event that you should plan on attending. If you're a Mentor and you do presentations, I really would like to have a conversation with you Now!!! Telephone 318-470-9806 Email [ARRL NTX Section Newsletter.docx](mailto:ARRLNTX@arrl.org). You may also signup at ARRLNTX.org.

New... Hella Ham's Flea Market/Sidewalk Sale

Starting February 29, 2020 at the Hella Shrine in Garland. This will be an ongoing event each month of the year that has a 5th Saturday. Just like February 2020 has a 5th Saturday on the 29th. Shriner Clowns that are Ham Radio Ops, hosting a sidewalk sale - what could be more fun!!!

73, Steve, KG5VK

ARRL NTX Section Manager: Steven Lott Smith, KG5VK

kg5vk@arrl.org.



Sporadic SIGNALS

*captured by Frank
KR1ZAN*

It is with great sadness that I must begin with the news that Pamela Kay Swan, wife of Bill Swan, K5MWC, passed away Feb 2. A memorial service for Pam will be held Friday, February 28,

2020, 11:00 a.m. at Messiah Lutheran Church, 1801 W Plano Pkwy, Plano, TX 75075.

FLASH ANNOUNCEMENT: The Garland Amateur Radio Club will be hosting the ARRL West Gulf Division Director, John Stratton, N5AUS, and the West Gulf Division Vice-Director, Lee Cooper, W5LHC, at their monthly meeting, Monday, February 24th, 7:30 p.m., in the Garland Women's Activity Building at 713 Austin Street, at Glenbrook, just west of the Garland Public Library. Doors open at 7 p.m. ARRL members will be especially interested in this program.

From the Austin ARC SwapNet Newsletter of Jan 27, 2020, Glen, WB4KTF, writes: "An educational article on those ever-present end-feds and many more great antennas plus analysis, is available at: https://www.nonstopsystems.com/radio/frank_radio_antenna_multiband_end-fed.htm."

Robert Bankston, KE4AL, has proposed the amsatLink Project, a three-phased program to ultimately establish a constellation of nanosatellites, linked in a peer-to-peer voice communications network for amateur satellite service. As a wireless ad hoc network, future satellites can be added to the network and ground stations, moving in and out of a nanosatellite node's footprint, can easily join and exit the network.

The proposal is to create an IEEE 802.11 wireless ad hoc network, operating within the FCC Part 97 amateur radio frequency allocation of the 2.4 GHz microwave band. Individual satellite and ground nodes would connect directly, dynamically, and non-hierarchically to as many other nodes as possible and cooperate with one another to create one virtual network that can efficiently route data from/to clients.

While the idea of cross-link communication between satellites is not new, amsatLink hopes to continue the efforts of NASA's PhoneSat, EDSN constellation, and NODES missions, by expanding the network to include ground-based nodes, demonstrating the use of voice over internet protocol communications, and organizing nodes into clusters, where each cluster consists of one nanosatellite node and any visible ground nodes.

amsatLink will continue NASA's design philosophy by utilizing commercial-off-the-shelf hardware and keeping the de-

sign and mission objectives as simple as possible. Estimated total hardware cost per satellite is less than \$5,000. Proposed ground stations will also use-off-the shelf equipment with a total estimated cost of less than \$150.

For more details, see <https://ke4al.github.io/amsatLink/> Robert seeks further discussion of this proposal among AMSAT members. Thanks to AMSAT News Service for this info.

If you haven't noticed of late, WWV has reserved the voice announcement on the 10 minute mark (50 minute mark for WWVH-Hawaii), for announcements related to MARS (Military Auxiliary Radio Service) operations and joint exercises. More info at: www.dodmars.org.

Well, the Collin and Dallas County SKYWARN Schools are now behind us. Both were well attended with exceptional presentations. If you haven't been to a SKYWARN School in a while, I encourage you to do so. Check out the remaining list of SKYWARN Schools in North Texas at <https://www.weather.gov/fwd/skywarnsch?sptrsch>. Also, at <https://www.weather.gov/fwd/skywarn-resources> there's lots of helpful info, including a video of the 2019 Basic Storm Spotter Course, which is handy for review or in case you can't make any of the Schools. HamCom (www.hamcom.org) presentations are getting filled up and the 2020 schedule shows a SKYWARN School on Saturday, June 13, 3 to 5 p.m.

From the Feb. 16, 2020 AMSAT News Bulletin: "The DX Engineering blog On All Bands recently published an article entitled '5 Tips on Etiquette and Good Manners on the FM Ham Radio Satellites' by Sean Kutzko, KX9X. The article can be found at: <https://www.onallbands.com/ham-radio-satellite-operating-etiquette/> " Good reading for those of you planning to work the LEO FM sats.

And, for those of you considering joining or renewing membership in AMSAT, you can get a free digital copy of "Getting Started with Amateur Satellites" along with another membership gift, depending on the level of dues. For more info see <https://www.amsat.org/ans-047-amsat-news-service-weekly-bulletins-for-february-16th/> and scroll down to see article on Free Digital Copy.

I hope you've been enjoying the recent articles by Steve Phillips, K6JT, on the Collins ARC Packet Bulletin Board System, and, that you'll give this capability a try in 2020. I've heard from several folks in Garland RACES that they've been experimenting with use of our PBBS. We are centrally located to provide a convenient digital messaging resource for emergency communications, both within a city (such as Garland) and inter-city (i.e., Garland, Richardson, Sachse, Wylie, Plano).

73, Frank KR1ZAN

CARC Show & Tell Night



The program at the January 28, 2020, meeting of CARC was Show & Tell Night. Four of our members presented items of interest to hams. For those who missed the meeting, here's the handout which includes URLs and references to further information.

Slingshot Antenna Launcher, Frank Krizan, KR1ZAN

HYPER-EZ HANG KIT with Tennis Ball or 1 Ounce Weight plus 3 Weights & Clips. Available from various sources, but, definitely Ham Radio Outlet and DX Engineering. (\$80, \$100, \$105 with varying weights and lines) <https://www.ezhang.com/ez-hang-models/>.

Slot-Cube VHF Antennas as described in QST (Jan 2019-2 meters, Dec 2019-6 meters), Kerry Weeks, K5WKS

High performance from a small package with this low-profile antenna made from copper pipe. 2 meter version is 10" x 10" x 7" and constructed from 1/2 inch copper pipe.

New Sound Card Interface, John Galvin, N5TIM

This device, the RA-25K, is beta test hardware that does a translation of audio tones to a USB serial stream. It is used mainly in amateur radio for VHF/UHF Digital communications with sound card software. Current key use is with Winlink and with its embedded PTT works well with the high speed VARA-FM protocol. I have been using it to communicate with the Collins club's Packet station. <http://www.masterscommunications.com/products/radio-adapter/ra25.html>.



Homebrew Keyer, Jim Stafford, W5DTG

I have built from individual components and successfully used an "Accu-Keyer" from the 1974 Amateur Radio Handbook. It uses 7 TTL ICs, four transistors, a built in power supply, and a speaker. All components were from my junk-box and cost me nothing. I used point to point wiring. Copies of the schematic were offered at the meeting.

Low Earth Orbit Satellite Antenna, Frank Krizan, KR1ZAN

Arrow, Cheap Yagi & Cheap LEO Yagi

Arrow Antennas (arrowantennas.com)- Hand held Yagi beams (single and dual band versions)-\$80 to \$210 (\$160 for 2M/70cm split boom w/duplexer)

Cheap Yagis, Kent Britain, WA5VJB <http://www.wa5vjb.com/yagi-pdf/cheapyagi.pdf>.

Cheap LEO Antennas, Kent Britain, WA5VJB <http://www.wa5vjb.com/references/Cheap%20Antennas-LEOs.pdf>.

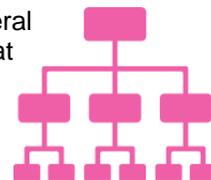
Membership Database Migration

The Collins ARC Membership Database is now under the direction of Bill Swan, K5MWC. In an effort to establish a database which officers and members can access online and which has the potential of staying continuously up-to-date, CARC is migrating membership data onto Ham Club Online (HCOL).

If you are a member of another local ham radio club, you may already have been seeing similar migration. The Richardson Wireless Klub and the Plano Amateur Radio Klub are two that have already converted. Several others are in the process of doing so.

HCOL has a couple of requirements that may affect a few of our members. The first is that a unique email address is required for registration. If you are a member of a club (i.e., RWK or PARK) that already uses HCOL, you should register using the same email address you use for those clubs. And, now the big one: your official mailing address for any U.S. Mail is the mailing address on file with the FCC.

We have noted in our records that several members show mailing addresses that are different from their FCC address. This may be because in the past employees preferred to receive mailings via Company mail. Virtually all our correspondence is now via email and very little through the postal system. So, for those with differing mailing addresses, we'll be contacting you to discuss.



As we add members to the Ham Club Online database, we'll be contacting you via email to confirm your email address and notify you of messages you will be receiving from HCOL. Anytime changes are made to your membership records, you are notified. It is not necessary for you to set up an account with HCOL; however, if you have done this with another club (i.e., RWK or PARK), the same logon for HCOL will now give you access to CARC. This gives you the option to maintain your phone numbers and certain other records.

It is also hoped that in the future we can allow dues payments via PayPal — but for now it's still cash or check.

Ham Club Online will, also, allow us to communicate announcements of Club activities, meetings, newsletter releases, etc. to all our members by sending individual emails to every member and avoid the problem of bulk addresses in the TO or BCC being rejected by some email services.

Please be patient with us as we move to HCOL. We will try to minimize the number of emails sent to you. And, we welcome your comments, suggestions and criticisms.

— Bill Swan, K5MWC, k5mwc@arrrl.net.

— Frank Krizan, KR1ZAN, kr1zan@arrrl.net.

Using Packet Radio Part 3 – Winlink

By Steve, K6JT

The first 2 installments of this series dealt with getting on packet, using the N5CXX (and other) BBS stations, and using Nodes to extend your geographic reach. This one deals with using the Winlink 2000 system.

This system has been in operation, as the name implies, since around the year 2000. Older versions of Winlink also exist. Basically, it consists of a collection of Mailbox station nodes (originally termed PMBOs) that are now called Remote Message Servers (RMS). These are all interconnected via the Internet, running special software that allows messages to be routed anywhere in the system to and from any node, via Central Message Servers (CMS) located at several locations around the world and synchronized with each other. This article will not deal with the details of the Winlink system; rather, it is an introduction to how to use the system here in the Collin County / North Dallas County area. For more information, and to register to use the Winlink system, go to <http://www.winlink.org/>. See the “Book of Knowledge” menu from the Winlink main page for instructions.

There are both HF and VHF RMSs, so Winlink can be reached from nearly anywhere in the world (via HF RMSs around the world). This article will deal only with VHF access using the K5PRK-10 packet RMS (145.090), run by the Plano Amateur Radio Klub for the Collin County ARES and the WG5EOC RMS (144.930), run by Garland RACES. I can connect with either of these stations from my home. There used to be other interconnected VHF nodes, but they have all ceased operation as of this writing. Lists of both VHF and HF nodes in operation can be found via the Winlink website.

It is possible to use the packet RMSs using only a “dumb terminal” program on the computer, the same as you would use for the N5CXX BBS. However, the interface is clumsy and limited in what you can do. The following shows a sample session with K5PRK-10, entering an “h” command for help:

```
c k5prk-10
```

```
cmd:*** CONNECTED to K5PRK-10
```

```
Plano Amateur Radio Klub, K5PRK-10 145.090 MHz, Winlink Allen, TX
```

```
[WL2K-5.0-B2FWIHJM$]
```

```
PQ: 98498924
```

```
CMS via K5PRK >
```

```
i
```

```
Login [743]:
```

```
CMS via K5PRK >
```

```
i
```

```
Invalid login challenge response -- 2 attempts remaining (H for Help)
```

```
H
```

```
Winlink is designed for automatic message transfer using Airmail, Paclink, Winlink Express or other client programs that support the B2F protocol.
```

```
It will also accept limited keyboard commands.
```

```
Your use of this system is acceptance of the risk associated with sending portions of your password as part of the logon process.
```

```
Supported Telnet/VHF keyboard commands:
```

```
H or HELP gives you this file
```

```
LOGIN -
```

```
Send any command to initiate login. The CMS will respond with a challenge consisting of three digits who's values represent positions of characters within your password. See <RESP>.
```

```
<RESP> - This is a six character response to the login challenge. Respond with three password characters corresponding to the positions in the challenge plus three additional characters of your choosing (in any order).
```

```
Example: Password is AbC123. Login challenge is: 425. You send '1b2Qz5'.
```

```
AbZ21t would also be valid since it contains the characters 1, b, and 2 which correspond to the 4th, 2nd, and 5th character in your password.
```

```
LM - Lists all traffic pending for your callsign account.
```

```
Shows message ID (MID), date, size, from and subject.
```

```
K <MID> - Example: K 1234_KN6KB Marks the pending message as delivered.
```

```
KM - Mark all messages as delivered.
```

```
B, BYE - Forces a disconnect of the link.
```

```
R <MID> - Example: R 1234_KN6KB Read the specified message.
```

```
Only MIDs addressed to your call or originated by you may be read.
```

```
Attachments are not supported.
```

```
RM - Read all pending unread messages to your callsign.
```

```
SP <Destination(s)> - Send a message to the destination(s) indicated.
```

Destinations may be a radio callsign or "SMTP:<email_address>"

(NOTE! be sure to include the colon after the SMTP!)

Multiple destinations should be separated by ";" or ","

Example: SP
W4ABC;SMTP:Johndoe@aol.com;W1AW;SMTP:sam@ia
m.us

You will be prompted for a subject of the new message and then prompted for the message body.

For the message body enter any text. End with /EX on a separate line.

Acceptance of the message will be confirmed. You will be sent a service message if the message cannot be delivered.

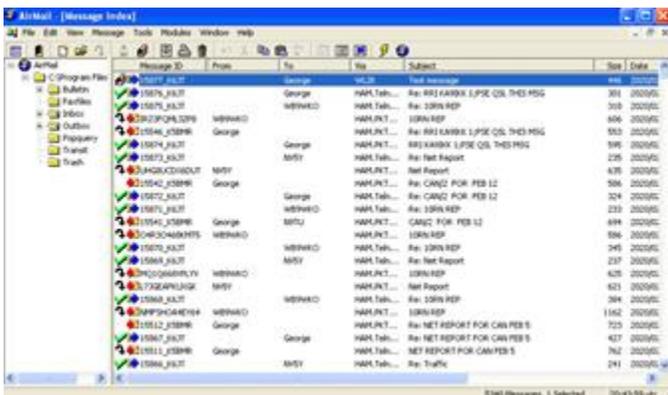
CMS via K5PRK >

Bye

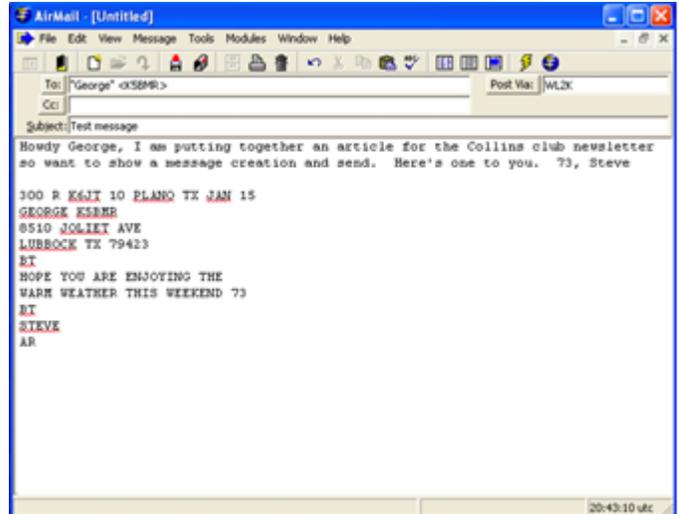
Disconnecting...

*** DISCONNECTED

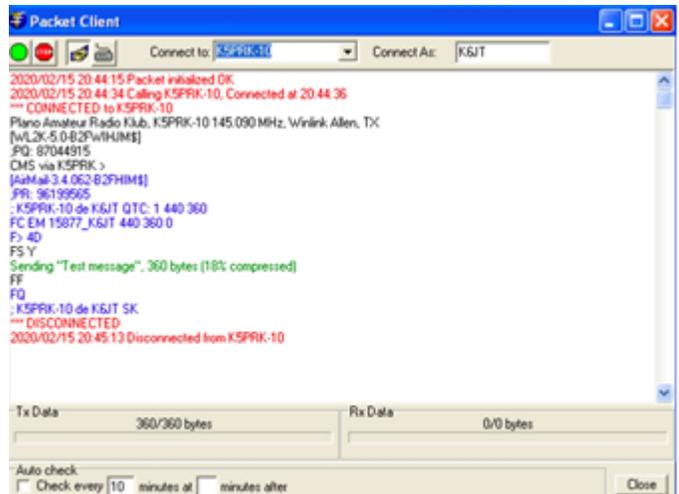
There you go – they did all the work for me in telling you about how to use the system using only a simple interface. But the best method of using the system is with the AirMail program, mentioned in the Info given here. That is what I use. An alternative is PacLink, but I have never investigated it. The Winlink Express program is available from the Winlink website and is a viable alternative although I do not like its interface as much. It MUST be used for HF if you are using a sound card and one of the supported waveforms in lieu of a real Pactor modem. Also, Windows 7 is the minimum supported OS (no XP). The AirMail main interface is shown in the following picture:



Looks a lot like Outlook Express or other E-Mail programs, doesn't it? In fact, you create messages very much like using the Internet. The following picture shows a message that I created earlier (it is number 15877 in the message index above):



Once a message is created and "send" is clicked, access the "Modules" menu item for the "Packet Client". That brings up a window like the one shown next where I actually sent the message shown at the top of the previous message list:



This shows a connection to K5PRK-10, followed by some system info and then the actual message transfer. AirMail compresses messages for transmission, so if you see them being sent by someone while using an ASCII terminal program, they have lots of strange looking control characters in them.

Setting up AirMail does take a bit of learning and work, but the directions in the user manual and built-in help make it tolerable. You essentially have to enter your callsign and the type of TNC you are using, along with the RMSs you want to connect with. The program "knows" about most Kantronics TNCs, and there is support for the MFJ and AEA TNCs that are no longer made as well as some very expensive Pactor units. The program can handle both Packet and

Pactor protocols and automatically sets up the TNC, assuming it is supported, so all you do is start it up.

That's all there is to it. With a bit of research, software downloading, and configuration, you too can be part of the action using Winlink 2000. Note that E-Mail can be sent to and from Internet addresses (such as STEVE@K6JT.COM), so it is very useful. Send me a Winlink message when you get all set up – just use K6JT as the address.

References:

For Airmail Program <http://siriuscyber.net/airmail/>

For more information about setting up Airmail and also the Radio Relay International Digital Traffic Network:

<http://radio-relay.org/wp-content/uploads/2017/03/RRI-Digital-Operations.pdf> (copy and paste to browser)

73, Steve

The Army Air Corps, Part 3

By Vic, W7VSE

At the air base we attended classes daily. The first day or so, all the operators had to copy code from a machine. When I came back the 2nd or 3rd day, the instructor told me that my code operating was OK and that I did not need to come back for any more code practice. I could goof off those hours. All of my work back at WYT practicing code had paid off again. I think the electronic (maintenance) and installation men got briefed on installing the equipment and maintaining it. Thank goodness, without them we operators would have been lost.

We were at Bolling Field for four months. We were issued additional clothing, a 30 caliber Army rifle, a bayonet, a belt full of bullets, a gas mask, a tin helmet, a canteen and other things that we would need in "Foreign Tropical Duty." We still did not know where we were going. We also got many inoculations. We were issued a passport later and it had visas for many countries. And all 60 of us were given a promotion to the next higher grade. I became a Staff Sergeant (Three stripes up and one loop underneath). I was now in the "first three grader" group. Staff, Technical and Master Sergeants, and had only been in the Air Corps for 15 months.

Then one day, our briefing came to an end, and we were transported back to the Railroad Station by army trucks. We were in full uniforms, wearing tin hats, and carrying our rifles, gas masks and bullet belts with our barrack bags bulging. I suppose we resembled a typical Army Infantry platoon on the move. All 60 of us boarded a Troop Train bound for Miami, Florida. The trip was uneventful and, as I remember we were on the rail for a day and a night, at least. It was an enjoyable trip seeing the East coast States during the daylight hours, and the train noise lulled us to sleep at

night. The chow was good and plenty of it. When we got to Miami, trucks picked us up and took us to a very nice place that used to be some kind of resort. The military had taken it over. There were coconut palms throughout the area, and nice cottages to stay in. Some of the coconuts we could reach out and touch from an upstairs veranda type porch. The food was good here also, and we stayed several days. There was a Honky-tonk Tavern nearby, on a canal. We found out we could get a big pitcher of beer for a quarter. There were civilians there and a jukebox and dancing. I would have been content to spend the rest of the war there. But soon we began leaving in groups of about 20 men with all their gear. This was in mid-September, 1942. I was in one of the first groups to go. We were trucked to the 26th Street Airport where we boarded a C-47 (Military DC-3) transport and departed the USA and flew south.

Our route took us over Mexico, Central America and we refueled at Trinidad and Tobago, and another place and then spent the night in Belem, Brazil. We were able to sample Brazilian beer. Didn't like it. Next morning got back on the C-47 and continued south, refueled some more and finally reached Natal, Brazil, late in the afternoon. Natal is the easternmost point of South America. Just before sundown we boarded a "China Clipper," Pan American Boeing 314, four-engine flying boat. It still had the Pan Am crew, but it was leased to the military.

When we left the dock we were taxiing in a river going out to the Atlantic Ocean. It was about an eighth of a mile to the mouth of the river. When we got to the ocean, the plane kept on going, I thought we were still taxiing, but then I realized we had full power on all four engines. Finally, we started to pick up a little speed and we were crashing into the oncoming waves for a while. Then the plane broke from the water, flew a short distance, then crashed into another wave and we were back in the water again, we finally got airborne. It was a long slow climb to our cruising altitude.

The Pan Am Crew treated us great. The meals were excellent. Most of us played "nickel-knock" poker almost all night. I played for several hours and got sleepy, so I went to the back of the plane, where they had some bunks, and went sound to sleep. I had thought it over about playing poker and decided I wouldn't do that any more. Sometime later I woke up to find myself suspended a few inches in the air above that bed, then, suddenly, I fell back down on it. It was frightening. I learned later, from one of the crew, that we had hit a down draft and descended rapidly for a few thousand feet. He said that often happened on that route.

I hadn't realized it when we took off, but evidently that aircraft had all the fuel it could possibly hold, because we flew all night, and fourteen hours later, after sunup the next day, we saw Africa ahead.

This was wartime, and there were no radio stations to "home" on, so they had to navigate by dead reckoning. I

think the pilot thought we were north of Fish Lake, our destination, and he turned and headed south and flew for about 10 minutes, then turned around and flew back north for about 20 minutes until we located Fish Lake. We landed and a motor launch came out and took us ashore. We had a good meal, then got on a truck and proceeded through the jungle for a few miles. There were many monkeys running and swinging in the trees along the road, screeching at the top of their lungs. They were probably objecting to our violating their territory.

When we got to the airstrip, a C-47 was waiting for us. That airstrip looked like they had hacked it out of the dense jungle, and it didn't look long enough to me. Sure enough, when we took off, we clipped some branches off of the trees on our way out. We refueled again at a similar short runway field, and then flew on to Cairo, Egypt where we spent the night. We saw the Sphinx and pyramids along the Nile.

From Cairo, we flew down the Arabian Peninsula and landed on a small island for fuel. I think it was Aden. The runway wasn't very long there either, and both the landing and takeoff were scary. They had brought the gasoline to the island on a barge in many five-gallon square tins. Those native workers had a ladder and about three of them would pass the 5-gallon tins up, one at a time, to the guy who poured the gas into the aircraft's wing tanks. It took quite a while to "fill her up."

Then we proceeded to Karachi, India (which is now in Pakistan.) The military had previously shipped several tons of our equipment over on a ship and it was docked in the harbor there. It took about two weeks of labor to unload and sort out that equipment for all the different radio stations and control towers. There were 20 Kilowatt gasoline A.C. power generators for each station, and a myriad of radio equipment, wire, metal towers, tools, etc, for each location. With the help of local Indian laborers, working for about two weeks, we got all the packages, boxes, steel antenna towers and crates sorted out and separated and labeled for shipping to the various Air Bases where they were to be installed. Then after a couple of days of doing nothing, there was a notice posted on the bulletin board that we had to do other duties while we remained in Karachi. It listed them. There was KP (kitchen police) and guard duty and others. One of the listings was driving a garbage truck. That sounded like a job I could do, so I selected it and reported to the motor pool to get checked out on driving a truck.

The Sergeant got his clipboard and took me to an English truck that had a canvas top over the seat, and no doors. This was British India and they drove on the left hand side of the road. Of course, the driver sat on the right hand side of the vehicle. I started the truck and put it in its lowest gear and he told me to move it out. So I let in the clutch OK, and then tried to change gears with the stick shift to the next gear. And, from force of habit, after driving for years in the left seat, I reached over to my right to change gears. I

pawed empty air and almost fell out of the truck. The Sgt. laughed at me. Then I got through the gears and thought I was doing alright,, but when I looked up the road ahead of me, every oncoming car was in my lane. Oops! I moved over to the left side of the road. The Sgt got another laugh. When we got back to the motor pool, I thought I had flunked the driving test, but the Sgt. passed me. He said almost everyone made the same mistakes that I did. I spent the next week or so driving to and from the garbage dump with some Indian laborers doing the manual labor. It was easy finding the dump, because there were hundreds, maybe thousands, of birds circling like a huge whirlwind above the dump waiting for us to bring more food.

But all good things must come to an end. One day I got my orders to proceed to Kunming, Yunnan Province, China. I boarded an Indian train and rode a day and a night to Lahore, India. The Indian trains are different from ours. You get in a railroad car, and after the train starts moving you are stuck in that car until the train stops again. They don't have isles through the train like we do. Some of the natives ride on the outside of the train and go from car to car when they want to, but I didn't try that. When we reached Lahore, India, a truck transported us to the airport and we boarded another C-47. We then flew to Agra, India and stayed overnight. I saw the Taj Mahal. It was beautiful. Then we flew on to Chabua Army Air Base in the Assam Province of India. On this leg of our journey, the C-47 Crew Chief pointed out Mount Everest, highest mountain in the world.

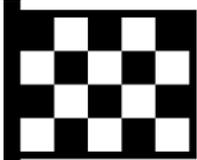
We were now in a war zone and very close to the "hump" over the Himalayas. There were no tower operators in the tower at Chabua, and, after we landed, nobody was around. There were a few bomb craters here and there. We soon realized that we were in a war zone, and there had just been an air raid, and everyone had abandoned the Air Base. Soon the GIs all came back and things were normal. We stayed overnight in Chabua, and early next morning, we departed to fly over the "hump" to Kunming, in Yunnan Province, China.

Later there were 5 Air Bases in the Assam Province: Chabua, Jorhat, Tezpur, Mohanberi, and Dinjin. All 5 of them were used as departure and arrival bases for aircraft flying the Hump and carrying troops and supplies in and out of China. There was no other way to get in and out of China at that time.

We didn't realize it at the time we flew the hump that aircraft were being shot down, almost every day, on that route. In fact, there were a lot of things about the war that we were not aware of, and would learn, after we had been in China for a while.

(Contributed by Steve Phillips K6JT)

Join the CARC groups.io Discussion Group



The Collins Amateur Radio Club (when it was RCARC) participated in several different discussion groups over the years. Some of you may remember the old Telecom Corridor Yahoo Group. There were email reflectors that ran on Sun Workstations, other Yahoo groups and attempts at using social media (Twitter and FaceBook).

In our recent Member Interest Survey, the great majority of respondents indicated they would prefer to get club announcements via email. No one indicated an interest in social media. As a club, about the only time we have to communicate with all our members is at the monthly club meeting and via the club newsletter (SIGNALS).

But what can be done during the rest of the month? As an attempt to fill that gap, the club has established a discussion group for club members only using the groups.io platform. Groups.io has become the platform of choice for the majority of amateur radio clubs throughout the nation as Yahoo has significantly changed its usage policy.



We now have a discussion group known as "CARC". Joining is by invitation only. You may join and simply receive emails for all messages posted or, as a registered user of groups.io, log in and access

all archives and manage various settings for receiving your email.

Regardless, once you are registered to receive emails, you may post to the "reflector" to communicate with fellow club members. This will be helpful when you have a ham radio related question, want to buy or sell something, and let others know about an upcoming activity. It's a great way to share club and ham radio information.

We plan to promote the Group via our web site and will soon have a clickable link to sign up; but it's still up to you to register with groups.io if you want access to the archives, files, photos, etc. Since we know there are many who just don't want extra emails in their inbox, we have elected to require that those who wish to participate initiate the request. As a registered user of groups.io, you can log on and decide on receiving individual emails, daily digests, or casual reading of archives only. We hope you'll stick with individual emails so you can stay on top of club activities and discussions.

To get started, decide on the email address you wish to use for CARC at groups.io messages - both for receiving and sending. If you send a message using another email address, it will be rejected and you will have to log on to groups.io and post it via the web.

Next, send an email to kr1zan@arri.net with a Subject of "Subscribe to CARC Group" and include your email address in the body of the email, along with your name and call sign. Once your membership has been verified, you will receive an invitation email for which you simply REPLY, and, you're now part of the Group.

Once you're a member of the CARC Group, you may send emails to CARC@groups.io. Attachments are allowed, but PLEASE don't go overboard. We have chosen the free subscription to Groups and when we reach a limit (very large) old attachments are systematically removed. The real purpose of our Discussion Group is to allow timely announcements and club conversations via email.

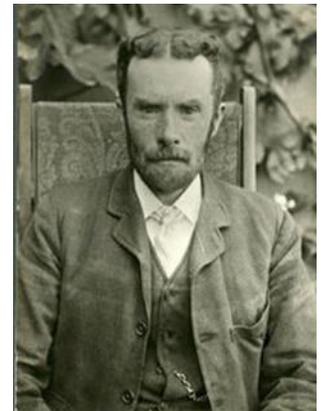
If you have questions, send them to kr1zan@groups.io. Remember, you can't start posting to the discussion group until you've become a member of the group. Just follow the instructions above.

Dead Electrical Dudes 22 and 23 Kennelly-Heaviside Combo Special!

Presented for Your Kind Consideration by Philip A. Neidlinger, PE, KA4KOE



Arthur Kennelly Honorary ZZ Top Band Member Entered Mortal Coil: 17 December 1861 Assumed Room Temperature: 18 June 1939



Oliver Heaviside AKA "Wolverine" Entered Mortal Coil: 18 May 1850 Assumed Room Temperature: 3 February 1925

Well, my fellow amateur radio operators, friends, and vicious enemies, I'm back out of hiding. The seething outrage following my Dead Electrical Dudes 20 and 21 Yagi-Uda Combo Special exploded in fine 1883 Krakatoa style. The backlash drove me into fearful seclusion. I cannot verify rumors that a [reward](#) was issued by THE POWERS THAT BE for my lifeless carcass. Anyway, I survived. For reference, here is a print of the catastrophic Krakatoa eruption...



Does the average radio enthusiast realize that the theories of Messrs. Kennelly and Heaviside established a foundation for worldwide HF (and below) communications today? My first guess would be "no". We concern ourselves with solar fluxes, A- and K-Indices, sunspot numbers, solar wind velocities, and geomagnetic storms as they pertain to talking, via the ham radio bands, with

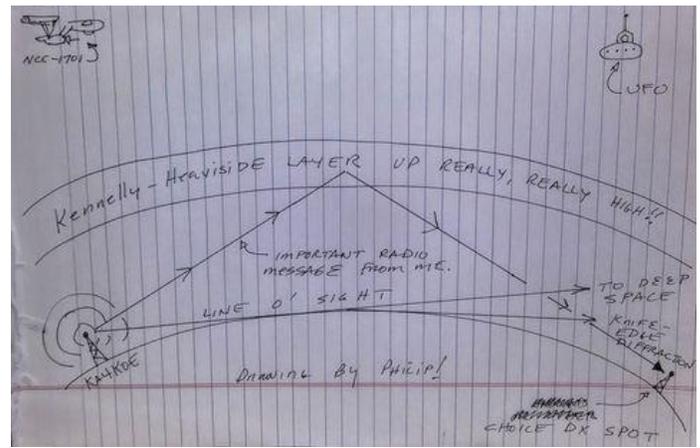
Cousin Bubba-Joe, who is located a few states over and deep down in the heart of inbred land. Finally, let's not forget how much time your significant other will graciously allocate for radio "play time" before disciplinary rolling pin deployment; no need to even turn the sucker on if the bands are deader than the aforementioned Dudes...er...anyway, I digress.

A lot of head scratching was going on after the first successful radio tests by Marconi and others. The signals were often received beyond "line of sight" even considering knife-edge diffraction and atmospheric effects. The ranges observed were far in excess of the calculations. So, what other unexplained mechanism was at work?

As is often the case in the scientific community, different researchers postulate explanations for observed natural phenomena at approximately the same time. Messrs. Kennelly and Heaviside were indeed figuratively scratching their heads more or less simultaneously over the radio signal range question. The scientific community at large was loathe to consider a reflective layer in the lower reaches of the so-called "ether" because the concept seemed to violate the laws of physics pertaining to the speed of light. Without getting into a whole mess of equations that I am incapable of understanding, much less explaining, the reflection hypothesis required that the waves exceed the speed of light while inside the layer versus the hard vacuum of dark, cold, inhospitable, alien-infested space. The issue was solved when it was later discovered that electromagnetic radiation had a "phase velocity" and a "group velocity". Again, don't ask me to explain this concept. Now, let's get back to our Dudes...

In 1902, Mr. Heaviside, who bears a striking resemblance to Marvel Comics' "Wolverine", was a self-made electrical engineer, physicist, ginger, and mathematician. He theorized that an ionized layer of gas existed high above the Earth that served to reflect radio waves back to the ground. In that same year, Kennelly also predicted that a layer existed. Something was indeed afoot as Marconi successfully

received signals transmitted from England while at Newfoundland. The theoretical zone of ionized atoms above the Earth was subsequently referred to as the Kennelly-Heaviside Layer. The glory, unfortunately, would ultimately go to British scientist Edward V. Appleton, who experimentally proved the layer's existence in 1923. In 1947, Appleton received the Nobel [Prize](#) in Physics for his work. The rarefied area is now known as the E-Region. Additional layers were added as one wasn't good enough as the kiddies started playing around with stuff above MF. For illustrative purposes, note the following admittedly poor sketch below. I could have searched the [internet](#) for a suitable copyrighted image but got lazy and here is the regrettable result:



Kennelly-Heaviside Layer

What else did our pair accomplish in their lives other than make educated musings about invisible layers above Terra Firma? Both were heavily involved in the scientific communities of late Victorian Era society.

Wolverine attended a school for girls run by his mother in his early years. A bout of Scarlet [fever](#) had left him partially deaf. The young, red-headed Oliver dropped out of school at age 16 but continued studying on his own. Fortunately for Heaviside, his uncle, Charles Wheatstone (a bridge is named after him) sponsored the eclectic lad's studies in the German and Danish languages as well as mathematics, electricity, and telegraphy. Later, as an employed telegrapher, Heaviside became familiar with the problem of transmitting messages over long distances as the information would be distorted and weakened by the various reactances present in the hard-wired circuits. Wolverine analyzed the problem mathematically and devised a working solution, thereby making possible long distance telegraphy and telephony. Mr. Heaviside also advanced the concept of electrical reactance and made significant contributions in the area of advanced mathematical analysis. Unfortunately, due to his difficult early childhood and other factors, the scientist gradually lost his marbles, became a recluse and used boulders for furniture in his home. Yes....boulders. Now on to Mr. Kennelly.

Kennelly enjoyed a storied career and participated in the current wars between Edison and Westinghouse, vis-à-vis DC vs. AC. While on Edison's team, the boys dreamed up public demonstrations of AC's supposed greater danger by electrocuting dogs, thereby convincing officials that it should be used in that nifty new tool of the penal system; the electric chair. Kennelly also published papers on the use of complex numbers, impedance, and alternating current theory. The canine torturer later served on the professorial staffs at Harvard University and the Massachusetts Institute of Technology.

Both Dudes contributed more to their fields of study than is described herein. The curious and learned reader is encouraged to perform further independent [reading](#). Until next time, my friends, I remain

Respectfully Yours,
Philip A. Neidlinger, PE, KA4KOE

January CARC VE Team Report

by Frank Krizan. KR1ZAN

The January ARRL VE Test Session hosted by the CARC VE Team, on Tuesday, January 28, 2020, had two applicants.

Both candidates successfully passed their Technician exam. A total of three exam elements were administered. Earning their Technician licenses were: David KI5HZU and Ronald KI5HZV. Congratulations to both. By the time you read this, Ronald may have received the vanity call K5IDL.

VEs taking part in January were Kerry Weeks K5WKS, Daryl Morgeson AF5QJ, Mark Wells K9MDI, and Frank Krizan KR1ZAN.

Our next Test Session will take place on Tuesday, February 25, 2020, immediately following the regular CARC monthly membership meeting (about 7:30 p.m.). This test session will be 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, via email at weeks.kerry@gmail.com or by phone at (214) 478-3230.

New Amateur Extra Question Pool Released

From ARRL Headquarters
Newington CT January 28, 2020

The new Amateur Extra-class license examination question pool, effective from July 1, 2020, through June 30, 2024, has been released and is available at the National Conference of Volunteer Coordinators (NCVEC) website at <http://www.ncvec.org/>.

The 2020-2024 Extra-class pool incorporates significant changes compared to the current 2016-2020 question pool, which expires on June 30. The number of questions in the

pool was reduced from 712 to 622. The result was 239 modified questions, 49 new questions, and 139 questions removed due to changes in what was felt to be an abundance of outdated questions, while areas of new technology and subjects were added.

In addition, an effort was made to balance the difficulty level, removing or replacing some questions deemed too easy or too difficult compared to the rest of the pool. The 2020 pool has 10 diagrams, which have been renumbered because the new question pool has two fewer than the 2016 question pool.

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
MARCH	
7-8	International DX—Phone Objective: To encourage W/VE stations to expand knowledge of DX propagation on the HF and MF bands, improve operating skills, and improve station capability by creating a competition in which DX stations may only contact W/VE stations. W/VE amateurs: Work as many DX stations in as many DXCC entities as possible on the 160, 80, 40, 20, 15, and 10 meter bands. The event runs 48 hours, from 0000 UTC Saturday through 2359 UTC Sunday. Details at http://www.arrl.org/arrl-dx
APRIL	
19	Rookie Roundup—Phone Mission: To encourage newly-licensed operators (“Rookies”) to operate on the HF bands and experience competitive Amateur Radio operating. Experienced operators are encouraged to participate and help new operators – either on the air or in person. Objective: Rookies exchange information with as many other stations as possible on the 80, 40, 20, 15, and 10 meter HF bands. Rookie entrants are encouraged to read “ HF Contesting – Good Practices, Interpretations and Suggestions. ” The event runs from 1800 UTC through 2359 UTC. Details at http://www.arrl.org/rookie-roundup .



Richardson, Texas

Mail Station 461-290

Richardson, TX 75083-3807

TO:



Richardson, Texas

CLUB STATIONS
 (972) 705-1349

N5CXX REPEATER
 441.875 MHz +5 MHz Input
 131.8 Hz PL - RX and TX

N5CXX-1 PACKET BBS COL Node
 145.05 MHz

**N5CXX-N1, NRCXX-N2 & N5CXX-N3 HSMM-
 MESHNET Nodes 2.4 GHz**

Tuesday 25 February 2020
 1700 Social 1730 Meeting

**Methodist Richardson Medical Ctr
 At Bush/Renner/Shiloh Intersection**

Conference Room B in Hospital Building

NEXT SIGNALS INPUTS DEADLINE:
→→→ 13 March 2020 ←←←