Eastern Iowa DX Association

An ARRL affiliated club - Established 1975

In this issue

January 2018

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- ...another team going to Bouvet?

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President's Propagation, Pontifications and Prognostics

Joe Hungate
K8OM

I hope all EIDXA members and their families are having a very Merry Christmas and a Happy New Year!

Hopefully Santa brought you all of the new transceivers, amplifiers, antennas and station accessories you could possibly hope for to help you work the excellent DXpeditions coming up in 2018. 3YØZ(#2), KH1/KH7Z(#4), VP6DX(#27), 6O6O(#54) and 3B7A(#39) are

Logbook

CQ Test

- Contesting by Rick

QRM

- Mary Loomis - A short history
- 50 ohms: The forgotten impedance
- New ham survey
- QST: W1AW on 6m

Club Officers:

President:
Joe Hungate K8OM

Vice President:
Rick Hadley WØFG

Secretary:
David Christ KØLUM

Treasurer:
Mike Nowack NA9Q

Repeater Committee:
Jason Joens NRØX

Membership Committee:
Jim Spencer WØSR
Tom Vavra WB8ZRL
Nelson Moyer KUØA

Packet Cluster: WB8ZRL 147.51, 144.91, WB8ZRL.no-ip.org:7300

Repeater: NØDX/R
144.59 / 145.19 (tone 192.8)

www.EIDXA.org

Web Master:
Craig Fastenow KØCF

just a few that will be on the air in 2018 operating most bands and modes.

It's wonderful that the ham radio equipment and operating modes we have today provide us the opportunity to work worldwide DX even during minimum sunspot activity with modest stations and transmitter power. Twenty meters may not be open worldwide 24/7 but there is DX to be worked if you dig deep enough and try some of the new digital modes.

Speaking of the new digital modes, Bob – WØGXA has published observations from several hams in this edition of the newsletter pertaining to the new FT8 digital mode. It certainly isn't an operating mode for everyone but for those that have compromised antennas and equipment on some of the bands this new operating mode may be what the doctor ordered. FT8 has allowed me to close in on 160 meter DXCC with my inverted L antenna that sometimes radiates only slightly better than a dummy load. Stations that are ESP at best on CW are easily worked on FT8 even from my standard city lot. I, for one, am sold on these new digital modes. Give them an honest, objective try and see what you think.

Enjoy this issue of the EIDXA newsletter. As usual, Bob – WØGXA has done a wonderful job pulling it together and a big thank you to everyone that has submitted articles!

Newsletter Editor:
Bob Lee WØGXA
rclee2266@gmail.com

Facebook EIDXA

Hope to see everyone at the January 19 club meeting at the Hall-Perrine Cancer Center in Cedar Rapids. Rick – NØYY will be providing the after meeting program on new transceiver technologies. This should be a very interesting and educational program so please don't miss it!

73,
Joe – K8OM

Musings from the lunatic fringe

Bob WØGXA

Ready or not...

Bouvet is about to start

I don't know about you guys but I'll be glad when it's over. Anticipating this for so long is fatiguing. I know you join me in wishing all of the team a safe trip.

If you are so inclined, you might consider another donation to 3YØZ. Helicopter time will be expensive but key to putting on a quality operation. More information can be found here.

Thanks again to everyone for all the good content. I'm really enjoying the Jurassic Journal that Tom tirelessly assembles for each issue. It's fun to read about all the DX I missed while life was getting in the way of the hobby.

Happy New Year

One final comment: Like the prior editions of the newsletter, there is a lot of content, so...

Be sure to check with your doctor to make sure you're healthy enough for so

much reading

Club News and Administrative Items

Don't forget to pay your dues!

Mike would be grateful!

Minutes of the EIDXA meeting October 20, 2017

Joe K8OM called the meeting to order at 7:30 PM

The 39 people in attendance gave their call and location.

Members were reminded to pay their dues to Mike NA9Q

Mercy security requests that we use the NE door for entry and exit

The minutes of the July meeting were approved without objection.

Bob WØGXA was thanked and applauded for the latest newsletter. Eighty-eight pages this issue. Bob said it is easy when members submit stories... *so keep those cards and letters coming - Ed.*

Rich W3ACO presented the treasurer's report. It was accepted without objection.

Rich noted that the new fiscal year started October 1.

Rich was thanked for his 9 years of excellent and faithful service.

Joe K8OM reviewed the rules for the use of the Tom Hise fund: For every dollar from general funds, up to two dollars from the Hise fund can be used, capped at $1000 per fiscal year.

Upcoming major DXpedions requesting funding are

	3Y0Z	9U4M	9M0W	3B7?	VK9MA	KH1B	CE0X
Pts	140	70	70	85	85	120	110
Rank	2	67	136	39	28	4	6
ATNO		7	11	12	10	14	13

After much discussion consensus was that we should fund KH1B first but as it was early in the fiscal year we should not use too much of the Hise fund so soon. It was pointed out that if desired additional Hise funds could be used to increase the match later.

Moved by Rich W3ACO seconded by Tom WB8ZRL to donate $250 general $250 Hise funds to KH1B. Unanmous approval.

Membership certificate presented to Wyatt ACØRA

One membership application pending: Matt KØKB (WØMLD)

Tom WB8ZRL reports DX cluster has been up for 19 months

Craig KØCF continues to post DX news Sundays on the website. Lots of good equipment in the buy and sell section. Joe K8OM suggested that perhaps a new feature on the website could be having a members picture displayed when their call is clicked on. Given the lack of interest, the matter was dropped.

Al KØVM reports repeater continues to function

NRØX reports no further progress yet on Echo Link

WØMJN after two weeks in the hospital has now been home for 10 days. Is on the mend and hopes to finally get on the repeater tomorrow.

Elections:

A proposed slate of officers for the coming year is

Joe K8OM President
Rick WØFG Vice-President
David KØLUM Secretary
Mike NA9Q Treasurer

Jim WØSR moved nominations cease Tom WB8ZRL seconded. Passed

David KØLUM moved slate be accepted by acclimation. Nelson KUØA seconded. Passed

<u>Standing Committees for 2018:</u>
Membership Committee

Jim – WØSR, Tom – WB8ZRL, Nelson – KUØA

Treasury Audit Committee
Tom – WB8ZRL, Rick – NØYY, Bob – WØGXA

DXpedition Funding Committee
Terry – WØAWL, Glenn – WØGJ, Joe – K8OM

Repeater Committee
Jason – NRØX and one to be appointed (replacing WØMJN and KØVM)

Newsletter Editor-in-Chief
Bob – WØGXA

Webmaster
Craig – KØCF

Meeting adjourned at 8:05 PM followed by an excellent program.

"Planning a Mega-Dxpedition" Glenn – WØGJ / 3YØZ

Meeting Reminder

January 19, 2018

Hall-Perrine Cancer Center
Mercy Medical Center
Cedar Rapids, IA
(location)

Social Hour 6:30 PM
Meeting & Program 7:30 PM

Program: Radio Technology - Rick NØYY

Card Checkers

We have three club members who can check your QSL cards

- Tom, WB8ZRL
- Glenn, WØGJ
- Mike, NA9Q

Contact info can be found here: http://www.arrl.org/dxcc-card-checker-search

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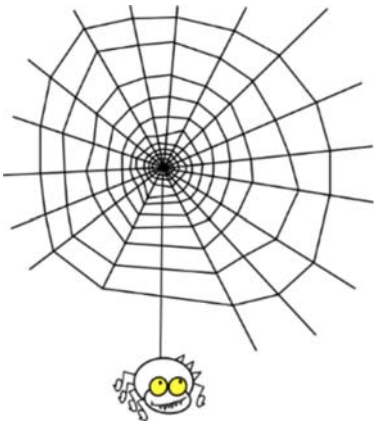
Member Spotlight



Nothing to report this month. If you haven't been featured in the newsletter, let me know. We'd love to do a story.

DX News

Bouvet 2018

Are you ready?

There ain't nothing to say that ain't been said

Apparently the 3YØZ team won't be the only people on the island.... I hope they don't run into parking problems.

Local paramedic joins expedition to one of Earth's remotest spots

A Pietermaritzburg (South Africa) paramedic is joining a daring expedition to an island so remote that more people have been in outer space than set foot there.

ER24 advanced life support paramedic Tristan Manning leaves for Bouvet Island in the South Atlantic Ocean on December 7 as the expedition team's medic, with two marine mammal experts and a marine bird masters student making up the team of intrepid explorers.

The Norwegian Polar Institute sends four people to the island once every three years to do research on marine mammals.

Ninety-three percent of the 49-square kilometre island is covered by a glacier.

"Our only access is through a beach 300 metres wide and two kilometres in length and we will be sharing this space with up to 40 000 animals including elephant seals, fur seals, various penguins and sea bird species," said Manning.

“The island is completely uninhabited. The previous research station there disappeared and another station was installed in 2014.

“Nobody has been to the island in three years so although we know the station is still standing, we don’t know if it will be habitable or not.

“Although it is an extinct volcanic island, tectonic changes take place often and the island is slammed by storms 300 days out of the year because of its placement.”

Manning, who has been a paramedic for 17 years and an advanced life support paramedic for two-and-a-half years, said he first heard about the expedition from a post on a Facebook medical group.

“It said they were looking for South African paramedics. I applied and was shortlisted to the top five.”

He said the other four paramedics who applied were from Cape Town. He came up trumps and was selected as the expedition team’s medic.

He said his selection also meant he was being afforded the opportunity to expand and diversify his skills as a paramedic.

“I want to specialise in expedition medicine on remote sites and this will be the first proper remote place I will work in.”

Manning and the research team will travel for seven days by boat, weather permitting, and once they reach the island they will be flown in onto the beach as it is too rocky and steep and the waves too tumultuous for a boat.

They will spend two-and-a-half months there.

He said he felt confident in his skills and had been to other fairly remote places in Iraq and various African countries. “I am very excited. This is the equivalent of going to space. It is the chance of a lifetime.”

Source: www.news24.com

Feature Articles

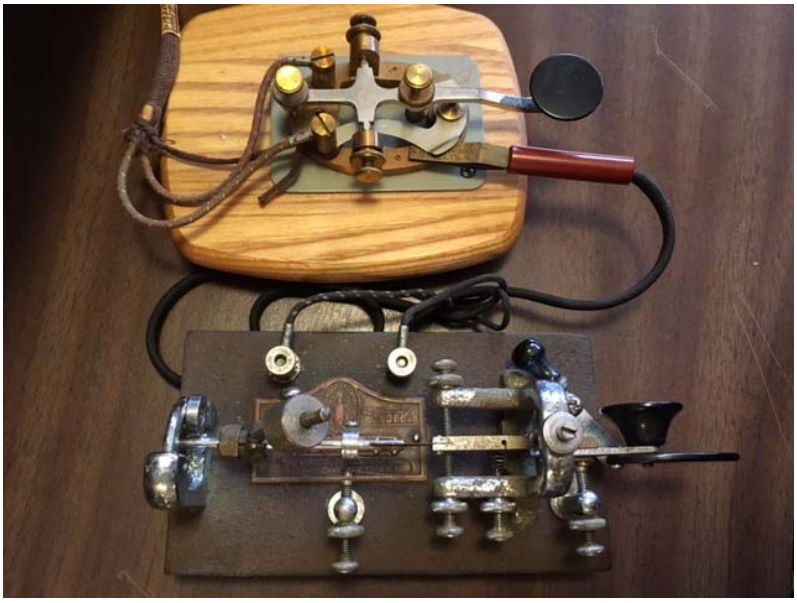
"An Iowan and his Vibroplex"
A brief history

by Jim Livengood WØNB

Bob Denniston, WØNWX, of Newton, Iowa was arguably one of the very

best CW operators of his era, although he told me that he considered Vic Clark, W4KFC and Don Wallace, W6AM to be better. Certainly there were others, but these three were buddies. They were well acquainted through on-the-air CW message handling through the ARRL National Traffic System and other League activities, contesting, and very long QSO's.

Bob was a ham for many years before the arrival of single-paddle or iambic CW keyers, or todays "in-the-rig" keyers which feature a convenient Speed Control by way of an up-front Knob or push buttons.



The J-38 (WW2 - Bunnell Navy Key) was often paired with a Vibroplex or other mechanical speed key to switch from fast to slower CW. Denniston used this key at FO8AJ, Clipperton Island, 1955.

Even though most traffic handlers of the day were proficient at higher speeds, there were many circumstances where it was wise to slow down. A straight key alongside the Bug was often an option, but a seasoned traffic handler with a long traffic list, preferred his mechanical speed key. Bob, Vic and Don preferred the Vibroplex.

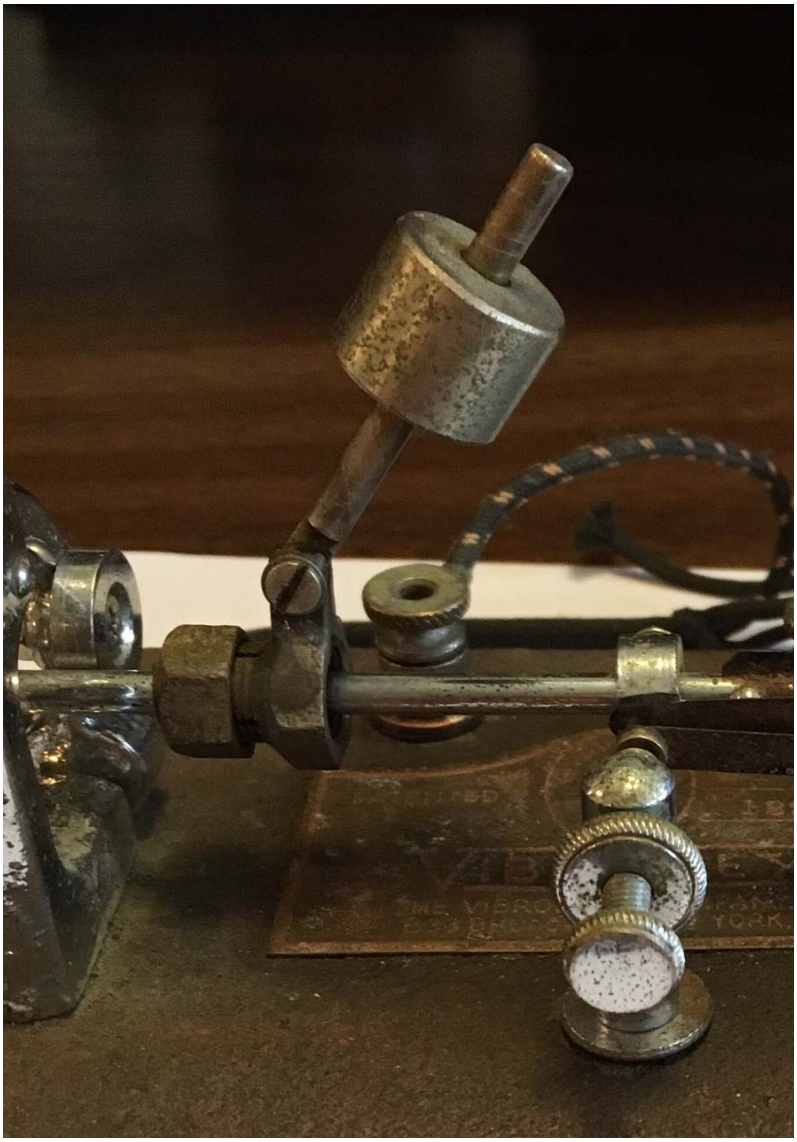
The Challenge: To change speed on a factory-Vibroplex, one must loosen the thumbscrew on the speed weight which can then be moved along the pendulum to adjust the speed of the dots. Dashes are done manually with the thumb, and do not require an adjustment. This is a cumbersome chore for some, and it became a real frustration for Denniston. Consequently, it was discussed at length by the three friends on the air.

After experimenting with the sliding weights with rubber washers or very short pieces of rubber or plastic hoses to fasten the weights, Denniston came up with the idea that was adopted by the trio.

Bob Denniston's 1955 Vibroplex Standard - modified with his Vertical Pendulum.

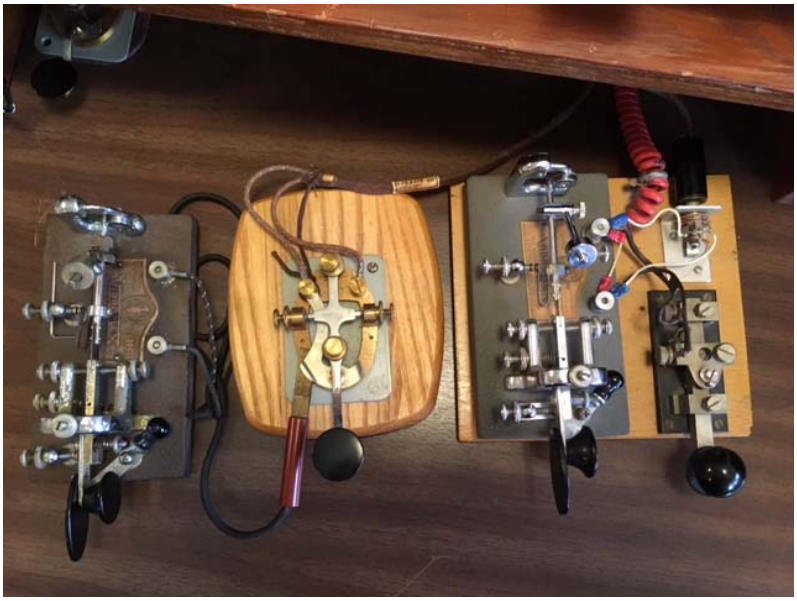
Visiting the hardware department at the family's Denniston Lumber Company in Newton, Iowa, Bob came up with the concept of adjusting the "length of pendulum" by attaching another weight to a separate pendulum attached nearly vertical to the existing bug pendulum. He found off-the-shelf parts and modified them to attach the new adjustable pendulum to the original pendulum.

Bending the upper pendulum forward to slow the dots, or back toward the operator for faster dots yielded a convenient range of speed from around 5wpm and up. It took some experimentation to determine distances and a suitable weight, which was solved by removing the factory-weight from the horizontal pendulum, and placing it on the new vertical piece.



A paint sprayer nozzle with compression fitting - drilled to fit the standard pendulum. A swivel soldered to the fitting adjusts the angle of the new vertical pendulum made with scrap and the original Vibroplex weight

Bob explained that over the years, a number of CW operators adapted the design to their own keys. But it was nearly a half century later that Vibroplex came up with their own variation on the design which you can now purchase as a kit for under $40 on their website. I sometimes have the Denniston Original alongside the Vibroplex Kit side by side on my operating desk. They both work well. However, I believe the Denniston original – while not nearly as pretty - is easier to adjust.



My 1956 Vibroplex Standard (right with red cord) shows the Vibroplex factory "Vari-speed Kit". Bob's key (left side) with his ingenious original speed adjuster, 50 years earlier

Some of Bob's observations for CW operators: In 1998 I asked Bob the question: "Do you think CW operating is better now, or worse?"

…at VP1JH (Now Belize) I was tuning across the band and heard W4KFC's fist. I knew it was his fist long before he signed. He was on KS4 (Swan I).

It's harder now to tell who you are talking to by listening to CW. When I listen across the bands now, there is a lot of good Morse code on the air. Part of it is that since most people now have keyers, it's harder to mess up. The other thing is that people are listening to good code now. It helps them do better code themselves.

A higher percentage of code now is better than it used to be. Some guys that had a problem with a bug had trouble with a keyer, too. A keyboard is doing it perfectly, and they hear that. But, I miss hearing the unique and familiar "fists".

A couple more sayings: *"CW is the first digital mode.",* and: *"Any damned fool can talk with his mouth."*

Original Operator
Original Key
Original Rig
From 1948 - VP7NG Gon Waki #1 and 1998 - VP2VI 50th Anniversary

Brief bio: Licensed in high school in 1933 in Newton, Ia. W9NWX. Attended Iowa State College (Electrical Engineering) and then Stanford (Business).

First job: US Army-Pentagon communications station WAR 4 years, then 4 more at WAR as civilian employee. Personal radio operator for Roosevelt and Truman when they traveled aboard train or plane. At WAR, met and married Nell, a crack WAC CW operator.

In 1948 “Gon Waki” VP7NG, Denniston--then W4NNN—credited as “father of the modern dxpedition”.

In 1998 Celebrated 50th Anniversary of Gon-Waki from VP2VI.

Other firsts: 1954 Clipperton-FO8AJ. 1964 Malpelo-HK0TU.

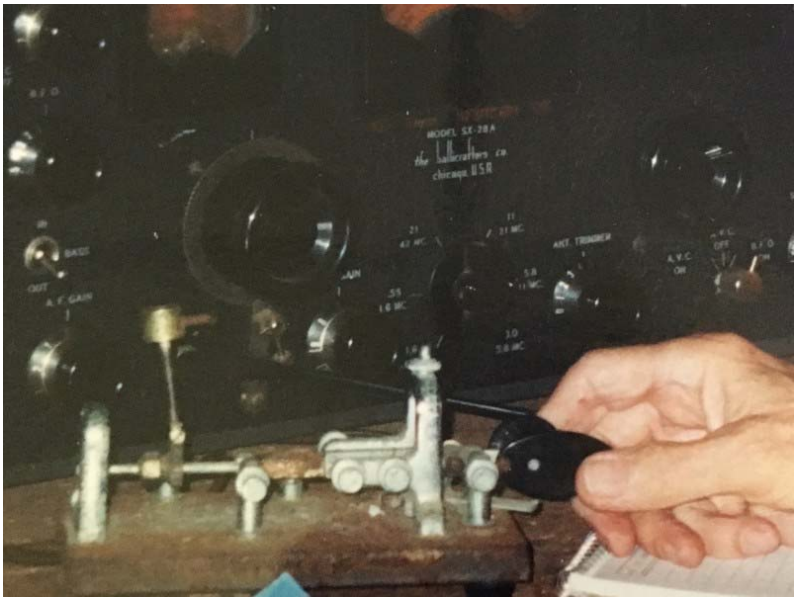
In Iowa- WØNWX, then WØDX.

Business-CEO Denniston-Partridge Lumber Yards in the Midwest.

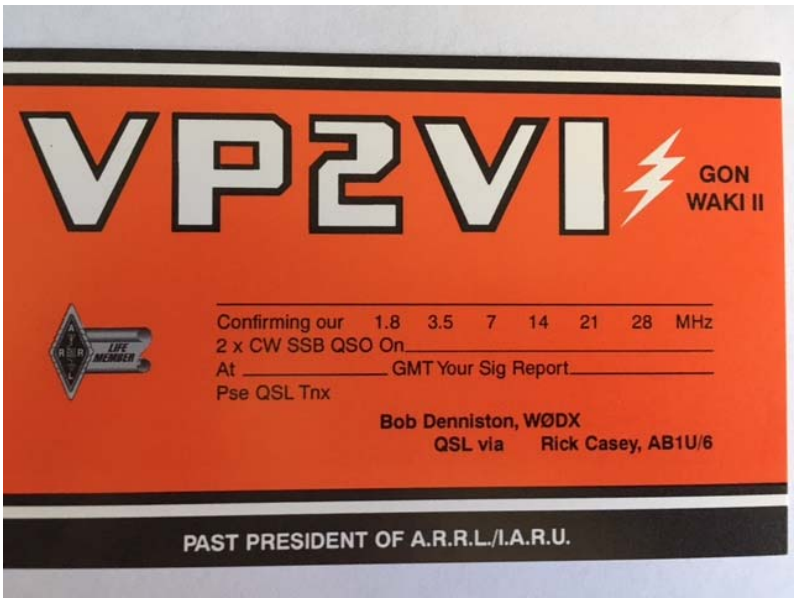
Owner: Smugglers Cove Hotel, BVI, QTH of VP2VI: source of nightly code practice sessions, followed by long CW rag chews on 160 meters.

ARRL President 1966-72. He was a major force leading efforts to establish a functioning IARU and WARC leading to the establishment of 30-17-and 12 meter bands.

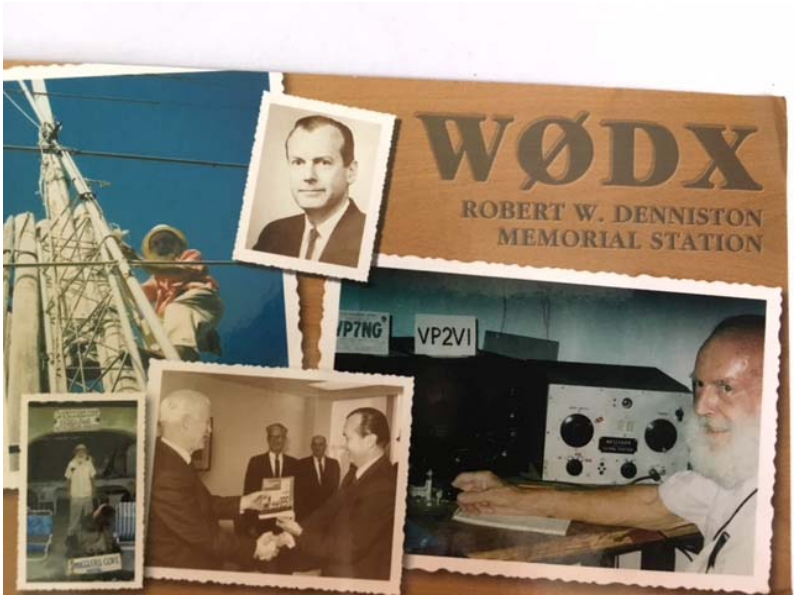
He died in his sleep on his beach, sometime overnight, May 12 or 13, 2002.



The Key and The Fist



ARRL provided these QSL's for the Gon Waki 50th



WØDX Memorial Station QSL

On a personal note: Bob was the first ham I ever met and his was the first hamshack I ever saw. I was 13 year old and lived in Burlington. We were visiting relatives in Newton in the summer 1954 when an uncle, who was a former school chum of Bob, introduced us. By 1956 I was KNØAAH. I would occasionally encounter WØNWX on the TLCN (Tall Corn CW Net serving Iowa) and never saw him again until a chance encounter sailing in 1991. Upon my retirement we became next-island neighbors and close friends until his death. We claim the record for the longest wig-wag visual QSO between the US and British Virgin Islands. No Proof. Just Fact!

US Navy tests signal lamp-based ship-to-ship texting

https://newatlas.com/us-navy-signal-lamps-fltc-texting/50523/

Sailors aboard the guided-missile cruiser USS Monterey (CG 61) communicate with the guided-missile destroyer USS Stout (DDG 55) during a test of the Flashing Light to Text Converter (FLTC)

(Credit: U.S. Navy photo by John F. Williams/Released)

The US Navy has brought signal lamp ship-to-ship communications into the texting age. In a recent test, the guided-missile destroyer USS Stout flashed a message in fast light bursts across 250 ft (76 m) of water to the guided-missile cruiser USS Monterey tied up at a pier at Naval Station Norfolk, Virginia. It did this using a signal lamp retrofitted with the Flashing Light to Text Converter (FLTC) system, which allows sailors who aren't experts in Morse code to quickly send and receive messages.

The dramatic clack and flash of the signal lamp may seem like some arcane practice only appearing in old war movies and newsreels, but the simple device for sending Morse code messages using a search lamp fitted with shutters is still very much in use by navies all over the world. True, it's a very simple, low-tech system, which is why it's survived for so long.

In an age of sophisticated digital radio systems that can stream gigabytes of data in a matter of seconds, the signal or Aldis lamp has the advantages of simplicty. It can't be jammed, it can't be tapped into, it works if the main power supply or satellite communications are knocked out, and it can be used for ship-to-ship communications even under the strictest of radio silence conditions.

The problem is that sending messages by signal lamp is slow. Worse, it depends on being proficient in Morse code and that's a problem in a modern world where Morse is almost never used in either naval or civilian circles. This means that lamp operators need to be specially trained and it's very hard to achieve the right speed and accuracy in sending and receiving.

Chief Quartermaster Gregory Flowers from the guided-missile destroyer USS Stout (DDG 55) types a message during a demonstration of the Flashing Light to Text Converter (FLTC) (Credit: U.S. Navy photo by John F. Williams/Released)

Developed under the sponsorship of the Office of Naval Research's (ONR)

TechSolutions program, the FLTC system is designed to overcome these problems in the form of an upgrade package that can be retrofitted to the back of any standard signal lamp.

The system is still in prototype form and consists of either step motors to operate the lamp shutters or LEDs that replace the usual incandescent bulbs, while at the other end a GoPro camera captures Morse code flashes from the other ship. In between sits a proprietary converter in the form of a handheld device or a laptop that runs specialized software algorithms. These convert messages tapped out on the screen into Morse code that is flashed from the lamp, or converts received Morse code falshes back into text messages that are displayed onscreen.

This makes it possible for anyone to send and receive signals without knowing anything about Morse code, while allowing a more traditional signalman to communicate with them without difficulty.

In recent tests, Scott Lowery, an engineer at Naval Surface Warfare Center (NSWC) Panama City, Florida was taken a bit too literally.

"I asked them to text me something random, so they signaled the word 'random," says Lowery. "Simple, but it shows the system is working."

First developed in 2015 by ONR's rapid-response TechSolutions program and Creative MicroSystems Corp, FLTC will be delivered to the Naval Surface and Mine Warfighting Development Center (SMWDC) later this year for testing and evaluation. The hope is that a standard retrofit kit will be issued throughout the US fleet next year.

"The best part of this flashing light converter is how easy it is for Sailors to use," says Lowery. "It's very intuitive because it mirrors the messaging systems used on iPhones. You just type your message and send it with the push of a button."

I wonder how this new mode would work on a light bulb antenna? - Ed.

Jurassic Journal

- A look back in time -

Tom Vavra WB8ZRL

Twenty years ago, the winter of 1998

The second log entry for 1998 was W4NIM, Bob Hill, aboard his boat DX Bound moored in Florida. Bob hosted the EIDXA repeater until he retired and embarked on his dream of living on his boat and sailing the Caribbean to work the DXers from the various islands. Family medical problems kept him from realizing his dream. Bob is now a Silent Key.

T31

Norbert, DF6FK was active as T31BB from Canton Island, Central Kiribati. His wife Judith signed T31BA.

RX10X/fjl caused some excitement. Presumably from Franz Josef Land, he never bothered to tell us his name was Slim.

XW

Eric, SMØAGD, was once again active from Laos as XW3Ø. In 1979 when much of Southeast Asia was still in armed conflict, operations from XU, XV and XW were very rare. SMØAGD/XW was an exception. I remember listening to him on 15m CW. Being the owner of a recent Advanced class license, I decided to wait for him to operate on SSB. He never did. It took me 10 years to finally put XW in the log and atone for my mistake.

8Q7AA

The Central Arizona DX Association put on an 8Q7AA operation from the Maldives. Emphasizing 160, 80, and 15 meters, they netted 16K QSOs. The 8Q7AA team consisted of Oscar Resto KP4RF, Sally Brown-Martínez KM5EP, Bruce Sawyer N6NT, Darryl Hazelgren AF7O, Warren Hill K7WX, Rich Chatelain K7ZV, Dan Brown NA7DB, Steve Thompson N7TX and Paul Playford W8AEF.

VK9NS

Often found on the bands, Jim Smith continued to draw a pileup from Norfolk Island.

R1ANL

This Antarctica station was quite active.

KH5

An operation from Palmyra with Mark, KA4IST signed KA4IST/KH5. He was later joined by N4BQW, N4DAZ, K4AU, NH6UY and WA4FFW. N4BQW/KH5K went to Kingman Reef where he logged more than 1,000 QSOs (the majority on 20 meters SSB) in about 24 hours. He was then picked up by the rest of the KH5 crew and went to KH1.

VP8
Hector, LU6UO and Ernie, LU4AXV, signed LU1ZC from the South Shetlands for about 3 weeks. They were active in the ARRL DX CW Contest.

9G
PA3AWW, PA3DEW and PA3FQX were active (on all bands, CW and SSB) from Ghana as 9G1AA between 4 and 25 February.

C9
Franco, I4LCK planned to be active again from several locations in Mozambique. A cholera epidemic forced him to alter his C91LCK/p schedule. He logged 10895 QSOs (5145 on CW and 5750 on SSB) during his 13-day trip.

1S
9M0C was activated by the Chiltern DX Group. Two weeks of operations resulted in 65K QSOs.

Band	PH	CW	RTTY	FM	Total	Total %
160	1	1148	0	0	1149	1.8%
80	1420	2830	0	0	4250	6.5%
40	4312	6554	0	0	10866	16.6%
30	0	5710	0	0	5710	8.7%
20	7520	4626	1184	0	13330	20.3%
17	2995	3559	56	0	6610	10.1%
15	7283	4527	764	1	12575	19.2%
12	2575	3018	0	0	5593	8.5%
10	2632	2046	68	294	5040	7.7%
6	127	261	0	0	388	0.6%
Totals						
	28865	34279	2072	295	65511	

Pacific OK1TN, OK1KT and OK1VD visited 5 different Pacific countries signing FOØ/OK1TN, FOØ/OK1TN, FOØ/OK1VD, ZK1TNN, ZK1KTT, A35TK, A35TN, 5WØSZ, 5WØVV, 3D2KT and 3D2TN.

ZL7
A team of seven German ops activated ZL7DK from Chatham Island for two weeks, putting 31,352 QSOs into their log.

KH9
N2OO, N2WB, N6MZ and K8XP signed /KH9 for eleven days.

TJ
Bob Ferrero, W6RJ and his son Bob Jr., W6KR were active as TJ1GB from Cameroon for two weeks. They were on safari during daylight and on the air during darkness, concentrating on 160 meters and the low bands.

Ten years ago, the winter of 2008

Propagation was much like it is today. During the quarter the Solar Flux ranged between 68 and 89. The A-index ranged from 1 to 29.

JD1
JD1BMH on 80 cw was the first log entry to start 2008.

FJ
Yuichi, JR2KDN and Paul, F6EXV activated TO5FJ from the newest DXCC Entity, Saint-Barthelemy on 6-20 January. With the help and support of FJ5DX, FJ5AB and FJ5KH, they operated SSB, CW and RTTY on 10-160 metres making 15,411 Qs.

J5
J5C was a dxpedition of 16 Mostly French operators. Almost 62K Qs went into the logs. Mostly CW, SSB and digital, with a handful of SSTV and FM contacts thrown in.

PJ2
Reknowned DXer NØYY was logged warming up for the ARRL DX contest signing portable PJ2 from Signal Point. He was simplex, practicing contest conditions, to the exasperation of those trying to work him. *Rick is the master at causing exasperation - Ed.*

TI9
An international crew of 12 (including K9CT) put TI9KK on the air. Only 17K Qs but their operation was probably cut short.

VP6
VP6DX on Ducie Island was very active. The team of DL3DXX, DL6FBL, DL6LAU, DL8LAS, ES5TV, K3NA, N5IA, RA3AUU, SP3DOI, SP5XVY, SV1JG, UA3AB and WA6CDR was active for 16 days. Their 183K Qs filled many band/mode needs:

Band	PH	CW	RTTY	Total	Total %
160	1574	5093	0	6667	3.6%
80	8587	9750	0	18337	10.0%
40	14933	14480	0	29413	16.0%
30	0	10570	3690	14260	7.8%
20	17204	12845	3476	33525	18.3%
17	16591	11805	3071	31467	17.1%
15	15523	12358	0	27881	15.2%
12	7212	6038	0	13250	7.2%
10	4489	4295	0	8784	4.8%
Totals	86113	87234	10237	183584	

FO
X5C went QRT from Clipperton on 15 March around 14.40 UTC. The team made 71,794 QSOs in 156 hours.

9X
9XØR was active from Rwanda in March. A large group of operators (namely Roberto/EA2RY, Gerard/EA3EXV, Manuel/EA4DRV, Ruben/EA5BZ, Javi/EA5KM, Toni/EA5RM, Manuel/EA7AJR, Javi/EC4DX, Bernard/F9IE, Gianfranco/IØZY, Massimo/I8NHJ, Fabrizio/IN3ZNR and Dimitri/UY7CW) had three stations on different bands and modes.

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sor·cer·y

ˈsôrs(ə)rē
noun
1) the use of magic, especially black magic.
2) digital mode, especially FT-8

I received quite a few responses from EIDXA and SMC members on their experiences with FT-8. I chose to publish them in the author's own words. Thanks to those who contributed. - Ed.

Gary Sutcliffe W9XT

I started using FT8 in early August. I was primarily interested in it for 6M use. I worked about 50 countries on 6M back around 2000-2001 when we had good F2 openings to DX. Since then I only added a couple and kind of lost interest because there was little hope of getting DXCC on 6M.

I heard about the success with FT8 from modest stations working DX with Es opening and decided to try it. The summer Es season was pretty much over by the time I got on, but I did work a couple of DX stations. I also worked stateside stations just about every day even when there was no CW/SSB activity.

There is a second, small Es peak in December-January. It will be interesting to see what develops.

Because 6M was not always open I used it on HF so I would be experienced with it when 6M did open and found it good to work DX.

FT8 was meant to be a weak signal mode. On HF I originally turned the

power back to about 15 watts. That worked plenty well.

Now a lot of people who didn't think they could work DX find they could and the competition for working rarer stations has gone up. A lot of these guys don't know how to work DX and act as lids, but I guess there is more of that on CW and SSB than there used to be as well.

Power levels have gone up. It is apparently not uncommon for stations to run a full gallon. So, now I run 50-100 watts. For the most part it is not necessary to run high power except to beat out stations running higher power.

The popularity of FT8 has exploded. I have decoded 31 stations in a single 15 second period. I suspect additional frequencies will be needed before long.

We will see how it goes for DXpeditions. So far the results are not good. The 3YØZ guys have instructions for how to work them on their web site. Their plan is to only use FT8 when the bands don't support higher rate modes like CW and SSB. I think that is a good strategy.

A number of guys in my local DX club are chasing DXCC with FT8. At least a couple already got there. I am at 82 but have not been active the last couple of weeks. There seems to be a feeling that they will lose interest once they hit 100. It is just too easy.

Rich Haendel W3ACO

I've used FT8 for a few weeks now. It's easy to set up and I can make QSOs when the tone is inaudible. There is another layer of stations I can hear now that I couldn't before, even on CW.

The downside is the message exchange is fixed format, little chance of saying something extra. However a CW reply to a DX station is not much better (r 5nn tu), which is also fixed format. I like FT8 because it gets through when conditions are poor.

Rick, WØFG

I've tried a bit of FT8, particularly after moving up here to Decorah where I have the worst radio location imaginable. I've worked a couple dozen states and a bit of DX (best being Korea).

I can't work up much enthusiasm for it, even though the Flex 6500 is a great platform for it. It's too impersonal for my taste, and the novelty wore off pretty quickly. I'll stick with CW, even though my serious DXing days are probably over.

Gary Huff KWØJ

I have used it off and on for a couple months. My comments are not really too scientific. I'd rather be operating CW or FSK. I find it too slow and limited. I guess it has it's place on some VHF Frequencies and perhaps on 160 meters. For those with limited space it could prove useful on 160 for WAS award or DX goals, etc.

I find it frustrating at times, as it appears standard operating practices are not established. For example, while chasing a few DX stations they would be jumping frequencies after each Q. It didn't appear they were doing a search and pounce. I guess I need to read up on it more and give it more time to develop.

I will try to end my last transmission on the digital mode macros "CU on CW". HI HI

Dave W9QL

I had been a PSK-31 / JT-65 operator while I was chasing my Triple Play award. I read about FT8 in QST and decided to give it a try. I already had the sound card interface (Rigblaster) and the software is free, so it only took about 10 minutes to set up.

I was surprised at how much activity there was. A quick look at the panadaptor showed people had apparently moved away from JT-65 JT-9 in favor of FT8.

So, in about 6 hours of operating time (not all at once), I had a WAS on FT8 confirmed in LOTW. Also, roughly 35 countries. All this with about 15 watts of power and a G5RV at 35 feet.

One thing I immediately liked over JT-65 is that each exchange takes only 15 seconds. A full QSO is over in one minute. Of course, the downside is this only 12 characters, so rag-chewing is non-existent.

You do need to have your computer synced to a good time server, Windows time will not suffice but there are plenty of free programs that will beep you properly sync'ed.

So, for folks with limited power / antenna resources, FT8 seems like a good was to pursue some awards.

Jim KO9A

I've only used FT8 on VHF, for both contesting and general operating/DXing/Grid Chasing. I think FT8's biggest benefit is the "range extension" or "link-budget gain" the mode offers above and beyond CW (and most other digital modes). I routinely work guys on FT8 I can't hear in the speaker. Those QSOs would flat out not happen without the WSJT-X suite of tools.

FT8 is fantastic for weak or multi-hop Es. FT8 also excels at long/weak tropo paths. FT8 is absolutely not good for meteor scatter...MSK144 is still the king for meteors.

The bottom line for me is that FT8 enables more QSOs and higher contest scores without making physical station hardware changes (bigger antennas, LNAs, amps, whatever).

Gary AB9M

The first impression may be that its just an easy way to work digital DX, but when the rarer gray line stuff is coming in at -20 and many are calling, it's more like a big pile up. One must use some pile up techniques and figure where to transmit and what to transmit, maybe just starting with signal report instead of grid square.

I'm having a lot of fun with FT8 as I wait for my last one for DXCC mixed, Crozet Island to appear.

...and finally, from our President:

Joe Hungate K8OM

The use of the new FT8 digital mode is ramping up fast and is being utilized by hams all over the world. It’s also helping to bring back some life to the dead bands as we approach the solar minimum.

FT8 is not a very personable communications mode since it doesn’t support rag-chewing or very much personalization of a QSO. It was not designed to do that but was designed to provide the ability to log a QSO with a station that would normally be impossible to complete with SSB, CW or RTTY. FT8 is a blessing for hams that have to run low power, have compromised antennas and during times of poor propagation. More and more DXpeditions

are starting to dedicate operating time to FT8 so the really small stations have a fighting chance to get in their log.

FT8 has a QSO rate slower than SSB, CW and RTTY but is faster than the JT65 digital mode that has been around for a few years. Additionally, quite a few DX stations are starting to show up on the low bands, especially 160 and 80 meters, which helps to add to your Challenge points or X-band DXCC.

If you haven't tried FT8 yet, I suggest you download the free software and try making some QSOs before the 3YØZ DXpedition hits the air.

The latest version of the software can be downloaded from here

There is also an excellent user guide available at this site to help you get started.

I've been operating FT8 for quite some time and am sold on its capabilities. The software has a few quirks that you have to get used to but it's a pretty amazing piece of software. It's amazing that QSOs can be successfully completed with stations that are so weak that they are inaudible.

Here are a few operating tips that hopefully will help with successfully operate FT8.

1. High transmitter power is not needed. If your receiving signal reports greater than +0 then back off on your transmitter power. FT8 can successfully decode signals that are as low as -24. High power may also cause other users receiver AGC to reduce their receiver gain. You won't be popular!
2. Watch your transmitter ALC. A very clean transmitted signal is required for the greatest success with FT8. Your ALC should be as low as possible and never more than 50% full scale.
3. Time synchronize your computer clock. FT8 requires your computer clock be accurate to within 1 second. Newer laptops and PCs have much better clocks than those of a few years ago but you may want to use a free computer clock synchronization program such as "Dimension 4" (http://www.thinkman.com/dimension4/) to make sure your clock isn't drifting too much.
4. Turn off noise blankers and noise reduction software in your radio. These can make it more difficult for the FT8 software to decode received signals.
5. The FT8 software doesn't like to be overdriven with receive audio. This is a sure way to reduce your decode success rate. Make sure your receive audio level, as shown on the bottom left of the FT8 operating screen, is always "green". Too much receive audio will turn this indicator "red". It is best to keep the audio level in the 40 to 60 dB range.
6. Never answer a DX station on his exact transmit frequency! Most likely there will be dozens of stations doing so and none of them will be

decoded by the DX station. Instead, find a clear spot on the water fall and call. The FT8 software will decode up to 24 stations simultaneously within the FT8 passband so “spread out”. This works great for me!

7. If at all possible, call the DX station lower in frequency than they are transmitting on. It appears the FT8 software decodes the entire passband starting at the low frequency end and go to the higher frequency end. Calling lower in frequency may halp get you higher in the list of received stations. Most of the time this works for me.
8. If the DX station is transmitting on the “even” time slot, make sure you are calling on the “odd” time slot. It is unbelievable how many stations get out of synch and transmit on the same time slot as the DX station. You will not be heard by the DX station if you transmit the same time he does…. guaranteed.
9. Most DXpeditions that are going to be operating FT8 will publish their operating plan and frequencies on their website. 3YØZ has done so and it is a must read!!! https://www.bouvetdx.org/band-plan-frequencies/
10. Practice making FT8 QSOs before the heat of the battle trying to work a DXpedition or rare DX station. Have fun with this new mode!

Member News

Battleship Missouri Radio Room

Terry Cellman WØAWL

I recently returned from a week-long cruise around the Hawaiian Islands.

On the last day, we spent 6 hours at the World War II Valor in the Pacific National Monument, or as it is probably more recognized as The Pearl Harbor Memorial. The monument erected over the Battleship Arizona was unreal, especially, when you realize the average of the 1170 sailors killed was 16 years.

The other monument we visited was the battleship Missouri. I wanted to be able to see the ship's radio room. I was told that was not open for visitors.

We started the walking tour with a very nice and knowledgeable female guide. I decided nothing ventured nothing gained, so I asked if it would be possible for me to visit the ship's radio room. I did mention that I was a ham radio operator. She said it was not on the tour, but if I would stick close to her after the walking tour was over, she would personally take me there.

She allowed me to take as many pictures as I liked and also showed me the ham club's log book and allow me to sign-in.

The pictures below are the result of a very nice lady allowing me to have a very special moment.

The one thing I searched for and did not find were radios made by Collins. Maybe the reason was the battleship Missouri was launched in 1944. You would probably know if that might have been the reason for the lack of Collins radios.

Maybe some of the more senior members recognize this stuff - Ed.

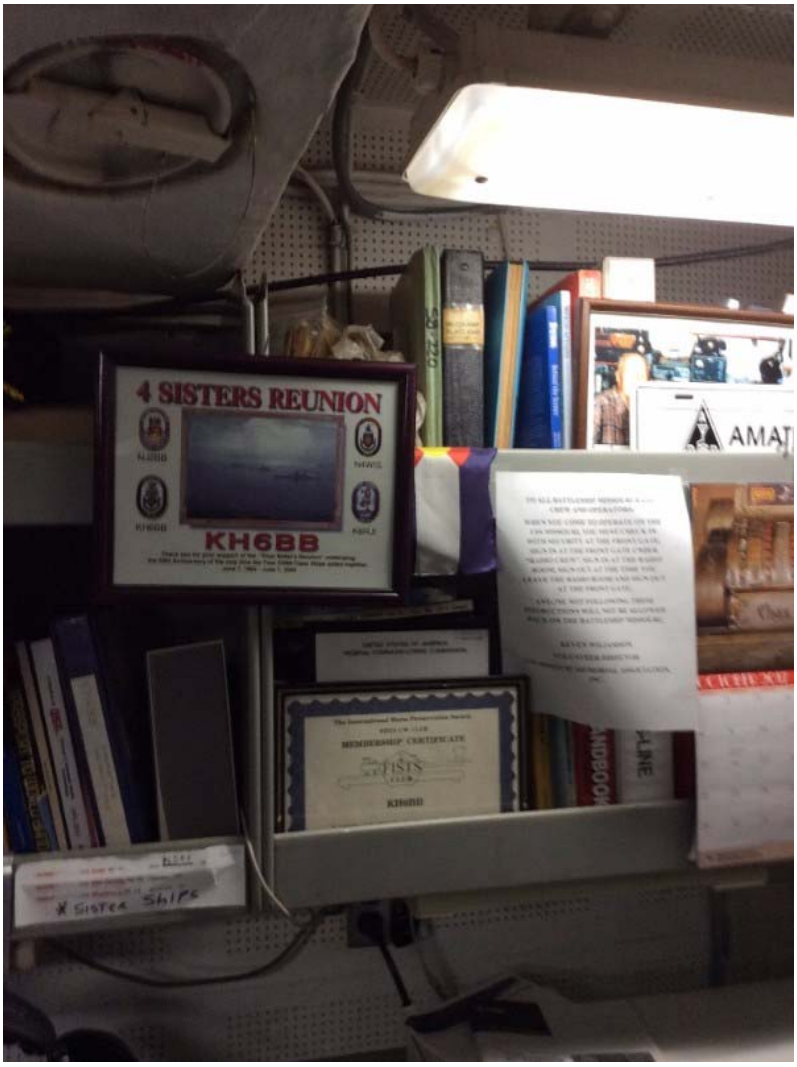

POWER
VOCODER
H6

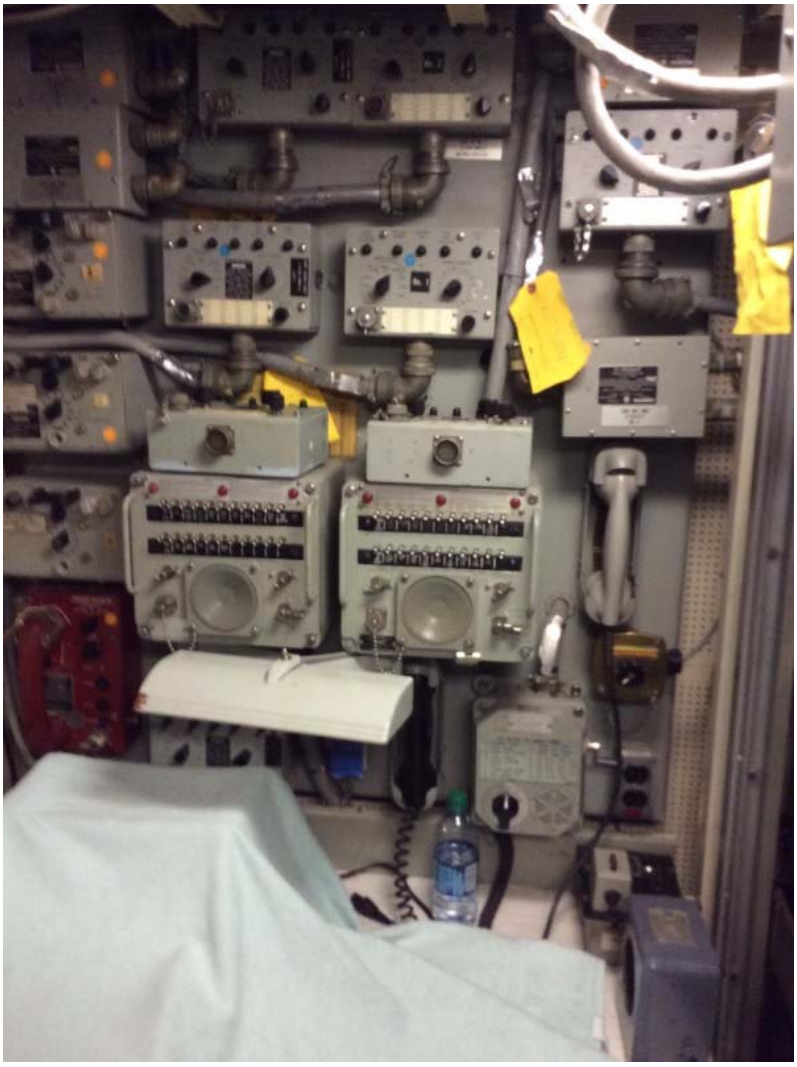

NO SMOKING

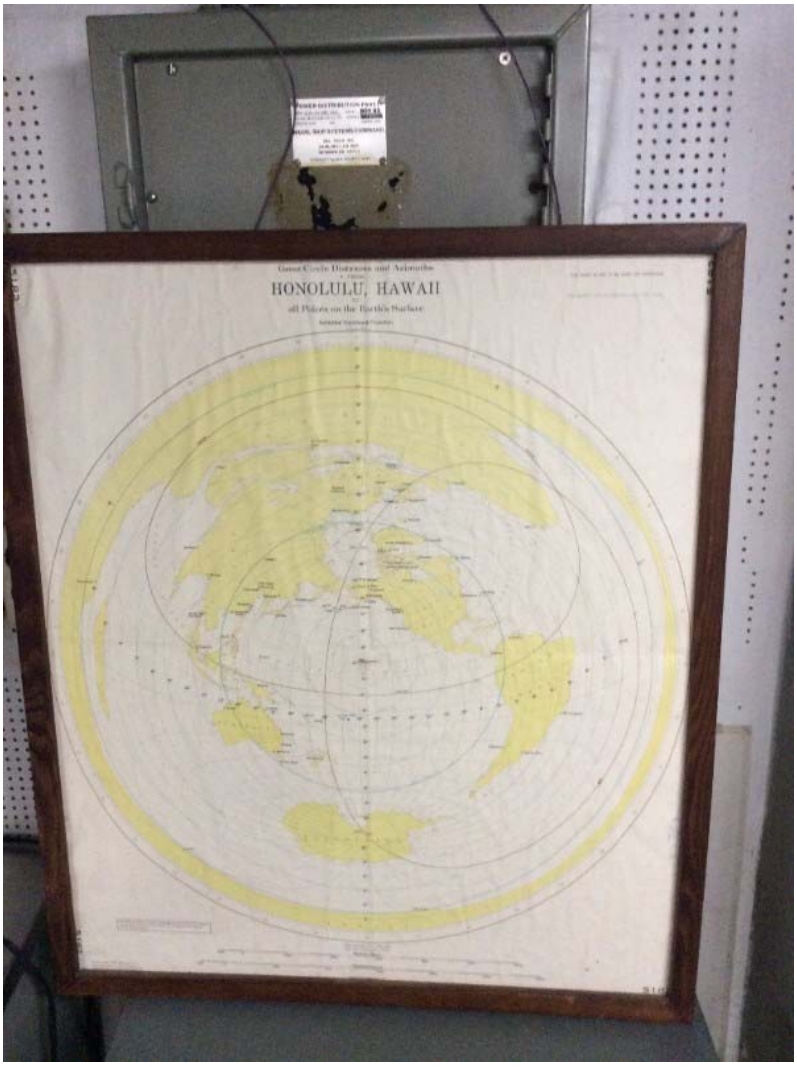

SA-227S
AN/UYK-20 (V)
DATA PROCESSING SET
NAVY DEPARTMENT
NAVAL SEA SYSTEMS COMMAND
SPERRY UNIVAC
DANGER
DO NOT ENERGIZE THIS
EQUIPMENT UNLESS FRAME
AND ALL EXPOSED METAL
PARTS ARE GROUNDED

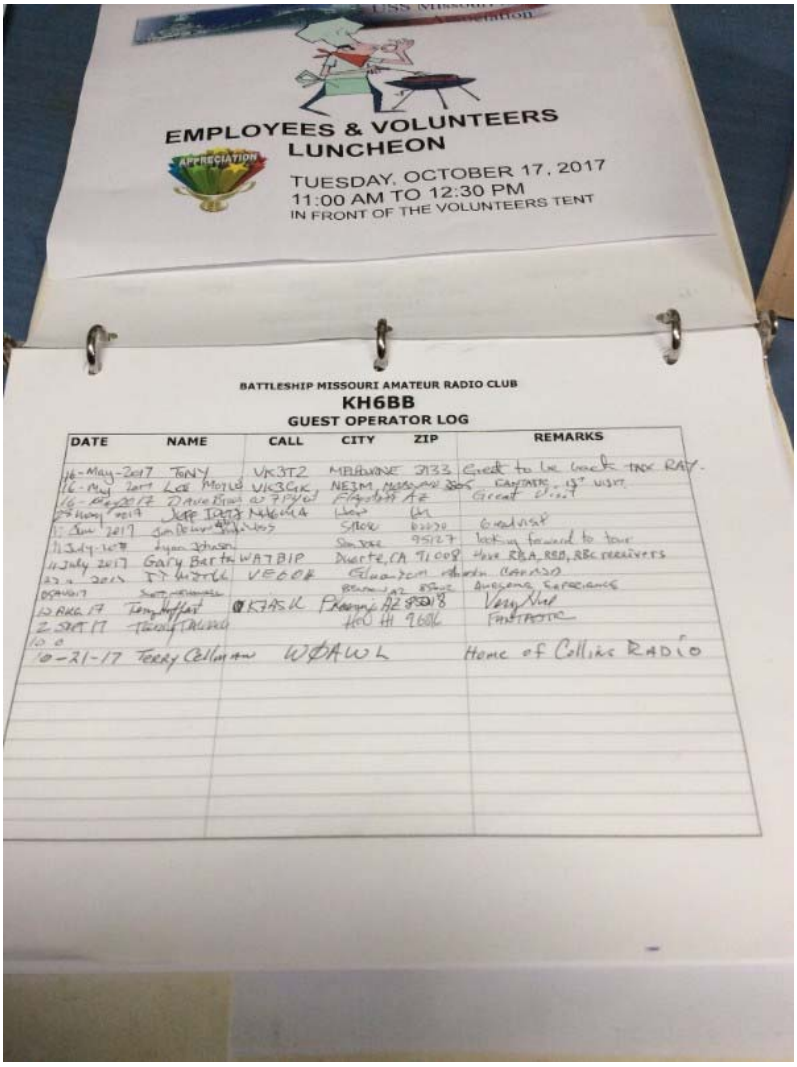
"Yuck Twenty"


2013
Hawaii
QSO Party
KH6BB
2nd Place
Multi-Multi
BATTLESHIP NEW JERSEY
BB - 62
USS MISSOURI
BB 63
A - Alfa
B - Brave
C - Charlie
D - Delta
E - Echo
F - Foxtrot
G - Golf
H - Hotel
I - India
J - Juliet
K - Kilo
L - Lima
M - Mike
N - November
O - Oscar
P - Papa
Q - Quebec
R - Romeo
S - Sierra
T - Tango
U - Uniform
V - Victor
W - Whiskey
X - X-Ray
Y - Yankee
Z - Zulu
OPERATING MANUAL
Working Radio
KH6BB


4 SISTERS REUNION
KH6BB
MEMBERSHIP CERTIFICATE
FISTS
KH6BB
X Sister Ships




HONOLULU, HAWAII

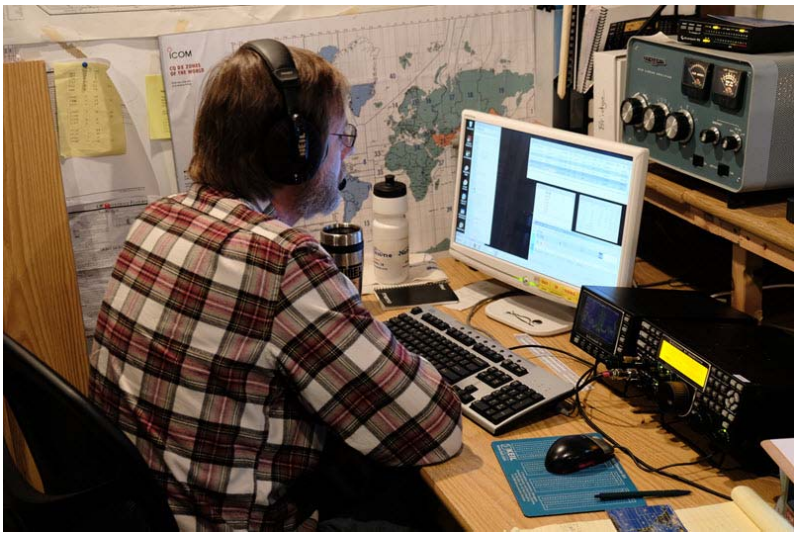


Ship's log, star date 10 21 17

A nice day for a little antenna work - WØGXA

Looking roughly 300 degrees - WØGXA

Dan Rhoades operating at NØMA during CQWW SSB
Bill Frede, W7II in the background
Photo: WBØLJK



Bill Frede operating during CQWW SSB
Photo: WBØLJK

We'll be taking up a collection after the meeting to buy Bill a razor - Ed.

A visit to K2PO

Bob WØGXA

I found myself facing a two week trip to Portland OR for work back in October. I decided to plan weekend activities so I didn't just hang out in a

hotel room.

I thought it would be interesting to find another contester to visit to talk about propagation and general operating from the Pacific Northwest. I emailed Craig K9CT to see if he had anyone to recommend. He suggested I contact Bill, K2PO.

Bill and his wife Kristen live in SW Portland where the typical side yard is about 10'; not conducive to having antennas. When he got back into the hobby 10 years ago, he bought a second house, out of foreclosure, north of Newberg, in Oregon's wine country.

The house is on a five acre lot with a single rotating tower and some beverages. He also has a multiplier tri-bander 350 feet away, near the road.

Antennas include: stacked monoband beams on 20/15/10, a 40m Moxon and 80m rotating dipole on the top (145')

Unfortunately, the only way to experience propagation this particular

weekend was to run a few QSOs in the Oceania DX SSB contest. Not wanting to offend my host, I accepted the challenge of talking and pressing a button with my foot at the same time.

Here I am praying none of my CW friends see me using a mic
Rig is K3 with KPA 500
This operation brought my SSB QSO total to 17

While I was there I met Bill's partner for WRTC-2018, Alex, KU1CW. He's a crazy guy (and very nice).

Bill and Kristen were very gracious hosts and I look forward to another visit in the future.

Logbook

WØGXA - 3CØL #280, 15m and 40m CW. Completed WAS-160. Added KL7, LZ, CO, G, HA, I, GM and S5 on 160m (44 worked).
I tried to snag Cocos (Keeling) around the same time as 3CØ but was never near a radio when there was (or may have been) prop.

NYØV RY/FT8 Log: 9N1AA, A5A, VR2XYL, VU2IT, VU3WEW, SV5DKL, XT2AW, SU9JG, FR5CB, OJØJR, JW7XK, 3B8CW, D44KIT, S9CQ, HBØWR, CN2MA, Z68BB, ZD7BR, VYØERC, VYØRAC, 5T2AI, FK8GX, S79KB, OD5YA, 9K2OF, 3C1L, VK9MA, 9U4M, J5T, KC4AAA, 5T1A, UAØCA and last but not least: KØVM and W3ACO

KØAFN: RTTY; 5T5ØK, C31MF, VK9MA, EA1XT, VP2MD, J5T, TO2SP.
CW; (40 mtrs) FT5MT/MM, FT5WQ/MM, 3C1L, RI1ANO, CT9/DL5AXY, HC8LUT, (12 mtrs) ZD7BG ,(20mtrs) A5A,RI1F, RI1ANC, 5H3DX, 3B9FR.
SSB; (20mtrs) A5A, 3CØL, 3C1L, VK9AR, J5T, (10mtrs) A31MM, ZB2TT,

EA9KB

WØFG: Managed to snag VK9MA on two bands on CW off my vertical from the worst station location imaginable

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CQ Test

Contesting by Rick

Rick Heinrich NØYY

The Ergonomics of Contesting

Every contester asks a similar question every year, “What can I do to improve my score?” Well a new antenna is one answer. Or maybe an amplifier?

But there is one item that may have more impact than large, electronics-oriented acquisitions. The key to score improvement is a simple “butt in chair” concept! That’s right – if you are not sitting in front of your radio, you are missing Qs – either by running or search and pounce. So stay put and watch your score climb.

OK, nice concept. But there really is more to it than that! Those who work in office environments find that sitting in front of a computer all day has a fatigue impact. Eye strain, neck strain, sore lower-back, are all reasons to get up and move around. But each time you get up you are not making QSOs. And history shows that you are prone to distractions when you are away from your radio.

I guess I heard all the recommendations and took the candid, “yeah, yeah” attitude. However, it was in 2006 while I was at FG for the ARRL DX contest when it all came to a head. Forty-eight hours in a folding chair really took its toll with the radio on a card table and the notebook computer off to the side. When you are “in the zone” none of that makes a difference. But when you are calling CQ into a dead band or the static on the low bands is driving you crazy, you look for any reason to get up and walk around.

But Qs are Qs and you don’t make them walking on the beach or raking leaves. You need to sit in front of that radio and keep at it. So if you are going to sit there – why not make it comfortable. You already know that you will hear the CW for a week after the contest echoing in your head – so at least your shoulders and neck should be able to relax and rest!

The concept of ergonomics is putting everything you need to touch or see in a logical, comfortable position – one that does not force your body into

unusual positions or repeat stresses.

So here are a couple of things for you to consider.

1) What is the height of a standard desk or table?
2) What is the height of a “computer desk”?

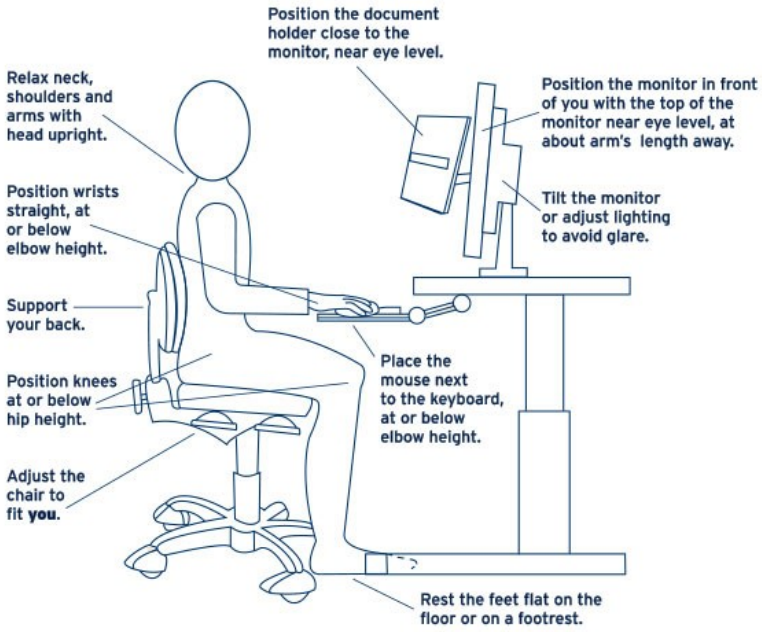
A standard kitchen table or traditional desk is 30 inches in height. But a standard computer table or desk is 28 inches in height. Let's set that reference point aside for a moment.

There is no “number” that will fix this – it is a balance of many different characteristics. How tall are you? What are the proportion of your legs – sole of foot to knee and hip to knee? These will wind up being part of the overall determination.

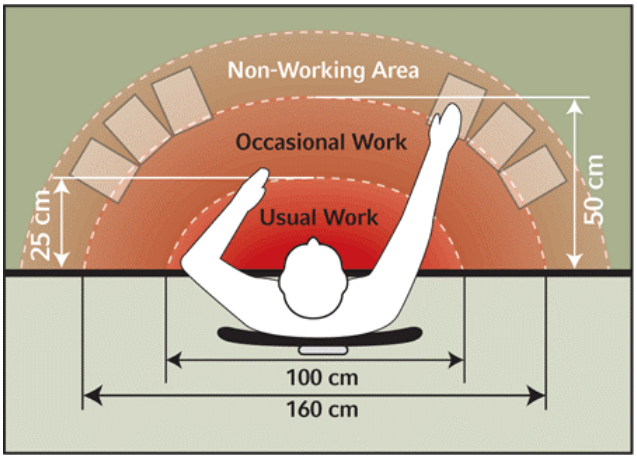
My starting point is a good comfortable chair. It should have adjustable height. The seat pan should be adjustable to ensure that you do not have too much pressure on the backs of your legs. The ideal is for the pan to tilt forward slightly – not so much you feel like it is tipping you out of the chair, but you should be supporting your body with your spine straight. Your chair should have an adjustable lumbar support so that when you are sitting upright, the lumbar support fits the curvature of your lower back. It should provide support that removes the stress on your back from sitting for long periods. The seat pan and the back support should be adjustable as well. It is important to be able to adjust where you sit, where your knees are with respect to the front edge of the chair pad, and where your back is and how to adjust the seat back to the correct point. Pretty complex! Now you understand why shopping for a chair is so critically important!

Feet should be flat on the floor. Seat height should be set so the hips are the same or slightly above the knees when the feet are flat on the floor. If you have armrests on the chairs, they should be adjustable so that the height of the arm rest should be level with the work surface height. This allows for the arm to be supported when using the keyboard or during reaching other knobs/controls, etc. (Make sure you keep your feet flat on the floor!) Wrists should be at or slightly below elbow height. This now sets the ideal height of your operating surface!

I’ve copied a couple of graphics available on the internet to depict what I am referencing. It helps get a graphical reference to what I am discussing.



The next thing to consider is your “reach radius”. You want to keep your arms supported while you “operate” so there is no stress on your shoulders or that you change the geometry of your arms, wrists, elbows, etc.



Input caption text here. Use the block's Settings tab to change the caption position and set other styles.

Sitting in the chair at the operator position should allow about 3 inches between your stomach and the table edge. That may vary with body dimensions. But your wrists or forearms should be supported by the work surface top. The mouse should be at the same height as the keyboard.

All displays should be perpendicular to your eyes. This includes the front panel of radios. Your reach radius needs to consider the tuning knob on the radio!

And maybe a quick word about the infamous “mouse” – chasing that mouse all over the work surface challenges that stretch “stress” referenced earlier in

this article. Trackballs solve that issue as it keeps your hand in a single location. Now your thumb or forefinger does the cursor movement and the clicks are adjacent to the ball. And your arm stays supported in a more ideal position. Consider Air Traffic Controllers – they use trackballs for cursor movement!

Now for some esoterics… The front edge of the work surface should be rounded so there is no “edge” for your forearms or wrists to rest on. You will not notice this in the first hour or maybe two hours – but at the end of a 6 hour shift you will really know that those deep red indentations are uncomfortable!

So you are designing a station for multiple operators. Now what? Well again, back to your body dimensions. Are you tall, short, are your team members taller or shorter, etc.

Here is how I compromised on those issues when I designed the multi-operator positions for PJ2T. We had adjustable height chairs. I wanted to make sure that the shorter members of the team could sit with their feet flat on the floor and have their arm geometry so the arms were at table height. What I found was a desk height of 27 inches would allow short and tall ops to sit comfortably and make up the difference with slight adjustments in chair height. Taller ops had less “back of leg” support than shorter ops, but that compromise seemed to work as well.

My design focus is on the monitor and the keyboard. I will admit that I did the planning on an operator running where the focus is on the keyboard and the monitor. There are two exceptions – search and pounce – where you interact with the radio more; and digital modes like RTTY where you interface with the mouse more.

So as you think your way through the reach radius, consider note pads, keyer paddles, the mouse or trackball, etc. My goal was hands on keyboard – no other “distractions”. When the operator position gets cluttered the fatigue starts to increase. Yeah you need paper and pencil – but within reach not in your hand! That busted call, the log correction, etc. all beg for a note – but it should be the minimal exception – not the norm. Same goes for the keyer paddle. The operator interface focus should be on the keyboard.

Yeah I admit that those attributes are a bit Draconian, but I needed a goal. I also try to minimize cable clutter on the desk top. I like my connections under the table top – keeping the work surface clear of things that will bet under a keyboard and start it to rock and roll – like a headphone cable. Or under your wrist and create another dent that will stay red for an extra hour or two.

All of this is targeted at ensuring that you have no excuses to violate the “butt in chair” mantra. Now about that 32 oz container of ice water…
I also realize that this is a set of design goals. They are not hard and fast –

but serve as good guidelines when they can be put into practice. But even if you only go as far as a comfortable, adjustable chair – you are setting yourself up for success.

And there are hundreds of pictures on the internet of station layouts that offer similar insights. Maybe the focus is on radio placement, or receive antenna switch positions, but the point is that there are things in that reach radius to consider.

If you read the post-mortems from contesters you hear stories about having to stand up and operate to fight the fatigue. I did not discuss the solution set found in modern offices of standing work stations. Those new stations collapse to support sitting operations and then extend to allow standing – all done to stretch the back and remove the fatigue and stress. Those same principles apply here. And maybe those standing work stations would be a solution for you to consider!

Now you have another secret weapon in your arsenal to grow your score every year.

Upcoming Contests:

There are some good contests coming up in January and February -

ARRL RTTY Roundup
1800Z, Jan 6 to 2400Z, Jan 7, 2018

NAQP
CW 1800Z, Jan 13 to 0600Z, Jan 14, 2018
SSB 1800Z, Jan 20 to 0600Z, Jan 21, 2018

CQ 160m
CW 2200Z, Jan 26 to 2159Z, Jan 28, 2018
SSB 2200Z, Feb 23 to 2159Z, Feb 25, 2018

CQ WW RTTY WPX
0000Z, Feb 10 to 2400Z, Feb 11, 2018
The WPX contests are always fun because it's everyone works everyone so there's plenty to do even if DX propagation is bad - Ed.

ARRL DX CW
0000Z, Feb 17 to 2400Z, Feb 18, 2018

Scores & Commentary

ARRL SS CW
WØGXA
QSOs 500, Sections 80 Score 80,000
I didn't expect to get PR or VI but NNY never seemed to show up either.
I put in 500 Qs just like last year. Rates were good.
Not crazy but never felt slow.

CQ WW CW
WØGXA - I did opening night at NØNI. I spent the night on 80 and 160.
80 was steady all night. No great runs but a good number of stations to S&P.

QRM

Mary Texanna Loomis

Mary Texanna Loomis with wireless equipment she built

Posted by PV Scientific

Sitting on my desk these days is a well-worn burgundy-red copy of an unusual book: a wireless textbook written by a woman: Radio Theory and Operating for the Radio Student and Practical Operator, by Mary Texanna Loomis.

My copy, the fifth (1930) edition, is also unusual in that it once was the property of a female amateur radio operator, Lena E. Kay (Mrs. Arthur Kay), whose call sign was W5HLI.

Reading Mary Texanna Loomis's 1,000-page book was no lightweight adventure--in more ways than one. Radio Broadcast magazine considered it “one of the most comprehensive volumes in its field” because it covered not only the radio theory and circuits of interest to amateur radio enthusiasts like Lena Kay, but because it also served as an electrical engineering textbook for future operators of radio telegraphs and radio telephone transmitters and receivers.

Mary Texanna Loomis was well prepared to write her textbook: she had founded Loomis Radio College in Washington, D.C., where she spent 12 to 15 hours a day studying, teaching, and writing about radios. The Loomis Radio College offered a six-month course leading to a first class commercial radio license and eventually a four-year course leading to a degree in Radio Engineering.

Miss Loomis also intended that her students understand more than just the inner and outer workings of radio. In addition to a radio laboratory (with equipment constructed almost entirely by Miss Loomis herself), the school maintained a complete shop capable of teaching carpentry, drafting, and basic electricity. She reasoned that many of her graduates might find themselves at sea, or in other challenging situations, and she wanted them adequately prepared. *"No man",* Miss Loomis said at the time, *"can graduate from my school until he learns how to make any part of the apparatus. I give him a blueprint of what I want him to do and tell him to go into the shop and keep hammering away until the job is completed."*

Loomis School

Mary Texanna Loomis teaching at the Loomis Radio College
circa 1920

With that kind of experience and attitude, it is no wonder that Radio Theory and Operating was, above all, an excellent reference for wireless telegraph operators. From the May 1928 issue of Radio Broadcast:

Miss Loomis's book is to be recommended particularly to commercial wireless telegraph operators. The chapters dealing with the care of storage batteries, the functioning and care of motor generators and power equipment, and the regulations applying to commercial practice are thorough and complete. An extensive series of questions at the back of the book are helpful in preparing for Government examinations. Standard ship and commercial installations are quite thoroughly dealth with.

Mary Texanna was delighted to discover that she was related to Dr. Mahlon Loomis, the American electrical experimenter who was the first to send and receive wireless signals in about 1865, who was the first to use vertical antennas, and who received a letters patent for his system of "aerial telegraphy" in 1872.

This wireless-education pioneer was born on August 18, 1880 on a homestead near Goliad Texas. When she was three, her parents, Alvin Isaac and Caroline, returned to Rochester, NY and then moved to Buffalo, where her father became president of a large delivery and storage company. She later lived in Virginia. Mary Texanna was well educated and spoke French, German, and Italian as well as English. During WWI she became interested in the new field of wireless and in 1920, at the age of 40, established her school at 401 Ninth St., NW in Washington. (The school had it's own experimental license, 3YA.)

In 1938, she retired to San Francisco, where she established herself at the historic "Grand Dame" of Union Square, the St. Francis Hotel, and listed her occupation as stenographer. Mary Texanna Loomis died in 1960 at the age of 80.

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50 ohms:
The forgotten impedance

Posted by: Steve Lampen on August 27, 2012
belden.com

If you play with coax, short for coaxial cable, you probably know this it is available in a number of different impedances. The most common is 75 ohm, like video cable or antenna cable, but in fact our products range from 32 ohms up to 124 ohms.

Why all these different numbers? It's not an accident of course, and there is a reason for each one. Today, we're going to take a quick look at 50 ohm coax cable.

Belden makes hundreds of 50 ohm cables, including a whole line of ultra-low loss versions (Belden 7805 to Belden 7977). The two largest versions (Belden 7976 and 7977) are shown in the photograph below. They are HUGE. The 7977 has a diameter of .600" six-tenths of an inch! This is the largest coax cable that we make.

But first of all, why 50, or any other number? The answer can be shown in the graph below. This was produced by two researchers, Lloyd Espenscheid and Herman Affel, working for Bell Labs in 1929.
They were going to send RF signals (4 MHz) for hundred of miles carrying a thousand telephone calls. They needed a cable that would carry high voltage and high power. In the graph below, you can see the ideal rating for each. For high voltage, the perfect impedance is 60 ohms. For high power, the perfect impedance is 30 ohms.
This means, clearly, that there is NO perfect impedance to do both. What they ended up with was a compromise number, and that number was 50 ohms.

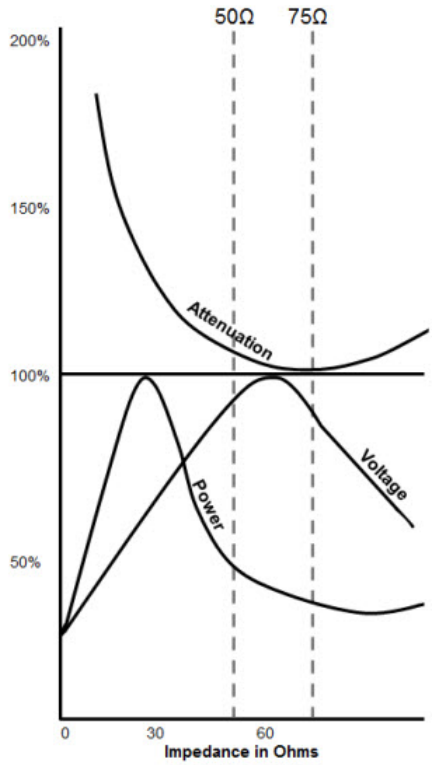

Figure 2-8 Coax impedance and loss
84

You will note that 50 ohms is closer to 60 than it is to 30, and that is because voltage is the factor that will kill your cable. Just ask any transmitter engineer. They talk about VSWR, voltage standing wave ratio, all the time. If their coax blows up, it is voltage that is the culprit.

So why not 60 ohms? Just look at the power handling at 60 ohms - below 50%. It is horrible! At the compromise value of 50 ohms, the power has improved a little. So 50 ohm cables are intended to be used to carry power and voltage, like the output of a transmitter. If you have a small signal, like video, or receive antenna signals, the graph above shows that the lowest loss or attenuation is 75 ohms.

Still, I get a lot of feedback from people who use 50 ohms for small signals; you can see above that they are taking a 2-3 dB hit in attenuation. Excuses I hear are *"It's too late to change now!" or "That's the impedance of the box itself."* This is especially true of most test gear, which is universally 50 ohms. You have to buy a matching network to use it at 75 ohms or any other impedance. But there are lots of applications where 50 ohms is the best choice.

Belden 7977 mentioned above, can carry more than 5 kW at 30 MHz and more than 600 watts at 6 GHz. So even a cable this small could be used for TV or FM low power, boosters, translators, two-way radios, life-safety such as police/fire, RPU, many ham frequencies, microwave transmitters up to 6 GHz, and probably hundreds of other applications where signal are being delivered with high voltage and high power.

Most often, these signals end up in antennas. For instance, the sections in

transmitters where small output power sections, like an exciter, are fed to a larger power section also require 50 ohm cable. That might be where the physically smaller 50 ohm cable might be used.

For many of these cables, they come in three versions: for outdoor applications, for riser-rated indoor applications, and for water-blocked applications such as direct burial or under-water applications. Some are even approved for shipboard ABS approvals.

These shipboard versions are also LSZH or low-smoke zero-halogen, which is often a requirement in some European countries.

Ham Radio Survey

Joe Shelton, N8XJ recently published the results of a survey he conducted of hams first licensed between 2000 and 2015. It's an interesting read.

To see his report, click here (it will open a .pdf file on his google drive)

QST - QST - QST

W1AW to begin scheduled transmissions on 6 meters starting January 2, 2018

Beginning with the 9 AM EST fast code practice on Tuesday, January 2, 2018, W1AW will add 6 meters - specifically 50350 kHz - to its regular CW code practice, and CW, digital and phone bulletin transmission schedule.

Prior to late 1989, W1AW had a presence on 6 meters for all its CW practice, and regular bulletins. Since that time however, the station was absent on 6 meters, with the exception of regular visitor operations and contests.

In addition to providing regularly scheduled transmissions on 6 meters, another goal is to act as a beacon on 6 meters, especially from the Northeast US.

Signal reports will be welcome. A web page that will allow listeners to provide signal reports will be made available after the start date. Reports may also be emailed to W1AW at, <w1aw@arrl.org>.

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