



NARS NEWS

March 2016

The Northwest Amateur Radio Society
an ARRL Special Services Club #2120

Important Dates

Monthly club meeting:

Third Friday of each month, 7:30 pm.
Cypress Creek Christian Community
Ctr., Youth Center 2nd. Floor, # 203,
6823 Cypresswood Drive

Board of Directors Meeting

Tuesday, March 29, 2016, 7:30 pm.
Ponderosa Fire Station
17061 Rolling Creek Drive, Houston

VE License Exam:

Saturday, March 26, 2016
Tomball Regional Hospital, 1st floor,
Conference Room, 8:00 am.

Lunch Break—North

Mar 2, Spring Creek BBQ
Mar 9, Pei Wei
Mar 16, Panera Bread
Mar 23, Jason's Deli
Mar 30, Baker Street Pub
Apr 6, Sweet Tomatoes

Lunch Break—Medical Center

Mar 2, Pronto Cucinino
Mar 9, Jason's Deli
Mar 16, Buffalo Grille
Mar 23, Southwell's Hamburger
Mar 30, Macro's Mexican Bar & Grille
Apr 6, Silver Palace Chinese Buffet

Tail Dragger's Lunch Bunch -

Mondays, 11 am.
Aviator's Grill, Hooks Aerodrome

Notice: NARS membership dues are
\$20 per year, renewable on anniver-
sary date.

NARS Program - Friday, Mar 18th 2016



The program will be a showing of the K1N Navassa Island DXpedition 2015 DVD. This DVD was just released in the last month and is likely the best production in a series from Bob Allphin K4UEE. He has led many DXpeditions to the world's most wanted countries and entities. Running time is 40 minutes and includes an interesting and fascinating story of the 13 years it took to plan from start to finish.

**Breakfast at
Denny's**

**Saturdays, 7 a.m.
6504 FM 2920, Spring, TX
Just a few blocks west of
Kuykendahl at the intersection of
TC Jester & FM 2920**

***NARS is moving to a new building,
Friday, March 18th!***

Yes, we are still meeting at the Cypress Creek Christian Community Center as before, but are now moving to the Youth/Education Center building across from the Barbara Bush Library as of Friday, March 18.

See page 3 for details.

President's Corner

Renewal Progress Report

Our club is entering the first phase to renew our leadership and attract new members. At the last Board meeting there was a lot of activity. I never saw any sign of boredom or inactivity. The meeting went the full time from 7:30 until 9:00pm. A list of our main actions will be reported in the next newsletter.

Richard Nelson KF5WRD, our new VP, is busy setting up the membership meeting programs for the entire year. He is looking for feedback from our members to find out what they would like to have for programs. I urge all members to contact Richard with your ideas and suggestions. In addition, think about presenting a program, or recommending a presenter.

Fiend Day is always a popular event with NARS members. The Board is looking for a coordinator to take the reins of this event. The coordinator will select a team to provide leadership for the CW, phone and GOTA stations. It would also be nice to have someone set up a station to communicate via satellite. These activities need support from others good at providing power and antennas. If you have an interest in any of these FD activities, be ready to join the coordinator in planning FD. Also, consider being the coordinator. You will gain valuable information and experience.

I learned that our meeting place will be in a new location beginning in March. So, if you are planning to attend, look for details on the reflector and in the newsletter. Also, pass the word around. Thanks.

The NARS Board meeting is held the last Tuesday of each month at Ponderosa Fire Department Station 61, located just north of FM1960 on Rolling Creek Drive. This is an open meeting and all members are welcome to attend. If you want to address the Board, let me or any Board member know a few days ahead of time so we can get you on the agenda.

Thank you for your support this year.
73, Keith Dutson NM5G

Saturday, February 27 VE Test Session Results at Tomball Regional Hospital

We had 12 candidates taking 17 tests.

Element 2 tests given: 8; passed 8

Element 3 tests given: 7; passed 4

Element 4 tests given: 2; passed 2

Congratulations to:

Stuart Spreen - new Technician

Martin McAfee KG5GFW - upgrade to General

James Shoulen - new General

Matthew Lindstrom - new Technician

Christopher Hulen - new Technician

George Paxson KF5NRO - upgrade to Extra

Steven Robbins - new Technician

Kenneth Binnie - New General

Sam Warr - new Technician

Roy Smith N0ROY - upgrade to General

Robert Dennis K5ABN - upgrade to Extra

Thanks to the VE's in attendance:

Mike Bowen N8ILU

William Hielscher KG5WPH

Mike Bragassa K5UO

Ship Ferguson K5LLR

Sheree Horton KF5LMJ

Ron Horton KF5LFL

Martin Rogoff N5GPS

The next monthly session will be held 0800 Saturday, March 26, at Tomball Regional Hospital, 1st floor conference room.

Anyone who wants to observe and/or participate in a session is always welcome. Just let me know if you want to learn more about becoming a volunteer examiner.

73, Keith Dutson NM5G
NARS VE Session Manager



4721 Watonga Blvd.
Houston, TX 77092
www.ofarc.org

V.E. Exams every 4th Saturday
of the month at 9:30 a.m.
Contact: John Westerlage
N5DWI@oafrc.org for further
info.



If At First You
Don't Succeed...

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RETAIL | REPAIR | CONSIGNMENT | INSTALLATION

houstonamateurradiosupply.com

Dave McCombs, NA5CW
Owner

281-355-7373
contact@harsradio.com

2558 E. FM 1960 Rd.
Houston, TX 77073

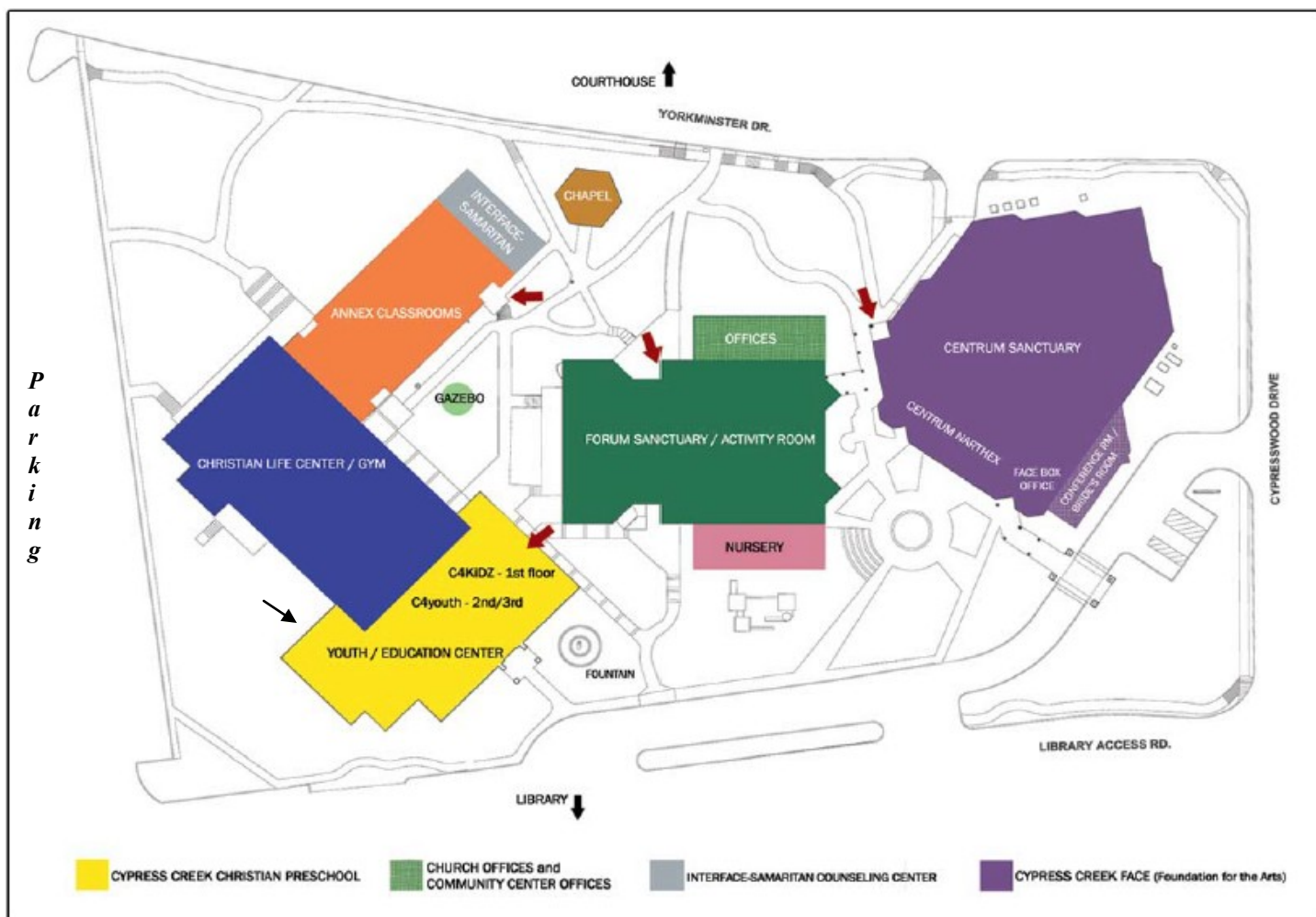
146.660 Repeater News

Anyone wishing to help defray the cost of replacing the repeater, antenna, connectors, etc. can make a donation to the Repeater Fund by making checks payable to NARS and designate "Repeater Fund" in the Memo field.

NARS, P.O. Box 90387, Houston, TX 77290-0387

NARS is moving to a new building!

Yes, we are still meeting at the Cypress Creek Christian Community Center as before, but are now moving to the Youth/ Education Center building across from the Barbara Bush Library as of Friday, March 18. We'll have greater privacy there, a screen for our visual presentations and easier access for those with physical limitations. The room, #203, is located on the second floor and is accessible by an elevator or staircase. Restrooms are situated directly across from the classroom, and yes, we will still be able to brew our coffee as before. Entrance to the building is shown as indicated by the arrow and close to the elevator, although there will be an additional entrance at the opposite end of the building near the parking area.



FCC SEEKS COMMENTS ON LIFETIME LICENSES, 80/75 METER CHANGES

If you have thoughts on the ARRL's petition for the FCC to make changes to 80 and 75 meters, now is the time to share them. Or if you want to weigh in a proposal that the FCC issue lifetime amateur radio licenses, take care of that now too.

On the bands, the ARRL has asked the commission to fix what it calls a shortfall in available spectrum for RTTY and data, following the bands' reapportionment by the FCC a decade ago. The ARRL would like to see the boundary shifted between the 75 meter phone/image subband and the 80 meter RTTY/data subband - a proposal that the league's Board of Directors adopted as policy in July of last year. The ARRL would like the phone/image subband to extend from 3650 kHz to 4000 kHz and the RTTY/data subband to extend from 3500 kHz to 3650 kHz. The ARRL would also like 3600 kHz to 3650 kHz made available for General and Advanced Class licensees - as it had been before 2006.

The FCC is also considering a request made last year for lifetime licenses to replace the 10-year term. In his petition, Mark F. Krotz, N7MK, of Mesa, Arizona, pointed out that the General Radiotelephone Operator License sets a precedent because it is already valid for a lifetime. Using the FCC's Electronic Comment Filing System (ECFS), select RM11759 for the 80 and 75 meter issue, and RM11760 for the lifetime license issue. Let your voice be heard.

Northwest Amateur Radio Society - Board Meeting Action

Tuesday, Feb 23, 2016, 7:30pm
Ponderosa Fire Department Headquarters – Station 61
17061 Rolling Creek Dr
Houston, TX 77090
281-444-8465

Membership Meeting Programs Planned:

Completed

Feb – TQP Final Results

Proposed

Mar – DVD showing of K1N Navassa Island DXpedition 2015

Apr – open for discussion

May – Get ready for Field Day 2016

Jun – FD final planning and presentation

Jul – open for discussion

Aug – open for discussion

Sep – Get ready for TQP 2016

Oct – open for discussion

Nov – Elections, TQP 2016 preliminary results, Awards

Banquet 2017 Announcement

Dec – K5ZTY Annual Show and Tell

Jan 2017 – Awards Banquet

Board members asked to canvas membership for ideas and suggestions.

New Business:

Field Day 2016 Coordinator to be recruited from membership.

Duties to include selection of station and support captains (CW, Phone, antennas, power, other)

Membership Meeting Place Cost and Alternatives to be reviewed for 2017.

NARS equipment and other assets to be reviewed and maintained in a list by VP.

Donation sent to Webmaster to help offset expenses for W5NC.net and TXQP.net.

NARS official sponsorships for volunteer and/or financial support:

Buffalo Bayou Regatta

Texas QSO Party

Salvation Army Bell Ringers

NARS VE Sessions

NARS Ham Classes

NARS CW Class

Field Day

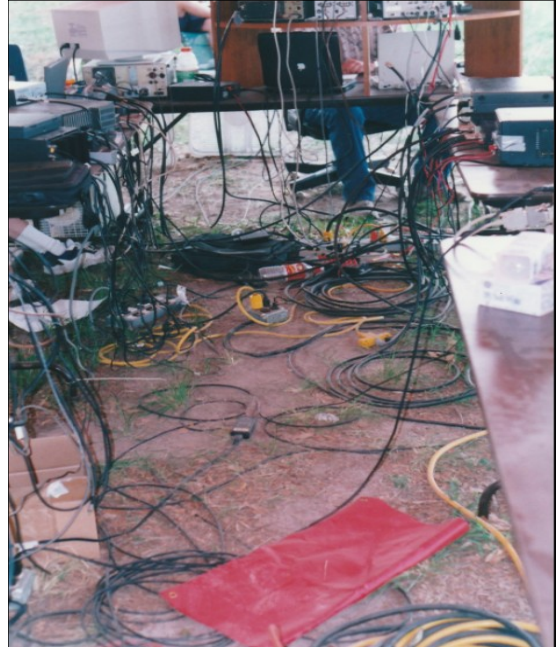
Redd School

Board meetings are held the last Tuesday of each month. Members may attend to observe and/or present requests for action. See any board member for more information. Visit <http://www.w5nc.net/> for current club information.

NARS in rewind - Field Day 2002

Field Day was a big, big deal for NARS. Coordinated by O. J. Quarles K1OJ and Bruce Meier NILN, Field Day ops were set up at the Spring Branch ISD Career Center campus. The weather was great—warm but low humidity. All the equipment worked (most of the time.) We had lots of time to play radio, talk to old friends and meet some new ones. We were even on Channel 11 news Sunday night and again on Monday morning. What more could we have asked for?

Whatever place we end up finishing in, we did have a great time. We finally got it right!



Hey! This was after we got it all organized!

Need we remind you?

Field Day is first and foremost a practice run for emergency communications. This means we get to test our planning, preparation, skills and equipment as if most of the U.S. power grid has gone offline. The job of communicating needs, summoning disaster relief, and helping our friends and neighbors falls to the amateur radio operator during these times. How we approach Field Day will be an indicator of how well prepared we are for the real thing.

Secondly, Field Day is an opportunity to demonstrate these abilities to not only ourselves, but to the general public as well. It is an opportunity to share our passion for communications and our commitment to providing service to the community. It is an opportunity to demonstrate the willingness to be a friendly face (and voice) to someone when disaster strikes. How do we react to less than ideal conditions...how do we treat others when the chips are down...can we tackle the task with a smile and remember that society does not revolve around us as individuals? Will our visitors like what they see and want to join us?

Field Day 2016 is fast approaching and volunteers will be needed for a variety of positions. Of course, setting up and tearing down antennas and stations is important, but we especially need a Field Day Coordinator, Station Captains, operators and support groups to bring it all together. We can't do it without your help. Say "yes" and be counted!

Repeaters made easy — Part 2

Okay! If you remembered what we covered in the February issue, you most likely have a few more questions, right? Let's clear up a few more aspects....

What is Offset?

You may have seen the word "offset" mentioned in the Transmitter section above. So exactly what is a repeater offset you may ask? In order to listen and transmit at the same time, repeaters use two different frequencies. One for its transmit frequency and another for its receive frequency. On the 2 meter ham band these frequencies are 600 kHz (or 600 kilohertz) apart. On other bands, the offsets are different. As a general rule, if the output frequency (transmit) of the repeater is below 147 MHz, then the input frequency (listening) is 600 kilohertz lower. This is referred to as a negative offset. If the output is 147 MHz or above, then the input is 600 kilohertz above. This is referred to as a positive offset. Virtually all ham radios sold today set the offset once you have chosen the operating frequency automatically. Example: If the repeater output is 146.840 MHz. The input, or the frequency the repeater receiver listens on is 146.240 MHz (600 kilohertz below 146.840MHz). If you have your radio tuned to 146.840 MHz, (the repeater's output frequency), when you push the mic button, your radio automatically transmits on 146.240 MHz, 600kHz down from 146.840. When you release the mic button to listen, your radio switches back to 146.840 MHz to listen on the repeater's output frequency. Note: There are exceptions to the rule so check your local repeater listings.

Standard Repeater Input/Output Offsets

Band	Offset
6 meters	1 MHz
2 meters	600 kHz
1.25 meters	1.6 MHz
70 cm	5 MHz
33 cm	12 MHz
23 cm	20 MHz

(Note that input/output offsets are voluntary among local and regional "Frequency Coordination Groups". They are not fixed in stone by the FCC! They are "recommended" offsets for a particular area. Your area may be different. Check with your local repeater operators

Why do Repeaters use an Offset?

Without having an offset between the transmit signal and the receive signal frequency, the repeater would simply hear itself when it was transmitting on the same frequency it was listening on! Therefore, to use a repeater a user must use a different transmit frequency than receive frequency. Your actual transmit frequency is the exact same one that the repeater receiver is listening on. This is a form of duplex, or two frequency operation. It is known as half-duplex as you do not receive and transmit at the same time but normally use the push-to-talk button on your microphone to switch between the two. Cell phones use full duplex so each party can hear the other while the he/she is talking. Even with the offset, the two frequencies are close enough that some isolation is re-

quired. Again, this isolation is done by the Duplexer. So you can see why some repeater components interact with each other and without the basic system components....nothing would work.

What's all those tones about?

What is a PL or CTCSS Tone?

PL, an acronym for Private Line, is Motorola's proprietary name for a communications industry signaling scheme called the Continuous Tone Coded Squelch System, or CTCSS. It is used to prevent a repeater from responding to unwanted signals or interference. Tone Squelch is an electronic means of allowing a repeater to respond only to stations that encode or send the proper tone. In other words, if a repeater is set up to operate only when a PL tone of say, 136.5Hz is heard by its receiver, then it will allow the transmitting station access. If your station, (your mobile, base or hand held) does not transmit the tone that the repeater receiver has been programmed for, when you key up, then the receiver of the repeater does not hear you and will not be usable by your station until you set the proper tone in your radio to be transmitted when you key your mic. Any modern station may be set up to transmit this unique low frequency tone that allows the repeater to operate. If a repeater is "In PL mode" that means it requires a CTCSS tone (PL tone) to activate the repeater. Due to severe congestion of ham repeaters in some areas, most repeaters are "PL'ed".

These repeaters were once called closed repeaters.

TABLE OF COMMON PL TONES (in Hz)

67.0	94.8	131.8	171.3	203.5
69.3	97.4	136.5	173.8	206.5
71.9	100.0	141.3	177.3	210.7
74.4	103.5	146.2	179.9	218.1
77.0	107.2	151.4	183.5	225.7
79.7	110.9	156.7	186.2	229.1
82.5	114.8	159.8	189.9	233.6
85.4	118.8	162.2	192.8	241.8
88.5	123.0	165.5	196.6	250.3
91.5	127.3	167.9	199.5	254.1

What Happens When You Key Your mic?

Let's "key up" a repeater and see what sequence of events are created within the repeater equipment when someone makes a transmission: You set your transceiver controls for the 146.84 "machine" and listen to see if it is in use...nothing heard. You key your mic and throw out your callsign...."This is KE5???" (insert your call sign) listening on the 146.84 machine". Then you release the mic button.

Assuming your station is within range of the repeater....The repeater antenna which is usually very high on a tall building, tower, water tank, or even a mountain top, picked up your signal with its antenna on 146.24 (your transmit frequency set to the standard offset for this part of the 2 meter band of -600kHz, and the repeater's receive frequency) and sent it down the feed line to the duplexer.

From there it was sent to the repeater receiver and converted to an audio signal (just like the sounds coming from your speaker)....sent to the controller (the brains of the repeater), then sent to the repeater transmitter and turned back into a much greater amplified radio signal on 146.84mhz (the output of the repeater)....sent to the duplexer....then thru the feedline to the antenna and out over the air. So your little pip squeak ht running only 1 watt may be increased to 20, 30, 50 or 100 watts or sometimes more using the repeater transmitter and its much higher gain antenna and high location! A mobile, ht or base sta-

tion that happened to be within range and monitoring the ".84' machine heard your transmission on 146.84mhz (the repeater output frequency).

Since radio waves travel at about the speed of light....at the split second that you first keyed your mic, the above events took place and the repeater was receiving your signal on one frequency and re-transmitting your signal on a different frequency at the same time! The mobile station that was listening on the output frequency of the repeater heard your callsign....keyed his mic and came back to you starting the process all over again!

By now you must have some idea of how repeaters work. Plugging in all those parameters into your rig can be daunting. First of all, read your equipment manual very carefully and follow the programming steps to the letter. Programming mega channels of frequencies is time consuming and filled with "mine fields." Buy yourself a program from RT Systems, www.rtsystemsinc.com and you'll breeze through the process in no time at all. No, this is not a paid commercial from RTS, it's just that I had to learn the hard way over and over again. But then, you just may get lucky.

*Basic article written by N4UJW.
Commentary added by KD5KR.*

Why Modern Makers Are Bringing Back Ham Radio

More than a hundred years ago, a few intrepid amateurs began experimenting with a new means of communications known then as "wireless." These proto-hackers — soon to be known as *hams* — for etymologically obscure reasons — began building their own electronics gear, hoping to use it to communicate with others. By the early 1920s, amateur radio operators were talking with and even transmitting images to complete strangers on the other side of the world. By the 1980s, ham radio was in decline. But the spirit of those early tinkerers survived: They were the first makers, who — like the makers of today — built technological gizmos for themselves that they just couldn't buy.

And now, coincident with the rise of the modern maker movement, that decline has reversed. New ham licenses are on the increase, with 35,000 new ones issued just last year. According to FCC records, there are now roughly 800,000 ham radio operators in the United States — more than ever before. And this latest generation of enthusiasts is doing things with ham radio that their forebears could never have imagined.

DIY: Old and new

Some of today's hams are in it for the original reason: to talk to people around the world via shortwave radio. But many get involved so they can incorporate wireless capabilities into their projects. One reason is that an FCC license allows you to build and legally operate your own high-powered wireless equipment. Ham radio operators are allowed to design, build, test, and operate wireless projects across a vast range of frequencies. They are able to, among other things, hack together Wi-Fi routers that can operate

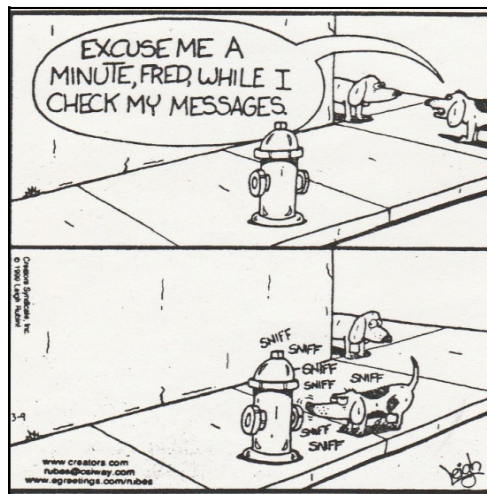
over longer distances and use more power than standard, commercial Wi-Fi. Adding amateur radio technology to their projects opens up whole new vistas for today's DIYers. "It blows me away what can be done, and for cheap," says maker-blogger Rich Holoch, who experiments with microcontrollers and projects based on Arduino and Raspberry Pi devices. "It opens up the whole matrix of what you can do." "It's amazing all the things that are out there that you can do with ham radio," concurs Christine Axsmith, president of HacDC Radio Club, part of HacDC, a Washington, D.C.-area maker group. "But with Raspberry Pi, it just blew the lid off." HacDCers are working on projects that include microwave networking and remotely controlled 3D printing — all using wireless radio technology.

Dennis Kidder came to that ham-maker nexus from the other direction. A longtime ham radio operator, he was unprepared for what he found when he went to his first maker faire in San Mateo a few years ago. "We were overwhelmed with the DIY electronics and the robotics," he says. He was so energized by the experience that he helped write (with Jack Purdum) a book on the subject, *Arduino Projects for Amateur Radio*.

Putting ham radio to good use

One thing a lot of these maker-hams talk about is the potential use of their hobby for public service. "Our team is working on a project to turn any cellphone into a shortwave radio," Axsmith says, explaining that once the work is done, it could be used to help provide communications in developing areas. Other makers are contributing their skills to the American Radio Relay League's (ARRL) National Parks on the Air event, in which ham radio operators try to raise awareness about national parks and the work done by the National Park Service. Others are developing new emergency communications networks as backups for when cell service disappears. Some maker spaces now offer ham radio activities. A few, like HacDC, have their own radio shacks and experimental equipment and offer ham radio license classes.

Meanwhile, ARRL is ramping up its efforts to spread the word about ham radio in the maker community. "We support a lot of ham radio operators who go to maker faires," says Bob Inderbitzen, ARRL's sales and marketing manager. The combination of ham radio and the maker movement could even help the former shed its amateur status. Inderbitzen says familiarity with both could be a real plus when it comes to getting hired as an engineer. Hands-on experience with radio frequency engineering is extremely valuable these days but also hard to find. He says he's seeing "a significant boost in employment opportunities" for hams who know how to make stuff.



How to be an expert in anything!

An interview by Cliff Ransom of Popular Science magazine with Neil deGrasse Tyson, director of Hayden Planetarium. You'd probably seen Neil on the Science channel of cable TV. He can't help but make an impression on you. His advice applies to most anything we do in life, even in amateur radio communications. Some of us are well past the phase in our life where we concern ourselves of what we plan on accomplishing, but still, there is room for "tidying up the goals of our senior years. Hey, there's always time to clean up you intellectual act...."

To be an expert means you are on the frontier making discoveries, thinking thoughts never before dreamed of. I'm an expert in astrophysics. I don't generally share opinions. It may not feel that way because I speak passionately about what I know. I hardly ever express opinions because I don't care if you have them. I don't care a rat's ass. As an educator and as a scientist, I care only that you are scientifically literate.

Don't come to me to debate whether climate change exists. If you're coming to me in that fashion, you do not understand how and why science works. You're expressing an opinion and I'm expressing a fact.

Successful people are driven without regard to their social life, love life, the opinions of others. Every one of them has a story saying, "Here's a list of people who said I should do something else."

To be a genius is to be misunderstood, but to be misunderstood is not necessarily to be genius.

It's not that we fear technology, it's that we occasionally take it for granted, and when we do, we discount the brilliance and work that went into it. You'll say, "Oh, we don't need to increase the funding on science, I've got my smartphone. We don't need to go into space, I've got weather.com" Well, where the hell do you think you got the image of the hurricane that just tore up Galveston. Texas?

If you want a career in science & technology, well, you better hang out with some geeks. Go ahead. They are the friendly people. They're not talking about the clothing you are wearing. They're not talking about your waistline. It's just. "Who are you and do you have interesting things to say?"

No matter what you do, you need to be able to fail and know how to recover from it in order to one day succeed. There is no successful person who has never failed. Think of the lessons you learn every time you fail. It's the people who ignore those lessons who basically check out of that contest permanently.

The fastest way to end a career in science & technology is if you're guilty of fraud. No one will listen to anything you publish thereafter. The greatest statement you can make to a scientist is to pay attention to his or her science.

When you're first in the world to know something, there's nothing like it. There's no salary, there's no car you can drive to substitute for that feeling!

"Nuff said!"

"Frequency" TV Series Now Planned for The CW Network

The buzz from Hollywood is that a TV series based on the 2000 movie "Frequency" is in development and -- appropriately enough for a show featuring ham radio -- on The CW network. Amateur Radio served as a plot device in the movie and will play the same role in the TV series.

In November 2014, *The Hollywood Reporter* indicated that NBC had committed to a "Frequency" series, but those plans apparently fell by the wayside. Now, The CW has ordered a pilot episode of "Frequency," and, if the network does go forward with the project, the modern-day version of "Frequency," the TV series, would feature a young female police detective named Raimy, who uses ham radio to communicate through time with her deceased father.

Actress Peyton List is said to have landed to role of Raimy, reprising Jim Caviezel's movie character. Riley Smith would play her father.

When the original "Frequency" movie debuted, the ham radio theme and the chance to see vintage ham gear and real, glowing vacuum tubes on the big screen generated considerable interest within the community of "boatanchor" enthusiasts. ARRL worked with the film's producers.

ARRL News

List of US House Amateur Radio Parity Act Cosponsors Continues to Grow:



Three more members of the US House of Representatives have stepped forward to cosponsor The Amateur Radio Parity Act, H.R. 1301. That brings the total to 123. The latest to sign on are Reps Evan Jenkins (R-WV), Stephen Knight (R-CA), and Charles Boustany Jr (R-LA). In a voice vote on

February 11, the US House Subcommittee on Communications and Technology, chaired by Rep Greg Walden, W7EQI, sent H.R. 1301 to the full House Energy and Commerce Committee with a favorable report for further consideration. More information on The Amateur Radio Parity Act is on the ARRL website.

Welcome, Congratulations and Condolences

Welcome new members,
Stuart Spreen, & Lance Clarke KB5UC
We note with regret the passing of a fine person, Cal White WF5W

NARS Resource list

General help:

Allen Majeski WA5REJ
281 528-0673 wa5rej@yahoo.com

Deral Kent K5WNO
281 548-7476 k5wno@juno.com

Al Manard N6VQO
281 292-3113 almanard@gmail.com

Digital modes:

Marty Fitzgerald W5MF
281 251-4301 fitz6@swball.net

VHF/UHF:

Brian Derx N5BA
281 251-4301

PC Programming & Ops:

Keith Dutson NM5G
281 516-1466 keith1@dutson.net

Building Electronics & kits:

Mark Tyler K5GQ
281 587-0256 k5gq@juno.com

Interference (Basic advice):

Terry Myers KQ5U
281 443-6042 tmyers1031@sbcglobal.net

Card checking for awards:

Bob Walworth N5ET—DXCC
281 292-2221 rwalworth@charter.net

Brian Derx N5BA—WAS, VUCC
281 894-5942

Bob Walworth N5ET—WAZ
281 292-2221 rwalworth@charter.net

NARS Public Info. Officer

Joe Sokolowski KD5KR
281 353-2196 kd5kr@arrl.net

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Deral Kent K5WNO
281 548-7476
k5wno@juno.com

Mike Bowen N8ILU
mike5664g@yahoo.com

Administrative & General Info.

Joe Sokolowski KD5KR
281 353-2196
kd5kr@arrl.net

Send changes in address, phone, or email to:

NARS
P.O. Box 90387
Houston, TX 77290-0387

Nets

2 meter Wed. 8 pm. 146.760, tone 103.5
Coordinator: Jerry Whiting KB5VGD
g_whiting@sbcglobal.net

Web site

URL: <http://www.w5nc.net>
Web Master: Bill Buoy N5BIA
281 370-3510 n5bia@arrl.net

NARS Reflector

NARS@mailman.qth.net
Coordinator: Keith Dutson NM5G
281 516-1466 keith1@dutson.net

Texas QSO Party

Co-coordinator: Chuck Sanders NO5W
832 657-4832
no5w.chuck@gmail.com

Co-coordinator: Keith Dutson NM5G
281 516-1466 keith1@dutson.net

VE Session (ARRL) Manager

Keith Dutson NM5G
281 516-1466 keith1@dutson.net

Meetings

Monthly General Membership 3rd. Friday
each month (except January) at 7:30 pm.
Cypress Creek Christian Community Ctr.
6823 Cypresswood Drive

Saturday Breakfast

Denny's 6504 FM 2920, Spring
(Just a few blocks west of Kuykendahl)

Wednesday Lunch-11 am.

Various places. Info on front page.

NARS News is published monthly by the Northwest Amateur Radio Society. Send all articles and materials for the newsletter to:
Editor, Joe Sokolowski KD5KR, 281 353-2196 kd5kr@arrl.net Deadline for articles to appear in the next newsletter is the last day of
each month.

Northwest Amateur Radio Society is a Special Services Club affiliated with the American Radio Relay League, ARRL Club No. 2120.