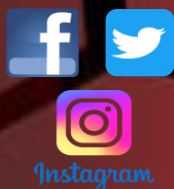


THE SIGNAL

Newsletter of the
Bella Vista Radio Club



VOL. 2, NO. 5 – AUGUST 2019

Monthly Meetings: 1st Thursdays @ 7 p.m., Highland Christian Church, 1500 Forest Hills Blvd, Bella Vista
Club Call: N5BVA • Repeater: 147.255 +offset, pl 162.2 • Website: www.bellavistaradioclub.org

WEEKLY NETS:

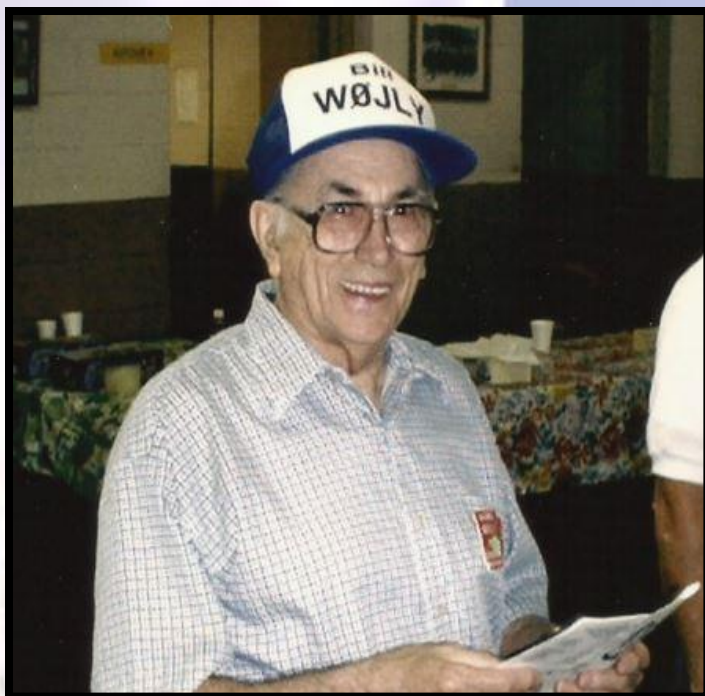
3820 kHz Roundtable - Sundays @ 4 pm

147.255 Repeater Net - Wednesdays @ 8 pm

Wide Area Net - Wednesdays @ 9 pm on the N5UFO NWA Linked Repeater System

IN THIS ISSUE:

- * *In Memoriam* - W0JLY
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- * **W5AEN – HF PORTABLE OPERATION DURING ARKANSAS QSO PARTY**
- * **HAM 101 – HF PRACTICES FOR NEW HAMs**
- * **A HOLLYWOOD STAR, OR A RADIO SCIENTIST?**
- * **HF CONTESTING – AN IRRITANT, OR MEANS TO BETTER OPERATING?**
- * **SEND YOUR NAME TO MARS!**



In Memoriam

**Bill Davidson
WØJLY - SK**

Area hams lost a great friend when William L. Davidson – WØJLY of Bella Vista, became a Silent Key on July 17th, just two months away from his 98th birthday. Bill is believed to have been the oldest and longest licensed ham in the region, and was a familiar voice on the airwaves for an amazing 80 years. Davidson was a charter member of the former Bella Vista Repeater Group, and in recent years, was honored as “Member Emeritus” of BVRC. He also was a member of the former Northwest Arkansas Amateur Radio Club and a former president of the local chapter of QCWA, the Quarter Century Wireless Association.

Bill was a veteran, who served as a U.S. Navy radioman and radar technician. In 1984, he moved to Bella Vista from Topeka, KS, after retiring as vice-president of a tech company performing services for the railroad industry. Friends remember Bill as being incredibly knowledgeable, helpful, well-known, and active on the air daily, participating in HF nets on 75 and 40 Meters. Bill was also known as being a stickler for “resonant” HF antennas, and was appreciated for diligently maintaining area repeaters for decades.

Bill was preceded by his XYL, Mary, and is survived by his son, Craig Davidson, KF5JYV, and daughter in law, Hannah. Burial was at the Fayetteville National Cemetery with military honors; a memorial service was held Saturday, July 27th, at 3:00 p.m., at Bella Vista Community Church, 75 E Lancashire Blvd.

B V R C OFFICERS:**President****Glenn Kilpatrick – WB5L****Vice – President****Chris Deibler – KG5SZQ****Secretary****Wayne Patton – K5UNX****Treasurer****Marc Whittlesey – WØKYZ****Technical Officer****Steve Werner – K5SAW****Repeater / Club Call Trustee****Fred Lemley – K5QBX*****APPOINTED POSITIONS:*****Public Information Officer****Membership Coordinator****Ron Evans – K5XK****Emergency Communications****Paul Blomgren – KC7DQY****HAM 101 Chairman****Gregg Doty – KF5ZIM****VE Testing****Don Cooper -KC7DC****2-Meter Net Coordinator****Chris Diebler – KG5SZQ****Social Media Coordinator****Sheila Katz****Newsletter Editor****Don Banta – K5DB****NEXT BVRC MONTHLY MEETING****THURSDAY - AUGUST 1, 2019 - 7 PM****HIGHLAND CHRISTIAN CHURCH****1500 FOREST HILLS BLVD.****BELLA VISTA, AR*****AUGUST
PROGRAM:*****FUN WITH
ANTENNAS.
EXPERIMENTS.
AND THEORY**

James Bennett – KA5DVS will be on hand for the BVRC August meeting and his presentation, by popular demand of the membership, will be on antenna theory. Among his sub-topics concerning this subject, James will be discussing various antenna types, their characteristics, and the pros and cons of each. It should be a super interesting and informative program for veteran and newcomer hams alike. See you then!!!

BVRC JULY PROGRAM:

Lightning Strike!

by Stan Ross – K5VR

Our BVRC July '19 monthly presenter was Stan – K5VR, who recalled the rowdy awakening in early 2008 when lightning damaged his Tontitown home & station. During his excellent presentation, Stan related that the bolt that struck his QTH originated from a thunderstorm 15 miles away. It entered the house through his tower and then through his coax entry point. It originated at Stan's Ringo Ranger vertical which sat atop his tri-band beam, then entered his antenna rotor (which had 8 unshielded wires) and followed the rotor cable down the tower. It terminated at his remote coax switch box under his wooden station operating desk and set it on fire.

It destroyed his Kenwood TS-440S transceiver and several other station components. The bolt also set a portion of the house eave and soffit on fire.

All this happened at around 5 am on April 8, 2008. A great wake-up call...NOT!

Stan said he has made definite improvements in the aftermath of the strike. Among his new modifications are a grounding box with isolated buss bar and surge protector for his new antennas which is located on the tower.

Thanks Stan, and it's great to have you and Linda as new BVRC members!!!



Stan – K5VR
addresses BVRC
July meeting members

President Glenn – WB5L
presents Stan with the BVRC
Certificate of Appreciation
for a fine July program



BVRC MEMBER SPOTLIGHT

TOM NORTHFELL
W5XNA

This month, THE SIGNAL is pleased to introduce you to one of BVRC's newer members, Tom Northfell – W5XNA. If “being bitten by the ham radio bug” is indicative of anyone in our area fairly new to amateur radio, Tom is definitely one of them. Tom did a stellar job in serving as station captain of the SSB station during the recent BVRC Field Day.

Tom recently retired as an elementary school teacher with the Springdale School District after teaching for 17 years, where he taught 2nd, 3rd, and 4th grades. He recently received an Arkansas *Lifetime* Advanced Educator License, of which he tells us, “My license will not expire until I do!” Tom is also a retired Chicago Police captain where he devoted 25 years of service. He spent a large segment of his career as a sergeant in the Gang Crimes Unit, Special Operation Section, and Hostage-Barricaded-Terrorist (HBT) Unit. He also developed and supervised the inaugural Chicago PD Bike Patrol Unit. *(Editor's note: Tom – We sincerely thank you for your service in putting your life in harm's way in Chicago law enforcement, and in guiding and molding our young people of NW Arkansas.)*

Tom's initial call sign was KG5MQG. While looking for a more memorable vanity call sign, he said, “I noticed that W5XNA was available. Knowing that the suffix XNA is a clear identifier for Northwest Arkansas – I jumped at the opportunity.”

Tom also related to us, “Radio has always been a part of my life. I enjoyed AM radio listening to the World Series and radio station WLS-AM 890 at the beach on my transistor radio. At the time, my favorite radio personalities were Larry Lujack and Steve Dahl. A police buddy and I had the opportunity to be guest DJs one Sunday night on Chicago's *The Loop* radio station FM 97.9. It was a very cool experience and I still have the cassette recording! I became interested in ham radio when I saw that a friend's uncle was able to talk all around the world on his equipment and reading about it in magazines. However, without an elmer or a friend with the same interest, it remained just a dream.”

“I heard about a Technician's Class offered by the Hogville Amateur Radio Club. My XYL knew about my curiosity of amateur radio and encouraged me to try and get my license. After getting my ticket, I became addicted - and thankfully so. Kirk Seifert – W5KRK taught the classes that helped me get my Technician and General licenses, and who I consider to be my first elmer. One goal I have is to get young people to be as excited in the hobby as I am and provide them the opportunity that I wish I had had at their age.” *(2nd Editor's note – Tom is currently elmering 11-year-old Keller Castor, one of his recent students from Sonora Elementary School, who operated Field Day with BVRC on the GOTA station!)*

Tom has enjoyed getting into contesting, DX, and CW, and finds each of them exciting and challenging. He has operated digital somewhat, but prefers SSB and CW on the HF bands.

Tom's station consists of an ICOM 7300, Icom 2300H, two Tytera TH8600 dual band mobiles, four HTs, a Bencher BY-2 paddle and Begali simplex paddle, an Ed Fong Dual Band J-Pole, EFHW 80-10 antenna, a homebrew dual band Yagi antenna, two MFJ 30-amp switching power supplies, an MFJ antenna analyzer, MFJ electronic keyer, MFJ 939I auto tuner, Heil Pro-7 headset, and a Heil Pro-Set 3 headset. Tom also has shared with us that he is looking to add a linear amplifier, to his already super station, in the future.

Just to exemplify to you his passion for amateur radio, when we asked Tom if he had any other hobbies, he replied, "No. – I prefer the world's best hobby. You can hear Tom frequently checking into the VHF/UHF Wide Area Net and the Sunday afternoon 3820 Roundtable.

Tom is married to his XYL Niki, and tells us, "This month I will attest to the fact that she has put up with me for 32 years. I appreciate that she is very supportive of my amateur radio hobby. She recently came out to Field Day and brought one of the side dishes she prepared for the event." Tom, we count it an honor and privilege to have you in the BVRC family!!!

KG5MWG/MOBILE

R-R-R-R-R-icardo On The Air!!!



Several months ago, Rick Pope – KG5MWG, completed installing his IC-208H in his service truck. Rick presented a great program on grounding at the BVRC February meeting.

His first 2-meter QSO was with KV7TZZ on 146.52 simplex, while he was parked in Tontitown, AR.



The following day, Saturday, Rick took to the road enjoying his new mobile station and attended the BVRC Saturday morning breakfast gathering at Rosita's Restaurant in Bella Vista. Later, he made contact with one of BVRC's new members, Susan – KI5CXH in Cave Springs.

Enjoy future mobile adventures during your treks, Rick!

BVRC VE REPORT

July 13, 2019



Congratulations!

Caleb Khazoyan – W6WRK – New Amateur Extra!
Dallas White – KI5DUU – New General!

Test sessions are conducted each 2nd Saturday of the month, 2 pm, at the Highland Christian Church in Bella Vista

*Help promote the availability of the Club's monthly test sessions.
Tell your friends and acquaintances!*

**NEW BVRC
MEMBERS!!!**



Stan Ross – K5VR – Tontitown
Linda Ross – K5LIN – Tontitown
Patrick Geels – KI5EWU – Fayetteville
David Godwin – K5WDG – Springdale
Dallas White – KI5DUU – Bentonville
Greg Young – KI5FAQ – Rogers
Phil Rankin – Garfield – KØPR
John McGee – no call (yet) – Bentonville

N5VSD – New call for Brian, ex-KD8VSD. Brian's current project is experimenting with 'moon bounce.' He has a 'stacked yagi array' with azimuth & elevation rotators on his truck's portable push-up mast (as shown at Field Day & prior to the May club meeting).

WAØTDQ – Another of our VIP seniors, Hugh is back home following stays in the hospital and rehab in Neosho. Hugh had been on the air using PSK on 20 Meters HF using his ICOM IC-7100 and an OCF Dipole.

W5KI, W5JAY – Steve & Jay are among those who have enjoyed long-haul summer DX on 'The Magic Band', communicating with JA's (Japan) on 6 Meter VHF using FT-8 (weak signal digital mode)!

ACØQU – Bill has a new 80 Meter full wave Delta Loop, and has been enjoying his time on the "Awful Awful Ugly Net" on 75 Meters, and operating Field Day with friends in Hiwassee.

N5LML – Randy is enjoying a shiny new ICOM IC-9700 VHF/UHF & 1.2 GHz transceiver.

K5XH – Mark placed in the Top 10 in the U.S. and Canada in the 2019 ARRL RTTY Roundup contest. Way to go, Mark!

KØJWG – Like many local hams, Jonathan enjoys music, currently playing the drums and bass guitar at various Bentonville venues.

W5AEN – Joe displayed an excellent 'show n tell' portable station at Field Day with solar panels and a charge controller from Harbor Freight. A bonus was seeing his fiberglass mast and portable tripod well-used during the AR QSO Party and NPOTA operation at Pea Ridge National Park. (Along with his ICOM IC-7300 and 'J-38' surplus Morse Code key!)

AB9YN – Steve & Bob/WBØAUQ video'd our activities at Field Day, and have produced a nice F.D. DVD for the Club. Steve needs at least two or more members to train as cameras operators to video monthly BVRC programs. Please contact Steve, ASAP, here.

KI5DJP – After much research, Scott purchased a Kenwood TS-480SAT and has been assembling a portable station to use when traveling with his 'teardrop RV.' He has also enjoyed learning Morse Code and SWL'ing (Shortwave Listening) with an "SDR Play" receiver.

KG5SEI – Andy is sounding good with a new Heil Pro-Set headset, to replace the stock hand mic on his ICOM IC-7200. When not repairing lightning damage to his rural wireless internet service, Andy continues to plan his future UHF D-Star capable repeater for western Benton County.

KC7DQY – Paul has been appointed BVRC EmComm Coordinator. His immediate project is organizing public service communications for the 8/3 'Tour de Cure' race. Paul still needs volunteers. Paul is also coordinating the Club's display for the upcoming Emergency Preparedness Fair on 9/21. If you can assist with either, contact Paul, ASAP, via email.

KØJWG – New ham (and new BVRC member) Jonathan has swapped KI5FAO for this new call. Jonathan enjoyed Field Day, and has set-up a nice personal 'bio page' on QRZ.com (www.qrz.com/db/KØJWG).

AA6AR – Vern, a former president of BVRG ('Repeater Group') has relocated to Longmont, CO, and reports that he is already meeting with a local radio club.

AF5YM – Steve is evaluating Army surplus equipment for potential EmComm application.

KG5MWG – Rick (aka "Riccardo") is home in Tontitown with interesting stories following six weeks in southern Italy and the island of Sicily, researching his Italian heritage.

N5RGD – new call of Gregg, ex-KF5ZIM, who is participates weekly in the CW Academy.

W5KI – As announced in July QST, kudos to Steve who won the 'Single Op, CW Only, High Power' category in the most recent ARRL 10 Meter Contest. Congrats Steve!

AC5LX – Bob is recuperating from 'falls & spills' that resulted in a fractured spine. He is now back on the air, and anxious to resume attendance at monthly BVRC meetings.



**From BVRC Membership Coordinator
Ron Evans – K5XK**

K8KBW – Hank has a new balcony antenna mount at his Apple Blossom apartment in Rogers, hoping to get back on the air, soon.

W5JAY – Jay discovered an interesting 'crowd-funded' CW aid, the [Morserino-32](#). We've encouraged him to give it a try and report back with a review for *The Signal*.

NM5AB – After attending Ham-Com in Plano, Noel wasted no time in assembling his station and antenna, and is now on HF from his QTH east of Springdale, near Beaver Lake. One of Noel's first HF QSOs was with the Goddard Space Center.

KG5ZCI – Bill has added UHF capability after acquiring a [Comet GP-6](#) dual band vertical.

K15DUU – At age 16, Dallas is one of our newest BVRC members from Bentonville. Dallas also assisted with the recent N5A Special Event Station.

K5VR – In addition to presenting our fascinating July program on overcoming a lightning strike, new member Stan has also been assisting neighbors W5JAY & WQ5T locate pesky power line interference.

Ham Radio Is Fun!! – Expand Your World!!

From THE SIGNAL Editor, Don-K5DB – I think most of you know that I am definitely *not* one who goes around “tooting their own horn”, but I wanted to share this with all BVRC members, *and especially our new members and license holders, as an encouragement.* - - - There's nothing wrong with getting your ham radio experience started with VHF/UHF simplex or through repeaters.

But, when Guglielmo Marconi discovered and invented radio, and when he succeeded in the first trans-Atlantic transmission in 1901 from Cornwall, England to Nova Scotia, he wasn't trying to communicate on a local scale. He discovered the long waves of the rf spectrum, which was his primary objective. Radio, and later amateur radio, was born. This has been, and still is, the main draw card of our hobby – to communicate with someone you know nothing about hundreds or thousands of miles away, but who shares the same passion and camaraderie in the hobby as you.

The only practical way you can do this is to possess at least a General class license and get yourself on the HF bands. I not only did that 50 years ago, but thanks to my recent and excellent tutelage by Mark-K5XH and Paul-KK5II, they helped me 'spread my wings' and discover the new digital mode of FT8! I had operated nothing but CW and SSB for decades (PSK and RTTY, look out!). YES – use SSB and (if you're inclined to learn and use it) CW, but do not restrict your enjoyment to only those modes! Digital is here in our era as well!

In about 4 months, I acquired my first Digital DXCC award. (Thanks again, Paul & Mark!) It wasn't a 'walk in the park' even with FT8, but I had a ball doing it. Slow scan TV, moonbounce, and other modes are out there as well, but let me encourage you to get on HF, no matter which mode you choose. Repeater operation is fun, but there's nothing like HF!!!

If I can do it, ANYBODY CAN DO IT. 73.....



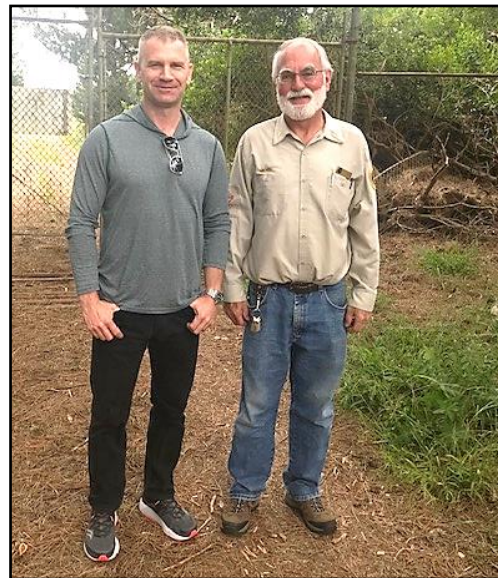
COAST STATION KPH



BVRC member Jacob Chambers – N4EW flew to San Francisco in mid-June and while there, was given an impromptu tour of the last operational Morse coast station in the U.S. – KPH. (The amateur club station's callsign located on the site is [K6KPH](#).) KPH provided world-wide 'ship to shore' Morse communications for ships at sea until 1998.

Jacob said, "They are still on the air on Saturdays. A group of volunteers with the National Park Service is keeping the station on the air. They gave me a great and highly informational tour. Whether you pound brass, or build and maintain, this was nirvana! Wish I had their antenna farm!"

(Thanks for sharing, Jacob.....exceptional !!!)





W5AEN/PORTABLE DURING THE 2019 ARKANSAS QSO PARTY !

BVRC members Joe Hott – W5AEN and Bill Dean – ACØQU teamed-up for a trek 'out in the sticks' down three miles of rough dirt road to the grounds of Liberty Church, south of Dry Fork, AR. The church was about 1500' from the tri-county line of Carroll, Madison, and Newton counties, well within the 1-mile radius rule for the event, which enabled them to activate all three. Although quite remote and the area a little cramped for portable antennas, it is in a very beautiful remote location. The church was established in 1844, just 8 years after Arkansas became a state.

Joe & Bill setup an impressive portable station and made many folks happy with a "three-fer" contact.



Liberty Church, est. 1844



Bill – ACØQU preparing a vertical with 3 tape measures for radials

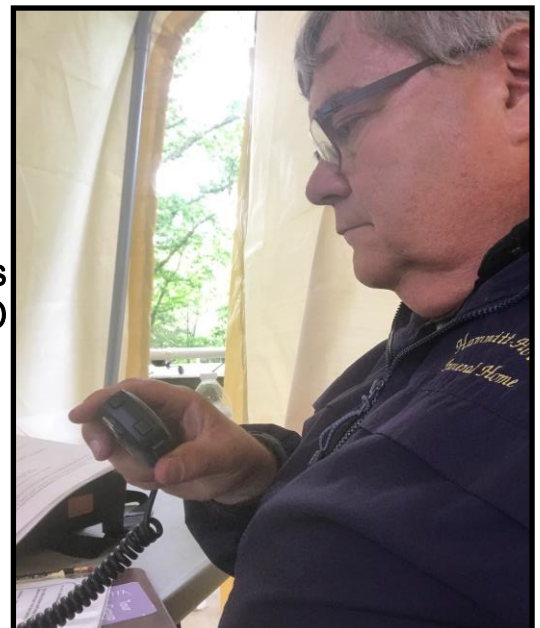


W5AEN/P generator



Portable mast supports a G5RV with a Dr. Ed Fong 2m/70cm on top

Joe – W5AEN makes
a SSB QSO



HAM 101

The Column for New Hams

"Good Operating Procedures for Hams New to HF"

Getting on the HF bands for the first time is one of the most exciting times for anyone that holds an amateur radio operator license.

For many seasoned and veteran General class license holders and above, earning the privilege of HF operating was well beyond words to describe! But here are two or three that will help you!

Normal and DX Operating on HF is very different from the 2-meter, 6-meter, 440, and bands higher. You won't be using repeaters on HF like in the case of 2-meters, as you were with your Technician class license. You will strictly be in direct contact with the station on the other end, much like simplex on 2 meters. Your contact may be on the other side of the town you live in, on the other side of the world, or in-between, using HF frequencies.

Depending on the time of day, propagation, the band you have selected, the mode you're using, and many other variables, your contacts may be "loud and clear" or almost down in the noise. You will have to accept major interference from Mother Nature's lightning crashes, solar storms, power line and other man made device noise, and sometimes just too many stations on or near your frequency.

HF ham radio operating can be a challenging adventure at times when all of those variables are working against you so don't expect crystal clear FM quality as if your operating on a repeater on the 2 meter ham band all of the time. It's kind of like going fishing, sometimes you have a great catch with strong signals, and other times, not a nibble! Don't give up – you will make contacts, and you will find a whole other and exciting world in HF operation.

Probably the most important thing you need to remember when transmitting is *identifying*. FCC rule 97.119 states that each amateur station (except a space station or telecommand station) must identify at the beginning and end of each transmission, and at least every 10 minutes during a communication. When identifying, there is no need to give your callsign and then say "For ID".....you callsign *is* your ID!

There are fundamental steps in HF operation. Let's cover some of the more important elements (which are not necessarily in any order of importance). The more you operate HF, the more these characteristics will become an automatic nature to you, and the more successful and fun your HF operations will be.

1. LISTEN, LISTEN, LISTEN!

"Hey...wait a minute...I thought ham radio was about 'talking'!"

It is – but you will be surprised at how much you can learn about operating and ham radio by just listening around the bands! You always listen first to make certain the frequency is not busy before you transmit. If you're bored with that video game, the internet or whatever, get on any active ham band and tune around until you hear an interesting conversation. Listen to the conversation and try to pick out ham terms, topics or phrases you don't know the meaning of. When you do make a contact, let them know you're new to HF. Most hams will be glad to help you familiarize yourself with operating terms and procedures.



2. BE PATIENT

Making a contact to get any station to call you on HF usually requires that you use the term "CQ" repeated at least 3 times in a row along with your call sign on the end and waiting for a reply. If none, repeat it over again....then try the third time and hope for an answer to your call. If still none, don't get discouraged!

If you have called CQ a multitude of times and still get no answer, try to figure out why....is it our old friend/enemy propagation? Your equipment? Your antenna type or setup? Do you have power out to the antenna? How do you know? Do you show output on the power meter? How is the SWR? Check your complete station setup including all controls, functions, cables, etc....is your antenna still up! Contact a local ham on the phone or via email and set up a time and frequency to check out your station on the air. If your trying to make a contact and can't, then chances are that propagation is against you.

3. USING PHONETICS ON HF

One of the major causes for voice communication errors is the misunderstanding of the spoken word on HF especially when operating under noisy conditions. Using the SSB mode under the assumption that it is a high fidelity mode like FM will surely disappoint you. There are many "accents" to the human voice and being in the sideband mode causes some words at times to be very unclear if the sending station is having technical problems with his microphone or audio circuits in his transceiver or you are operating under high noise levels.

If the other station's audio is extremely distorted, cordially and in a spirit of helpfulness, tell him so. He may have his mic gain cranked wide open, compressor full blast or a combination of both causing the background noise in his shack to be as loud as his voice! Or, his mic may be causing the problem and he may not know it. Again, let him know that you think he has a problem with his audio.

Even under the best of conditions, SSB communications can sometimes be hard to understand and if you have a hearing problem, even more so..... ENTER PHONETICS!

The definition of the word "phonetics" is: The study of speech sounds.



The Phonetic Alphabet is used to spell out letters in place of just saying the letter itself. By using a word for each letter there is less chance that the person listening will confuse letters.

For example, some letters that can easily be confused are "D" and "B". Using the phonetic alphabet, "Delta" and "Bravo" can be easily understood. The phonetic alphabet is used primarily in two-way radio communications. The effects of noise, weak signals, distorted audio, and radio operator accent are reduced through use of the

of the phonetic alphabet. This system of pronouncing letters is used around the world by maritime units, aircraft, amateur radio operators, and the military. This alphabet is recognized by the International Civil Aviation Organization, Federal Aviation Administration, International Telecommunication Union, and NATO as the standard for aircraft communications and radio communications.

Using phonetics can help tremendously in the understanding of the more difficult sounding words, numbers, etc. It would be hard not to understand the call sign KA6FSX by using phonetics: Kilo-Alpha-6-Foxtrot-Sierra-X-ray.

Here is the ICAO phonetic alphabet and numbers used in amateur radio. Memorize it, because you will use it often:

Character	Pronunciation	Character	Pronunciation
A	Alpha	S	Sierra
B	Bravo	T	Tango
C	Charlie	U	Uniform
D	Delta	V	Victor
E	Echo	W	Whiskey
F	Foxtrot	X	X-Ray
G	Golf	Y	Yankee
H	Hotel	Z	Zulu
I	India	0	Zero
J	Juliet	1	One
K	Kilo	2	Two
L	Lima	3	Three
M	Mike	4	Four
N	November	5	Five
O	Oscar	6	Six
P	Papa	7	Seven
Q	Quebec	8	Eight
R	Romeo	9	Niner

4. THE R-S-T REPORTING SYSTEM – Learn how to send and receive a signal report

Once upon a time during a roundtable discussion group, one of the roundtable members who was new to HF ham radio asked one of the other members of the group to give him a signal report.

The report he got back from the other station was, "You're 59". Silence was heard for a few moments and then the new ham said, "I did not want you to guess my age....how do you hear me? The reply was again, "You're 59". "What do you mean?" the new ham said. Then another station in the roundtable began a very lengthy dissertation to try to explain the RST reporting method to him that *no one* could have understood.

He started talking about power levels, dB's, S-meters, propagation, antenna theory, brand names, receiver sensitivity and on and on for a good five minutes! When the new ham started to ask questions, another station spoke up and totally confused the situation even more! Then another station put-in his 'two cents' worth. After a couple more questions with no clear answers, the new ham finally said "I still don't understand how well you are hearing me. I hear the phone ringing – gotta go!" and he signed-off abruptly, being very confused and probably disgusted.

In answering his question, "How do you hear me?", it would have been much better in this case to just say "loud and clear" since the new ham had obviously not studied the RST system of signal reporting and none of the roundtable station operators could explain RST to him in simple terms. They just seemed to want to dazzle him with as much "info" as possible. They were trying to help in their own way, but did not want to admit their lack of a "good" explanation. They should have simply suggested that he study the RST reporting system on the internet or printed matter, where he could find that information.

To you new hams, or anyone for that matter who knows nothing about giving or receiving signal reports using the RST method.....read on!

THE RST REPORTING SYSTEM IN A NUTSHELL!

An RST report is a report from a receiving station on the quality and strength of the transmitted signal, using shorthand in the form of numbers to represent the tone of a CW signal or voice transmission of a transmitting station's signal at the receiving station's QTH (location).

Here is what it means:

R – Readability: Understanding what is said and how well, on a scale of 1 to 5. The readability of your signal with a "5" being perfect with no difficulty. In other words the ability of the other operator to understand what you are saying, down to a "1" which is unreadable.

S – Strength: On a scale of 1 to 9, and shown on your radio's S-meter, this indicates how strong your station's signal is. A "1" is a very faint signal, a "9" is a strong signal, and anything over 9 is an extremely strong signal. At times, you will hear HF operators receiving an extremely strong signal, advise the transmitting station, "Great signal! You are 20 over 9, 15 over 9, or whatever their S-meter is indicating.

T – Tone: This # is added when CW (Morse code) is being used. It indicates on a scale from 1 to 9, the quality of the tone of the morse code "dits and dahs". From a "very pure tone" (9), to a 60-cycle "harsh" tone (1).

So, during a SSB QSO (contact), the signal report sent and received would only consist of two numbers (R and S). During a CW QSO, the signal report would consist of three numbers (R, S, and T).

So, during a SSB QSO (contact), the signal report sent and received would only consist of two numbers (R and S). During a CW QSO, the signal report would consist of three numbers (R, S, and T).

Hence on SSB if you received a “4/4” signal report from another station, that would translate to your signal being readable with a small amount of difficulty, and your signal is fairly copyable.

Readability - Strength - Tone: RST Signal Reports			
R-S-T Characteristics	Readability R	Strength S	Tone T (cw)
1	Unreadable	Faint signals, barely perceptible	Sixty cycle a.c. or less, very rough and broad
2	Barely readable, occasional words distinguishable	Very weak signals	Very rough a.c., very harsh and broad
3	Readable with considerable difficulty	Weak signals	Rough a.c. tone, rectified but not filtered
4	Readable with practically no difficulty	Fair signals	Rough note, some trace of filtering
5	Perfectly readable	Fairly good signals	Filtered rectified a.c. but strongly ripple-modulated
6	N/A	Good signals	Filtered tone, definite trace of ripple modulation
7	N/A	Moderately strong signals	Near pure tone, trace of ripple modulation
8	N/A	Strong signals	Near perfect tone, slight trace of modulation
9	N/A	Extremely strong signals	Perfect tone, no trace of ripple or modulation of any kind

5. PROSIGNS, Q-SIGNALS, AND CW ABBREVIATIONS

Q-signals can be used on both SSB, CW and Digital modes. They are also a kind of “shorthand”. International Q-signals are an abbreviated way to exchange a great deal of information with a simple code. Below are some of the more commonly used Q-signals:

Q CODES

QRL • Is the frequency busy? The frequency is busy. Please do not interfere.
QRM • Abbreviation for interference from other signals.
QRN • Abbreviation for interference from natural or man-made static.
QRO • Shall I increase power? Increase power.
QRP • Shall I decrease power? Decrease power.
QRQ • Shall I send faster? Send faster (WPM).
QRS • Shall I send more slowly? Send more slowly (__ WPM).
QRT • Shall I stop sending? Stop sending.
QRU • Have you anything more for me? I have nothing more for you.
QRV • Are you ready? I am ready.
QRX • Standby.
QRZ • Who is calling me?
QSB • Abbreviation for signal fading.
QSL • Received and understood.
QSO • Abbreviation for a contact.
QST • General call preceding a message addressed to all amateurs.
QSX • I am listening on __ kHz.
QSY • Change to transmission on another frequency (or to __ kHz).
QTH • What is your location? My location is ____.

As you can see from the above table, you can ask a question when you send a Q-signal with a question mark (?) following it, or you can make a statement with a Q-signal by omitting the question mark at the end of the signal.

CW procedural signals – or prosigns – are shorthand signals used in radio telegraphy procedures, for the purpose of simplifying and standardizing communications related to radio operating issues among two or more radio operators. They are distinct from general Morse code abbreviations, which consist mainly of brevity codes that convey messages to other parties with greater speed and accuracy. The below table lists many of these prosigns, although only a few are the main signals used in CW communications:

PROSIGN	MEANING
AA	All After
AA	Unknown Station
AB	All Before
AR	End of Transmission
AS	Wait
B	More to Follow
BT	Long Break
C	Correct/Correction
DE	From
EEEEEEEE	Error
F	Do not answer
FM	Originator's sign
G	Repeat back
GR (numeral)	Group count
GRNC	Groups not counted
HM (three times)	Emergency silence
I	Separative sign
IM	Repeat
INFO	Information addressee sign
INT	Interrogative
IX	Execute to follow
IX (5-second dash)	Executive signal
J	Verify with originator and repeat
K	Invitation to transmit/over
NR	Number
O	Immediate
P	Priority
PT	Call sign follows
R	Receipt/Roger
R	Routine
T	Transmit to
TO	Action addressee designator
WA	Word after
WB	Word before
XMT	Exempted addressee designator
Z	Flash

6. KNOW YOUR FCC REGULATIONS – Familiarize yourself with FCC Part 97 rules. This is required of all U.S. hams.

7. KNOW 'The Amateur's Creed' – The radio amateur is:

- **CONSIDERATE** – Never knowingly operates in such a way as to lessen the pleasure of others.
- **LOYAL** – Offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which amateur radio in the United States is represented nationally and internationally.
- **PROGRESSIVE** – With knowledge abreast of science, a well-built and efficient station, and operation above reproach.
- **FRIENDLY** – Slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
- **BALANCED** – Radio is an avocation, never interfering with duties owed to family, job, school or community.
- **PATRIOTIC** – Station and skill always ready for service to country and community.

By using these suggestions and techniques, you'll be well on your way to enjoying HF operation!

Hedy Lamarr

**Hollywood Star or Radio Scientist?
Why Not Both?**

A big name in MGM's "Golden Age", Hedy Lamarr starred in many films as an actress, probably best known for her portrayal of Delilah in the 1949 epic "Samson and Delilah", co-starring with Victor Mature. What many people are unaware of, however, is that she also co-developed one of the most crucial scientific developments of our time.

Along with many other clever solutions, she co-invented an early technique for spread spectrum communications.

This was crucial to the many wireless communications of our present day. According to Melanie Phillips (2018), Hedy referred to her project as the "secret communications system" and began developing it around World War II. Her "SCS" was originally designed to help subs fire torpedoes. These are powerful but difficult to control weapons, and they could often go off course, and damage or even hit the wrong target. There was a desperate need for a system that could reliably control these torpedoes. She found her answer in *radio systems*.



At the outset, radio contact was used between the torpedo and the sub or ship that it was fired from. This allowed for a great deal of control. However, if the opposing forces figured out what frequency the torpedo and the ship were communicating on, they could just block that frequency. Control would be lost, and the torpedo would go off course. Hedy and a composer, George Antheil, solved this issue and created a system that allows the two vessels to communicate by jumping between different radio frequencies. Due to the ever-changing frequencies, the connection became impossible to intercept, and the problem was solved!

At first, her idea was laughed at by the U.S. Navy, who told her to "go back to being an actress." However, it was Hedy who had the last laugh. Eventually, the U.S. military realized just how invaluable her invention truly was, which is now known as "frequency hopping" or *spread spectrum emission*, of which she did acquire a patent for. Hedy proved that anyone can be an inventor, if you have the drive and passion to make it work! Her system allowed for the much-needed security during World War II, but over time it became the foundation of military communications, cellphones, and bluetooth! Our wireless lives are all thanks to Hedy Lamarr and the power of the radio!

(Article adapted from <https://www.womenshistory.org/education-resources/biographies/hedy-lamarr>)



CONTESTING – AN IRRITANT OR A MEANS TO BETTER OPERATING?

By Don Banta — K5DB

BVRC just completed a very successful Field Day, the biggest U.S. event in amateur radio. Field Day's prime objective is the training of radio amateurs in preparedness of emergencies, natural disasters, etc. Each year, veterans of amateur radio sharpen their "set-up skills" in going through preparations for emergency situations, while at the same time pass these skills on to newcomers in the hobby. It is a great tool for fellowship, technical talk, sharpening operating skills, and in many cases lasting bonds within the ranks of the amateur radio fraternity.

What follows after the Field Day setup is a 24-27 hour contest (depending on the time you began your FD setup) that is the simplest and most fun event of the year. The contest simulates message passing and handling. The exchange required between participating Field Day stations only and simply consists of a number (# of transmitters being used), a letter (denoting the operating class the station is participating in), and the station's ARRL Section designator. It's that simple. This format accomplishes the objective of anyone being able to comfortably participate in the contest.

With FD 2019 just behind us, also comes the age-old debate concerning contesting. When it comes to the ham populace, there is generally no "gray area" when this topic is brought up. Most hams either love it...or hate it, for the various reasons which they adamantly state when the debate ensues.

We are featuring the following article in this month's issue of THE SIGNAL, not necessarily as an editorial, but simply as an informational / educational / entertaining offering in an attempt to, at least somewhat, resolve that debate. And, whether you agree or disagree, Field Day is an excellent event opportunity for you to hone your operating skills, no matter what realm of amateur radio you operate in. If contesting is not your forte, there is absolutely nothing wrong with that. If, however, you get bitten by the "contesting bug", there is nothing wrong with that either. This article simply contains some points as to the positive outcome that contesting can bring, along with some other hopefully useful information, and now is an excellent opportunity to share it with you with Field Day still fresh on our mind. Please enjoy:

There usually is no common ground when the word "contest" is mentioned in ham radio circles. Usually operators either love contests or they hate them.

The hams who deplore contests are usually those who have their routine roundtable on a given frequency either interrupted by a contester apathetically moving onto their frequency without checking to first see if it's in use and blindly transmitting "CQ Contest!" (which is rude).

This issue usually occurs during weekends when contests normally take place. If it happened twice a year, it might not be that big of an issue – but contests happen year round. On any given weekend, there is some type of contest going on, so these hams do have a legitimate complaint, to a point. *(cont. next page)*

On the other hand, some of these same type operators attempt to “muscle their way on frequency” by telling a friendly contester who has been operating on that frequency for two hours, that their “group” operates on that frequency every (day) at (time) and “you need to QSY” (which is also rude). The airwaves are free and a cooperative spirit should be the overriding factor to these interactions but, unfortunately, most of the time it is not.

Then there are those hams who live for contests. The competitive activity gets the adrenaline gland kicked-in, and for these operators this is what ham radio is all about. They live for the radiosport side of ham radio.

The next group is the casual contester. The operators in this group participate in Field Day and two or three other contests. When Thanksgiving comes around they think more about football than the CQ World Wide CW Contest.

If you are new to amateur radio, and in particular HF operating, there is absolutely nothing wrong with engaging in a friendly roundtable group or net. They are fun, entertaining, and educational. However, there are advantages to contesting as well.

Contesting can be a great training tool for you, especially if you are a new operator. A lot of beginning hams who make the decision to get started on HF, want to get the wall covered in QSL cards, achievement certificates, and awards. It's great to get that Worked All States (WAS) and DX Century Club (DXCC) certificate as a testament to your operating skill and persistence. Contests and special operating events can be big keys to success in these areas. Operating events like QSO Parties and other contests can help to fill out your log for needed contacts. Some events may not jump out as helpful, but try them anyway. In February and October the School Club Roundups can possibly net you some contacts for states that you might not have worked as yet, and above all, help introduce young people to the world of amateur radio. The Rookie Roundups in April, August, and December can help with that as well.

FIELD DAY is another great way to snag states, counties, and/or countries. For many hams, this is the ONLY contest they work. Check the FISTS sprints as well. The ARRL Sweepstakes CW and ARRL Sweepstakes Phone weekends in November are another way to get a lot of activity in the log. In March and May, the CQ WPX (Worked PrefiXes) contest is another opportunity to rack-up contacts on the national and international scale. If you are diligent and persistent, you *can* acquire DXCC in a weekend during the CQ Worldwide and ARRL International DX contests.

Sometimes, contesting will push you to try other modes and upgrade your operating equipment and techniques as well. In the late '90s it dawned on many operators that running mechanical RTTY or even a solid state terminal unit was no longer going to cut it in contests. Even by formatting tapes to work about five contacts at a time, the computer-based RTTY operators were working three times the amount of contacts. The realization was that teletype terminal units were no longer sufficient for modern teletype operations. It's also becoming obvious that ears, brain, key paddle, paper, and pen can't compete against computer-based CW operations in CW contests. However if you can handle 15-30 wpm in your head and are good on the paddle, you can still hold your own in a lot of CW contests, although it will be challenging.

It used to be that if you were a good CW operator and had a TTY demodulator, you were good-to-go for most modes and activities. Those days are OVER. You have to acquire the software for the newer modes, computer logging, and contesting programs to be up to speed on contesting activities. **The bottom-line result to all this, is that you will be a *better* operator and your station will be more versatile for not only contesting, but for EMERGENCY and DISASTER communications.**

(cont. next page)

Here are some URLs that might prove to be helpful: www.hornucopia.com/ and www.contesting.com/. At the top of the *contesting.com* page you will find contesting tips and what you need to get started. On the *hornucopia* site is a contest calendar, so you can plan for upcoming contest activities. Another site to check is www.arrl.org/contests/. It is also a good idea to check "Contest Corral" in QST every month and follow up on the URLs listed for specific contests.

If you have never gotten on the mic, the key, or the keyboard, all of the preceding might seem like just a bunch of words, so here is a step-by-step approach to getting started in contesting:

- Get started in a friendly environment. Operate during Field Day. If you are new to CW log and operate on the CW station, talk to the other operators - find out how the timing works. The same goes for working SSB. GET ON THE AIR, talk to the other ops, learn by doing.
- Start with smaller activities like the State QSO Parties, and FIST Sprints. Once you are comfortable with these you are ready to move up to the international "biggies" like the CQ Worldwide.
- Stay up late. Contest activity tends to lighten up during the wee hours. That's because even die-hard testers get tired just like everyone else.
- Keep propagation patterns in mind. You will be more successful if you are taking advantage of the best radio propagation.
- Learn from veteran testers in your local club.

And above all, remember – it's designed to be fun!

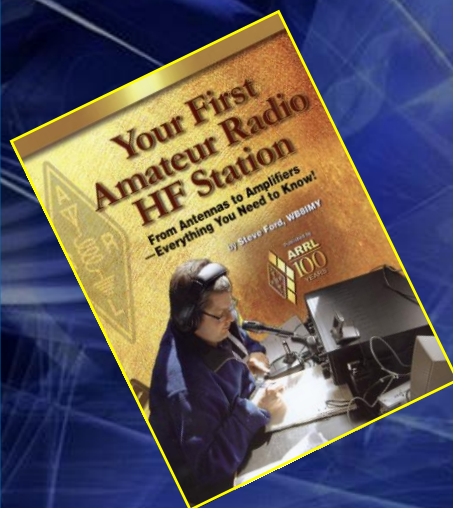
If you have just acquired your General and/or Amateur Extra radio license, welcome to the world of HF! You possibly have a thousand questions on what to do and where to go from here. Of course, hands-on learning is the best way to acquire knowledge, and any of our veteran BVRC ops will be happy to help you in your endeavor to get on the air and comfortably operate with your new HF privileges.

In the meantime, the ARRL has an excellent book by Steve Ford – WB8IMY that you will invariably find useful: *YOUR FIRST AMATEUR RADIO HF STATION*.

In this publication, you will find many excellent starting points for such areas as:

- What kind of antenna should I use?
- What radio should I buy?
- Do I need an amplifier?
- What about a computer?
- What types of accessories do I need?
- Electricity – good and bad.

You can order your copy direct from ARRL. Use Order #0079. The price is \$22.95, but if you're an ARRL member, your price is \$19.95.



SEND YOUR NAME TO MARS!

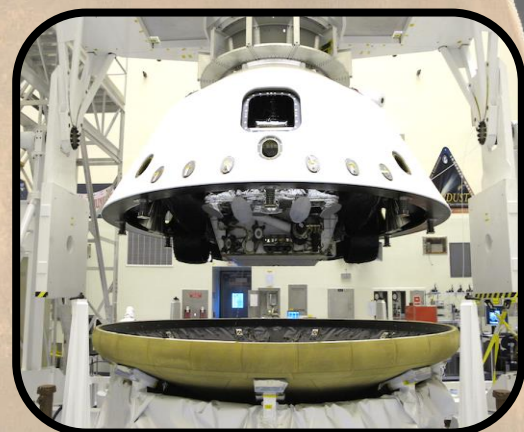


Mars 2020 is a Mars rover mission by NASA's Mars Exploration Program with a planned launch on 17 July 2020, and touch down in Jezero crater on Mars on 18 February 2021. It will investigate an astrobiologically relevant ancient environment on Mars and investigate its surface geological processes and history, including the assessment of its past habitability, the possibility of past life on Mars, and the potential for preservation of biosignatures within accessible geological materials. It will cache sample containers along its route for a potential future Mars sample-return mission.

The rover's design is derived from the *Curiosity* rover, and will use many components already fabricated and tested, including different scientific instruments and a core drill.

NASA announced in June 2019 that a student naming contest will be held in fall of 2019 to determine the name of the rover.

And while the Mars 2020 rover is doing all of this, your name could be along for the ride. If you send-in your name before September 30th, NASA engineers at the Jet Propulsion Laboratory will etch it onto a silicon chip with an electron beam, which the rover will carry it on its journey. The names are going to be pretty tiny, though – about one-thousandth the width of a human hair. That's small enough so that more than a million names can be included on a single chip as big as a dime.



And just like any seasoned traveler, you'll get a boarding pass and "frequent flyer" miles. AND – when I filled out my reservation – I listed my name as "Don K5DB Banta" So when the new rover lands, my callsign will be forever on the Martian surface. Go to: <https://mars.nasa.gov/participate/send-your-name/mars2020/> to send your name to Mars!



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