CWA Advanced Class Notes

Joe Attili – AA2IL

September-October, 2022

Session 0

- Meet and Greet

- Introduce ourselves

- Test Zoom and Sidetone audio

- Do first three h/w assignments before 1st class

Overview

- 8-weeks (M & Th 7-8PM on West Coast)
  - **Please use headphones!!!**
- Daily Practice
  - Two 15-minute sessions per day is much more effective than one 4-hour block once per week
  - Homework: Short stories, QSOs and CWT exchanges
  - RufzXP and MorseRunner
  - **GET ON THE AIR!!!**
- In-class exercises will reinforce skills but are no substitute for practice and OTA time
- I will supplement each class with related topics to help improve your operating skills and overall enjoyment of our great hobby

Philosophy

- Its a hobby, not a competition!
  - Keep it fun!!!
- Just like OTA, there are different skill levels coming into this class
  - Compare yourself to yourself, not your classmates
  - Don't get frustrated or worry about slowing others down
  - More skilled ops, PSE QRS! GET THE MESSAGE THROUGH!!!
- Challenge yourself
  - Listen to homework a little faster than you are comfortable with
  - Strive to make a few more QSOs in the CWT
  - Practice sending a little faster …
- Practice, get OTA and HAVE FUN!!!

About AA2IL

- Grew up in Upstate New York, moved to San Diego in 1993 (job transfer)
- First licensed in the late 1970s as a teenager
  - Went silent for over 20-years
- Retired last year after 35-years as an Electrical Engineer (signal processing)
- Radio activities include
  - Chasing DX and contesting
  - VHF/UHF contesting and satellites
  - Antennas, Linux software development and micro-controllers
- Modest station
  - 100W and wire antennas
- Took this class last spring because couldn't seem to get my "fist" back and wanted to see how it all worked
  - Surprised at how crucial daily practice was to improving speed

Week 1 - Session 1

CW ops

CW Academy

- Go over h/w

- Get on the air!

- Word game
  - Animals
  - Colors

GitHub Repository

- I have set up a repository on GitHub for items related to CW and this class:

  – https://github.com/aa2il/CWA

- There have been complaints about the "new" CWA practice files. I have uploaded the "old" versions of these files there. Use these instead if you prefer.

- Poke around and feel free to suggest other material to include there

Session 2

- Go over h/w & on the air activities

- Go over settings for MorseRunner and RufzXP

- Round Robin Short sentances
  - Something you might say in a QSO

Week 2 - Session 3

- Questions on h/w & on the air activities?

- Contesting Intro

- Simulated SST
  - Each student gets to run and others call

Why Radio Sport?

- Major activity in our hobby

- Fun Competition
  - Some say its the most fun you can have with your clothes on

- Become a better operator
  - Difficult conditions
  - Emergency Comms

- Quickly rack up entities for "paper chasing"

- Dormant bands suddenly light up

- Test effectiveness of your station

- …

Some Terminology

- **Runner**
  - Station Calling CQ (soliciting contacts)
  - Usually achieve a higher QSO rate, especially if you are a "big gun"
  - Need to be able to recognize calls and exchanges without too many repeats
- Search and Pounce (**S&P**)
  - Tune across band answering runners
  - Often lower rate because you are competing with other S&Pers
  - Much easier – can listen to runner until you get call and info
    - Be careful with serial numbers, not always consecutive
  - Often a better strategy for "little pistols" in larger contests
- Some mix of these is needed to work everybody

Some More Terminology

- **SO1R/SO1V** – Single Operator, One Radio/One VFO
  - Most of us mere mortals
- **SO2R** – Single Operator, Two (or more) Radios
  - Generally running on one radio and searching for multipliers on the other
- **2BSIQ** – Two-band Simultaneous Interleaved QSOs
  - Running on two bands, alternating CQ calls
- **SO2V** – Single Operator, Two VFO's
  - One transmitter and two receivers (one in each ear)
- **Multi-Operator**
  - Larger contest stations with two or more ops

SST Weekly Practice Contest

- "Slow" Speed Test

- Friday 2000z and Monday 0000z

- Very Relaxed Pace - Speed limit is 20 wpm

- Exchange: NAME and STATE

  CQ SST N7KOM

  KM6GOX

  KM6GOX TU TIM OR

  GE TIM DEREK CA

  GE DEREK 73 N7KOM

- Great place to get used to contesting and to try running

Session 4

- Go over h/w and on air activities
- Loose ends
  - WebSDR.org
  - EU Contests: MWC, NTC (Dutch) QSO Parties
    - https://memorial-ok1wc.cz
    - https://pi4ntc.nl/ntcqp
- Upcoming contests
- Round-robin word game
  - Words related to a car
  - Words related to a hardware store

UPCOMING CONTESTS

- **CQ WW RTTY**
  - Very popular and good way to get ready for CQ WW CW in November
  - This coming weekend starting at 0000z Saturday for 48-hours
  - Everybody works everybody
  - Condx have been good this week

- **California QSO Party**
  - More competitive than most state QPs
  - Oct 1 1600z through Oct 2 2200z
  - Exchange:
    - CA stations send SERIAL No. and COUNTY
    - Non-CA send SERIAL No. and STATE
  - CW QSOs count 1.5x Phone QSOs (no digi contacts)

Week 3 - Session 5

- Go over h/w and on air activities

- Upcoming contests
  - CQP this coming weekend

- Practice Contests
  - MST and CWT

MST Weekly Practice Contest

- Medium Speed Test
- Monday 1300z and 1900z, **Tuesday 0300z**
- Relaxed Pace - Speed limit is 25 wpm
- Exchange: NAME and SERIAL No.

CQ MST NJ7V

SV2HUD

SV2HUD TU RED 28

TU VAS 37

TU VAS 73 NJ7V

- Great place to build up confidence and skill

CWT Weekly Practice Contest

CW Academy

- Wednesday 1300z and 1900z, Thursday 0300z and 0700z

- Very popular and very fast – average speed ~39 wpm

- Exchange: NAME and MEMBER No. or STATE or "CWA"

CQ CWT AA2IL

N7AUE

N7AUE TU JOE 3177

TU JIM NV   or JIM CWA or JIM 3237

73 AA2IL   or R or EE or GL JIM 73 EE

- If you are aspiring to become a member of CWops, this is the easiest place to get your call recognized and build up sponsorship

Session 6

- Go over h/w and on air activities
- Loose Ends:
  - CQP is this weekend – practice session at 4:30-5:00 PM tomorrow
  - AZ and NV QPs are next weekend
  - We will be discussing logging on Monday
    - Current thread on CWops email reflector regarding logging
    - Recent thread on CWT Strategy
- Anatomy of a QSO
  - Hit and Run
  - Rag Chew
- Round-robin Sentences
  - Next week, we'll try full QSOs

"Hit and Run" QSOs

- By convention, a valid QSO must exchange some type of information in addition to call signs

- However meaningless, the minimal amount of "information" is a signal report

- Example – A "rare" DX station running a pile-up

  – His goal is to work as many stations as possible

CQ 3YOJ UP

NJ7V

NJ7T 5NN

TU 5NN

R 3YOJ UP
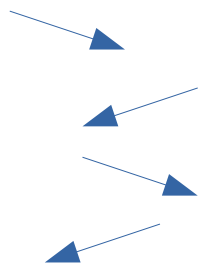
- The goal of (most) contesters is also to work as many stations as possible but there is a prescribed exchange

- Example – California QSO Party

CQ CQP AA2IL/6

N7AUE

N7AUE TU 123 SDIE

TU 456 NV

73 AA2IL/6

Short QSOs

- Special Event, POTA, SOTA, etc. ops also are generally trying to work as many stations as possible so they might only send a 5NN signal report

- Some ops will exchange more meaningful information quickly

- Example – A not-so-rare DX station who's not in a hurry

CQ CQ CQ SV2HUD SV2HUD

KM6GOX KM6GOX

KM6GOX GM 559 559 OP VAS BK

GM VAS UR 569 IN CA CA OP DEREK BK

QSL DEREK TNX ES 73

TU VAS 73

Rag Chew QSOs

- There's no precise definition for a "rag chew" QSO but they generally begin with "the big three"
  - Signal Report (RST)
  - Location (QTH)
  - Name (OP)

CQ CQ CQ AA2IL AA2IL AA2IL K

AA2IL DE KB1FGC KB1FGC KN

KB1FGC DE AA2IL = GE OM ES TNX FER CALL = UR 57N 57N IN RAMONA, CA RAMONA, CA, ABT 30 MILES NE OF SAN DIEGO = NAME HR IS JOE JOE = HOW CPY? <AR> KB1FGC DE AA2IL <KN>

AA2IL DE KB1FGC RR FB JOE TNX FER RPRT, SOLID COPY = UR RST 55N 55N = OP IS RICH RICH ES QTH IS PROSPECT, CT PROSPECT, CT = HW? BK

- At this, I can continue the QSO or politely end it

  KB1FGC DE AA2IL = RR SOLID CPY RICH ES GUD TO MEET U = XYL IS RINGING DINNER BELL SO MUST SAY 73 FOR NW = HPE CU AGN SN = 73 <SK> KB1FGC DE AA2IL <KN>

  AA2IL DE KB1FGC = FB JOE TNX FER QUICK CHAT ES WILL LOOK FER U AGN 73 73 <SK> AA2IL DE KB1FGC K EE

  EE

- There is a lot more detail than in a "Hit an Run" QSO

- A lot of jargon and abbreviations are used to shorten the messages

- I like to use the "break" or "double dash" to separate various thoughts and also to bide a little time while I'm thinking of the next thing to say

- I also like to use accepted pro-signs to help with flow of transmissions

Rag Chew QSOs (cont.)

- If we both choose to continue the conversation, there are a lot of things to talk about:

  KB1FGC DE AA2IL = RR SOLID AGN = RIG HR IS A YAESU FTDX300 ABT 100W TO A MOXON BEAM UP 30 FT = WX HR TODAY SUNNY AND HOT, TEMP NR 100 DEG F = SO BTU RICH <KN>

  R FB JOE DIDNT MISS A DIT = UR RIG AND ANT DOING NICE JOB HR IN CT = RIG HR IS KNWD TS2000 WID AMP RUNNING 500W TO A DIPOLE UP 45 FT = WX HR IS COOL AND RAIN, TEMP IN LOW 50S = FALL IS HR IN THE GREAT NE = BTU JOE KN

  VY GUD RICH = I GREW UP IN UPSTATE NY AND MISS THIS TIME OF YR = WENT TO THE BEACH WID MY XYL YESTERDAY TO REMIND US WHY WE LIVE HR HI HI = I RETIRED LAST YR AFTER 35 YRS AS AN ELEC ENGR = NW I HV LOTS OF TIME TO PLAY RADIO = WHAT DO YOU DO FOR WRK RICH? <KN>

  AA2IL DE KB1FGC R SOLID AGN JOE = MY FAMILY RUNS AN ANTIQUE TRUCK MUSEUM AND I USED TO DRIVE BIG RIGS = BEEN A HAM FER 25 YRS, I ENJOY CW RAG CHEWING AND CHASING DX. I ALSO LIKE TO REPAIR VINTAGE RIGS AND IM WORKING ON A SATELLITE SETUP

  ...

- … and so on and so on

- Be sure to identify every 10-minutes

- Keep subject matter friendly and upbeat and non-controversial

Week 4 - Session 7

- Go over h/w and on air activities
- Upcoming contests
  - AZ and NV State QPs this coming weekend
- Logging
- Short QSO Drill
  - Not so rare DX
  - Slow day as SES/SOTA/POTA

Computers and Logging

- Computers are a fixture in most ham stations now and are invaluable for contesting
  - Logging & Scoring
  - Keeping track of duplicates
  - Sending
- N1MM logger is the most popular logging program used for contesting
  - Many useful features
  - Windoz Only
  - No comparable option for Linux
- At this point, you should be using a contest logger
  - Its a good idea to let the computer do sending for you (other ops will appreciate machine code)
  - Also, use the "band map" to help with S&P (verify call sign!)
- Do not use the "call history files" and "auto-fill" until you can consistently copy exchanges
  - When you begin to use these features, you still need to verify that the information is correct

N1MM Logger

Other Loggers

California QSO Party

57th Running Of The CQP!
1600 UTC October 1, 2022 to 2200 UTC October 2, 2022
CQP 2022 Begins:
2 :01: 37 : 47
Days Hrs Mins Secs

HOME
Awards
Activate Your County
Audio-Video
CountyTracker
CA Counties Map
Club Competition
CQP Certificate
CQP Multipliers
FAQ
History
Log Submission
Records
Results
Rules
Software

CQP Logging Software

**Top 10 Most Common Logging Software Programs Used in CQP
Based On Logs Received in 2021**

Contest Logger	Links and Notes
N1MM+	1. https://n1mmwp.hamdocs.com 2. How to log a county-line QSO in N1MM+
N1MM+ Call History File For 2022 Search for qsop_ca on this page:	https://n1mmwp.hamdocs.com/mmfiles/categories/callhistory/
N3FJP	1. http://www.n3fjp.com/ 2. How to log a county-line QSO in N3FJP
Writelog	1. https://writelog.com Version 12.41 and after: Update of county line QSOs in Cabrillo file. 2. How to log a county-line QSO in Writelog
DX Log	http://www.dxlog.net/
GenLog	https://www.qsl.net/w3km/
SkookumLogger (for Mac)	https://www.k1gq.com/SkookumLogger/
CQPWIN	CQPWIN
RUMLogNG (for Mac)	https://dl2rum.de/rumsoft/RUMLog.html
TR4W	https://www.tr4w.net/
TLF (for Linux)	https://tlf.github.io/
Utility	**Links and Notes**

My Screen During a Contest

Short QSOs

- Special Event, POTA, SOTA, etc. ops also are generally trying to work as many stations as possible so they might only send a 5NN signal report

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QSL DEREK TNX ES 73

TU VAS 73

Week 4 - Session 8

- Go over h/w and on air activities

- I may need some help with class next Thursday

- Upcoming contests
  - AZ and NV State QSO Parties are this coming weekend

- Rag Chew QSOs
  - CQ/Greeting
  - "Big Three:" RST, Name, QTH
  - Wrap-up

Rag Chew QSOs

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  – Signal Report (RST)

  – Location (QTH)

  – Name (OP)

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CW Academy

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  ...

- … and so on and so on ...
- You don't have to send call signs each time but be sure to identify every 10-minutes
- Keep subject matter friendly and upbeat and non-controversial

Week 5 - Session 9

- Jim and Vas to lead class on Thursday
  - "MULEY," please send out a meeting invitation
- Go over h/w and on air activities
- Upcoming contests (November)
  - ARRL Sweepstakes
  - CQ WW CW
  - The bands are alive with the sound of DX music!
- Basic Contest Strategy and sEtiquette
- ARRL Sweepstakes Drill

Some Contest DOs and DON'Ts

- Do
  - Start off S&Ping until you build up skills and confidence
  - If you are running, ask for a repeat if you have any doubt about what you copied
  - If you are S&Ping and miss part of his exchange, you can either ask for a repeat or just listen to his next QSO
  - When you ask for a repeat, ask specifically for the element that you missed
  - If the runner misses your call, send it again then give your exchange
  - Be courteous but concise

- Don't send unnecessary information
  - Runner's Call – he knows what it is (and its your problem if you get it wrong!)
  - DE before your call or NR before Serial Number – wastes time, throws off timing and can be confusing
  - Signal report if it is not part of the contest exchange
  - Anything other than 5NN if a signal report is required
  - Long greetings/chatter – exception is SST and MST where friendly greetings are encouraged

More DOs and DON'Ts

- Before the contest:
    - Become familiar with the rules (who to work, exchange, scoring, multipliers, log submission deadline)
    - Update and test computer OS and logging software (Also test rig and antennas)
    - Take a look at the NCJ for hints from top-tier contesters
- After the contest:
    - Upload your summary to 3830scores.com
        - Track your progress
        - Get more visibility for your call sign
    - Upload your log to LoTW and Clublog
        - The final courtesy of a QSO is a confirmation (QSL)
    - Submit your log to the contest sponsor
        - Helps with log checking
- During the contest:
    - Don't send "B4" to a Dupe
        - Just work him again - Its almost always faster
        - He may not have you correctly in his log
        - He may be using an old-school paper log
    - Call your CWA advisor and classmates/friends for extra brownie points!!!

What If You Miss Something?

CW Academy

- Occasionally, you will miss a call sign or an exchange:
  - QSO, QRM, QRN, Poor Fist, Fatigue …
- If you are running, you **_must_** ask for a repeat if you have any doubts:
  - Call sign: N7?
  - Serial: NR?
  - Name: Name?
  - QTH: QTH?
  - Entire Call or Exchange: ? or AGN?
- If you are S&Ping, use your discression whether to ask for a repeat or just listen to the next QSO
  - How competitive are you?
  - How busy is the runner?
  - Try not to slow the runner or next caller down
  - Don't ask for his call sign unless he hasn't ID'sed in several QSOs
- In either case, try to be specific what you need
- Perfection is not necessary in an un-scored practice contest

ARRL Sweepstakes (CW)

CW Academy

- First full weekend in November

- Very popular "treasure hunt"

- Non-trivial Exchange:
  - SERIAL, PRECEDENCE, YOUR CALL, CHECK, SECTION

CQ SS AA2IL

N7AUE

N7AUE TU 123 A AA2IL 78 SDG

TU 456 U N7AUE 74 NV

73 AA2IL
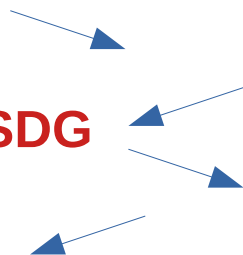
- Jim and Vas to lead class

- Go over h/w and on air activities

- Rag Chew QSOs
  - Practice inner part of a long QSO
    - Rig, Ant, Power ...
    - Weather …
    - Job, family, …
    - Ham career, activities, …
    - Etc. etc.

Week 6 - Session 11

- Go over h/w and on air activities

- Upcoming contests
  - CQ WW SSB
  - ARRL Sweepstakes
  - CQ WW CW

- Chasing DX
  - The bands have come back to life!
  - Look for increased activity in the days surrounding the CQ WW contests

- Math Drill

Chasing (Rare) DX

- For many, this is the most exciting aspect of ham radio
- CW is the best mode for working weak stations rapidly
  - For better or worse, much DX activity has migrated to FT8
  - However, most DXpeditions will operate CW as part of their effort
- Your QRQ and contesting skills will serve you well!
- The Internet and SDR have changed the landscape
  - Instant pile-ups once a rare station is spotted
  - A Panadapter gives "situational awareness"
    - Can do this to some extent with dual VFOs or XIT/RIT
  - Embrace it and use it to your advantage!

Up-coming DXpeditions

CW ops

CW Academy

DX-TRAVAGANZA! | DX-World - Google Chrome

- Callsign Lookup by | Your Logbook QSOs | jattili@yahoo.com - Yahoo | DX University | RBN - Reverse Beacon Netw | DX-TRAVAGANZA! | DX-Wo | New Tab

za/

Ham Radio   Alpacas   Linux   Hobbies   Books   Travel   Listen   House   Med   Electronics   Politics   Utica   SD   Video   Edu   Ref   Fun   Friends   Need to file

[UPDATED] If we look closer at the next 3-4 months worth of DX / DXpeditions, you can see we've come a very long way from Covid times when nothing was happening! Let's break down the coming months:

OCTOBER

S79/OE1MWW, VQ9SC, 3C3CA, S79/DL5RDO, FO/K6VVK, AH2_AH0/WA7WJR, TX7G, 8Q7TD, D60AE, 5R8FG, 5R8WP-5R8WG-5R8MM-5R8CG, VP2MLB-VP2MZN-VP2MOK-VP2MYV-VP2MDA-VP2MXH, TY0RU, VK9CM (VK9C), PJ5/W5JON, VP5Z, JD1BQP

NOVEMBER

5H2JC, 5V7RU, P40DA, 7Q6M, P29RO, J28MD, TX5XG, 7P8CW, T88WA, A35GC, TL8AA-TL8ZZ, PJ4A, TY5AF, 3B8M, 3B9KW, T8YA-T8AR

DECEMBER

TO9W, S21DX, FT/W (Crozet), T88PB

JANUARY

TN8K, T88SM-T88AQ-T88RH, and the BIG ONE.......3Y0J Bouvet Island

One thing is for sure – with the sunspot cycle now taking off and propagation improving all the time – now is the time to make your station ready for the pileups!

PS: Don't forget to check out the often updated DX-World Featured DXpedition Timeline top right of this website. (October coming soon).

DX WORLD.net
FEATURED DXPEDITIONS TIMELINE

Last update: October 10, 2022

	S79/OE1MWW	P29RO
D60AE	JS6UKY/6
AH0/WA7WJR	7Q6M
TX7G	J28MD
8Q7TD	JD1BQP
5R8FG	5V7RU
S79/DL5RDO	VK9CM
VP2MXX	PJ5/W5JON
3A/DL2SBY	V47T
TY0RU	K6VHF/HR9

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
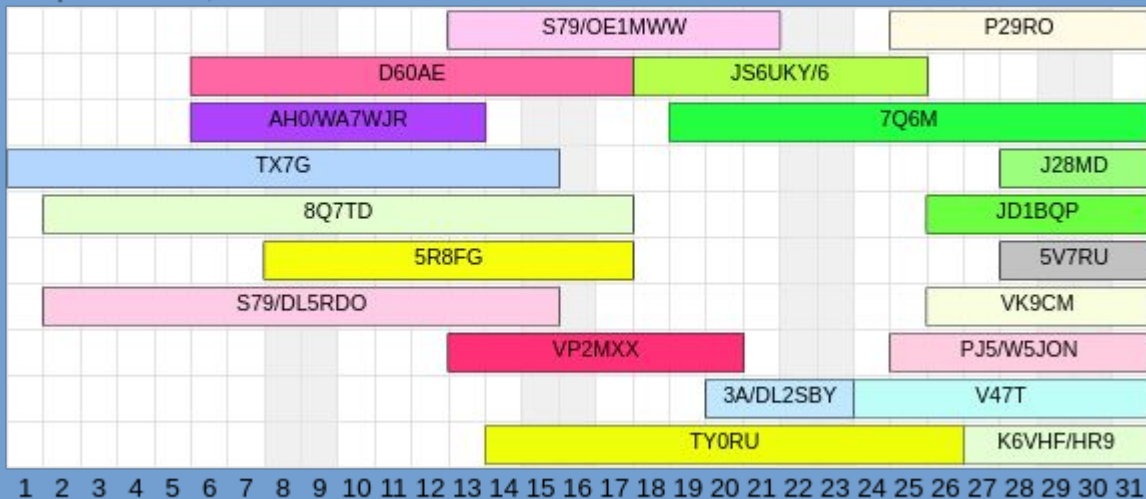
Edited by MM0NDX   **OCTOBER**   (cc) IK8LOV Max Laconca

PREMIUM ADVERTISER IV

SO POWERFUL
IT'S BARELY LEGAL

FlexRadio

WSJT-X - FTdx3000-F...

EN   Mon Oct 10, 11:32

Chasing DX (cont.)

- Do:
  - **Listen Listen Listen** and Listen some more!
    - Make sure you can hear him and verify his call!
  - Figure out his timing and where he is listening and transmit accordingly
    - Often UP 1-KHz or more, depending on demand
  - Use full QSX (break-in) and "Split"
    - Learn how to rapidly use dual VFOs and/or XIT/RIT functions on your rig
  - Be courteous and concise
  - Understand Propagation and Be Patient
  - Take a look at QRZ.com and/or the DXpedition website for operating plans and QSL info
- Don't be the lid who:
  - Tunes up and/or transmits on top of the DX!!!
  - Continues to use simplex when the DX is running split (3Y0J **UP**)
  - Continues to call when the DX is clearly calling someone else
  - Thinks he's the "DX Police"

My Recent Contact
with D60AE (Comoros)

- Turned on radio to participate in SST

- Saw D60AE Spotted on 20m – clicked on it

- He was ~539 and a large pile-up extending up ~10 KHz

- Watched SDR waterfall to see who he was working
  - About 7.5 KHz up, slowly moving down

- Set my rig to "split" while listening to a few more contacts

- Moved my XIT down a little more, threw out my call
  - After 4 or 5 tries, he came back with WW2IL
  - I sent AA2IL one more time
  - Exchanged 5NNs and 73s
  - Confirmed "In the Log" the next day on Clublog

- Remember, I'm only running 100 W and wire antennas
  - Approximately 10,500 miles distance

SDR Panadapter (Post-QSO)

SDR Panadapter (Benin TY0RU)

Session 12

- Go over h/w and on air activities
- Upcoming contests
  - CQ WW SSB
  - ARRL Sweepstakes
  - CQ WW CW
- Loose ends:
  - Jim says TS590 "Drive" output can be connected to an SDR
    - Apparently intended for panadaptor or amplifier
  - TS2000 doesn't appear to have easy access to RF or IF
    - Many mods showing how to tap into IF are available
  - IC7610 has dual receivers and panadaptors – nice!
  - Use notch filter to suppress pesky tones
- Math Drill

CW Math Drill

- 1 **plus** 2

- Is 3   R   **times** 5

- Is 15   R   **div** 3

- ?   15 **div** 3   Is 5   R   **minus** 1

- Etc.

- Use ? Or AGN? for repeats and R to confirm answer
  - Try not using "voice" since you can't on the air

- No Cut Number this time -We'll do that next time

Week 7 - Session 13

- Go over h/w and on air activities

- Upcoming contests
  - CQ WW SSB (This weekend – look for CW activity DX B4 and after)
  - ARRL 160m (December)
  - ARRL 10m (December)

- Cut Numbers

- Math Drill using Cut Numbers

Cut Numbers

- In the CWTs and many of the larger contests, you will hear ops use abbreviations for numbers in the exchange
  - 599 → 5NN or even ENN
  - 11 → AA
  - 100 → 1TT or ATT
  - 1090 → ATNT
  - 2198 → UAND
- Other than 5NN, I don't like this practice and advise against it
  - However, others use it so you need to understand it!
- Another place where a cut number can be somewhat useful is if you enter a contest late, you can send a leading "T" to alert the other station to this:
  - 4 → T4 or TT4
- I advise against sending leading zeros for numbers above 9

Cut Numbers (cont.)

- Acceptable:
  - 0 → T or the letter O
  - 1 → A
  - 9 → N

- Creative (Don't Use!):
  - 5 → E
  - 2 → U
  - 8 → D

CW Math Drill

- 1 **plus** 2
- Is 3   R   **times** 5
- Is 15   R   **div** 3
- ?   15 **div** 3   Is 5   R   **minus** 1
- Etc.
- Use ? Or AGN? for repeats and R to confirm answer
  - Try not using "voice" since you can't on the air
- You can use Cut Number this time – T, O, A and N

Session 14

- Go over h/w and on air activities
- Upcoming contests
  - CQ WW SSB & CW – Look for DX activity B4 and after the contest
  - ARRL 160m (December)
    - I neglected to mention the Stew Perry 160m contest last weekend
    - 160m contests generally generate a lot of CW   activity
  - ARRL 10m (December)
- QTCs
- "Squeeze" Sending
- A quick note about RTTY
- "Grocery store" drill:
  - Items you might find in a grocery store
  - Build list until someone finally can remember the list
  - Prior person confirms or corrects the list

QTCs

- Some European contests include "QTCs" which add another level of difficulty to the exchange
  - A QTC is the info from a previous contact you had in the contest
  - True test of skill since nearly impossible to predict
- Example (Time Call Number)

CQ TEST SV2HUD

NJ7V

NJ7V TU 5NN 123

TU 5NN 456

R QTC?

R 1608 KM6GOX 455

R ...

- YL3JD's QTC Trainer: https://yl3jd.fizioikskile.lv/qtc/
- YL3JD's Contest Trainer: https://yl3jd.fizioikskile.lv/fsm/

"Squeeze" Sending

- CWops encourages use of paddles and electronic keyers
  - Cleaner fist at faster speeds
  - Most ops "hit a wall" at 15-20 wpm using a straight key
  - Eventually, you will hit a wall with a keyer also → keyboard sending
- There are two types of paddles
  - Single lever
  - Dual lever
- With a dual lever paddle, you can "squeeze" the levers together to form letters with alternating dit/dah patterns:
  - Reduces number of "motions" required to form a symbol
  - A, C, K, N, R, period, …
  - Can even combine squeeze technique with "non-squeeze" to form most other symbols
    - K, R, L, F, Q, Y, ...

"Squeeze" Sending (cont.)

- If you don't "squeeze," there is no real difference between single and dual-lever paddles

- There are two Iambic "squeeze" modes:
  - Mode A: Sending stops after current element is sent
  - Mode B: Alternate element is sent before sending stops

- Excellent video demonstration by AA4OO:
  - https://www.youtube.com/watch?v=6R4t3Wq1Gic

RTTY Contesting

- Many CW contesters also enjoy RTTY contesting
  - Fast paced, rates can approach those of CW
  - Most modern rigs have soundcard built-in so mostly plug-and-pray
  - Signaling is not as efficient as CW but higher than voice
  - Ops tend to naturally spread out so its not the QRM-fest typical of FTx contests
- Good place to experiment with SO2R/SO2V
  - Decoding is off-loaded to your computer
- Do NOT use cut numbers
  - All symbols are 5-bits
  - Switching between two tables with 32-symbols each
  - Actually takes longer to send 5NN than 599
- Send <CR> and spaces before and after your messages to help separate noise
- See rttycontesting.com for more info

Week 8 - Session 15

- Go over h/w and on air activities

- Upcoming contests
  - ARRL Sweepstakes – complicated exchange
  - ARRL 160m (December)
  - ARRL 10m (December)

- Operating aids

- ? Drill
  - Store game
  - Sentances
  - Ragchew QSO
  - Other?

My Favorite Ham Websites

- Contesting related:
  - WA7BNM's Contest Calendar: contestcalendar.com
  - WA7BNM's Contest Score Rumors: 3830scores.com
- DX Cluster:
  - DX Heat: www.dx-world.net
  - DX Watch: dxwatch.com
- Activity:
  - Reverse Beacon Network: reversebeacon.net
  - PSK Reporter: pskreporter.info
- Chasing DX:
  - DX World: dx-world.net
  - DX News   https://dxnews.com/
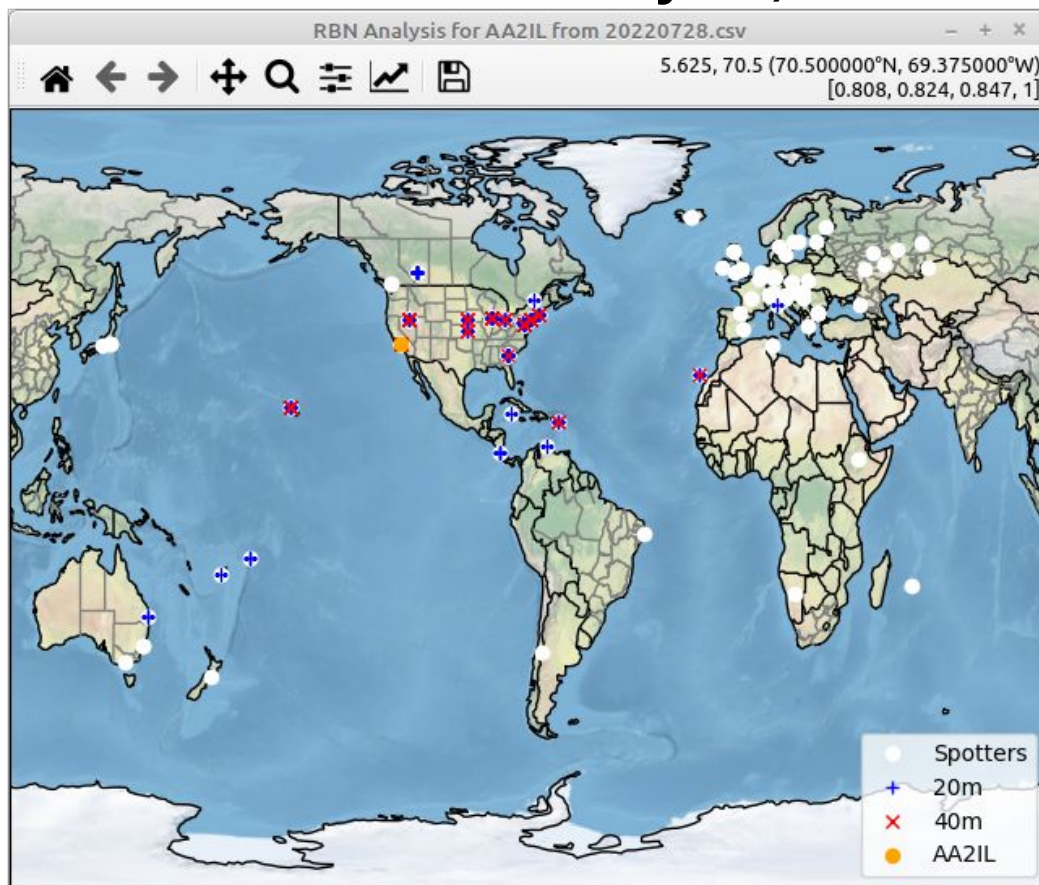- There are many other very good sites

Reverse Beacon Network (RBN)

Can You Hear Me Now?
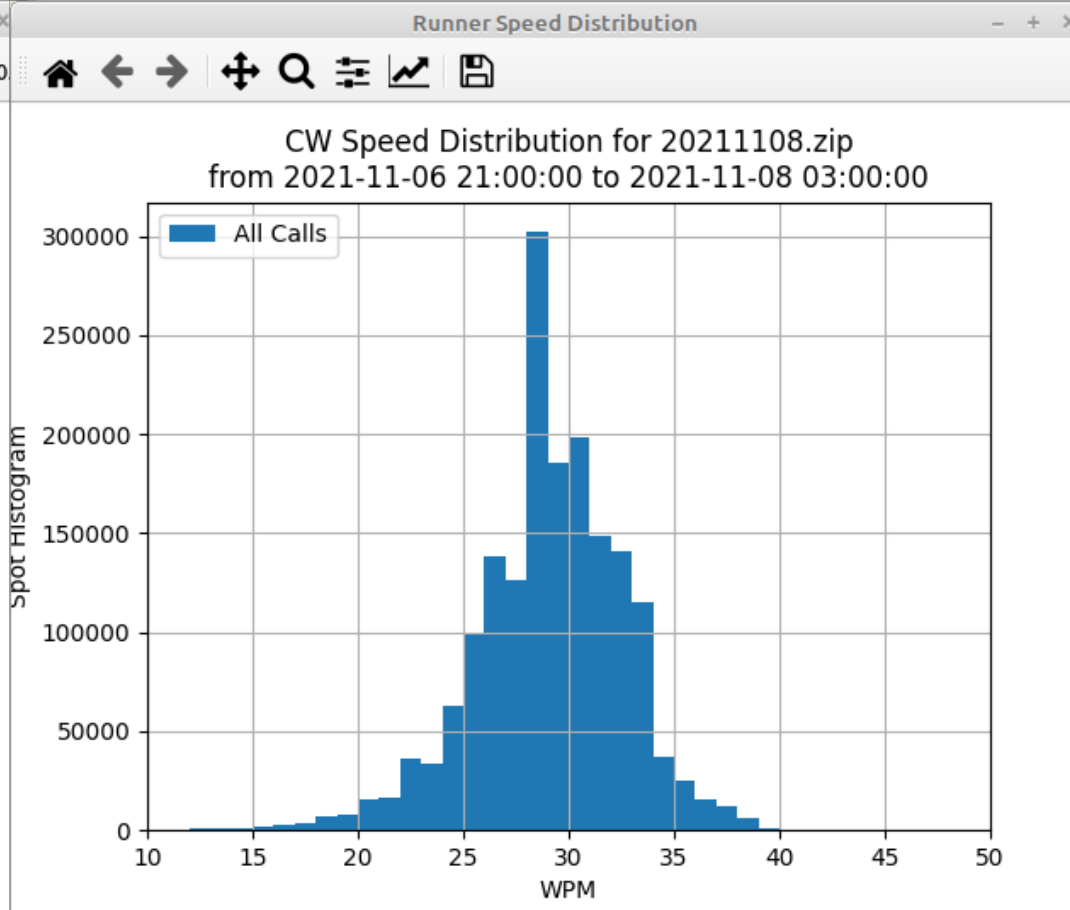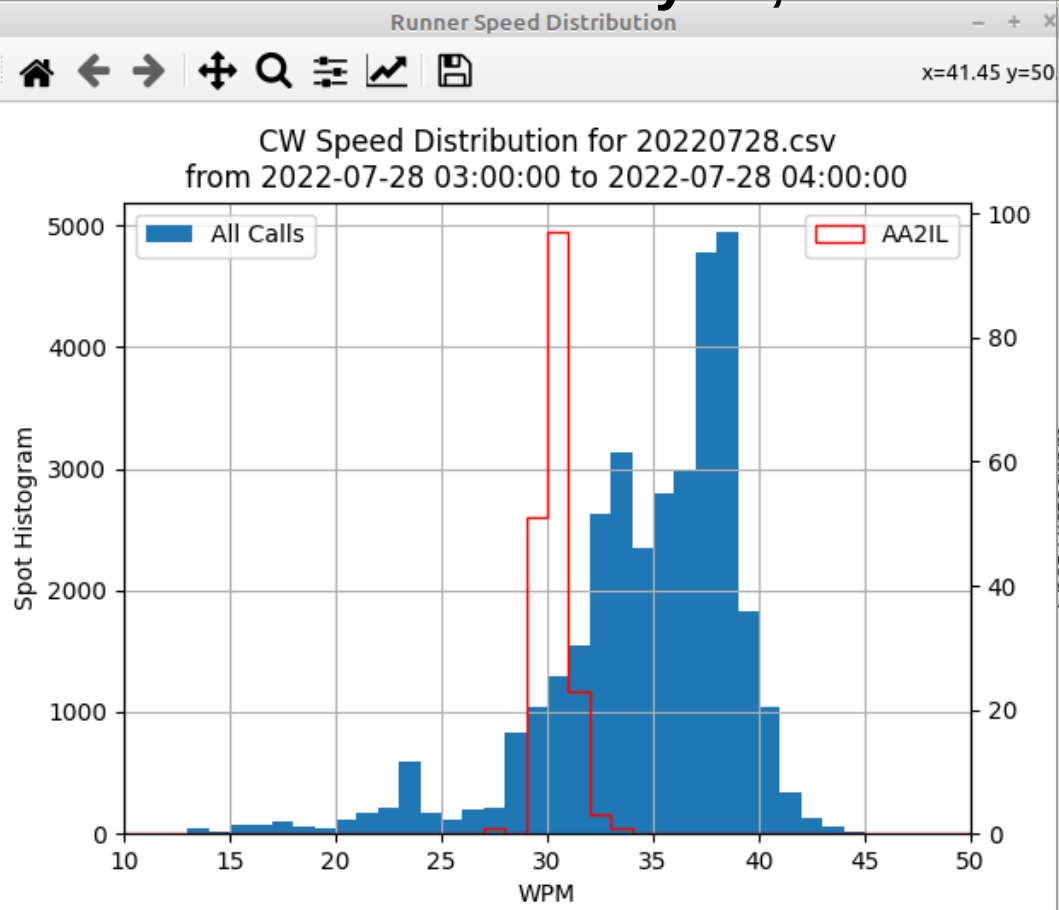
CWT 0300-0400 July 28, 2022

NAQP CW Aug 6-7, 2022
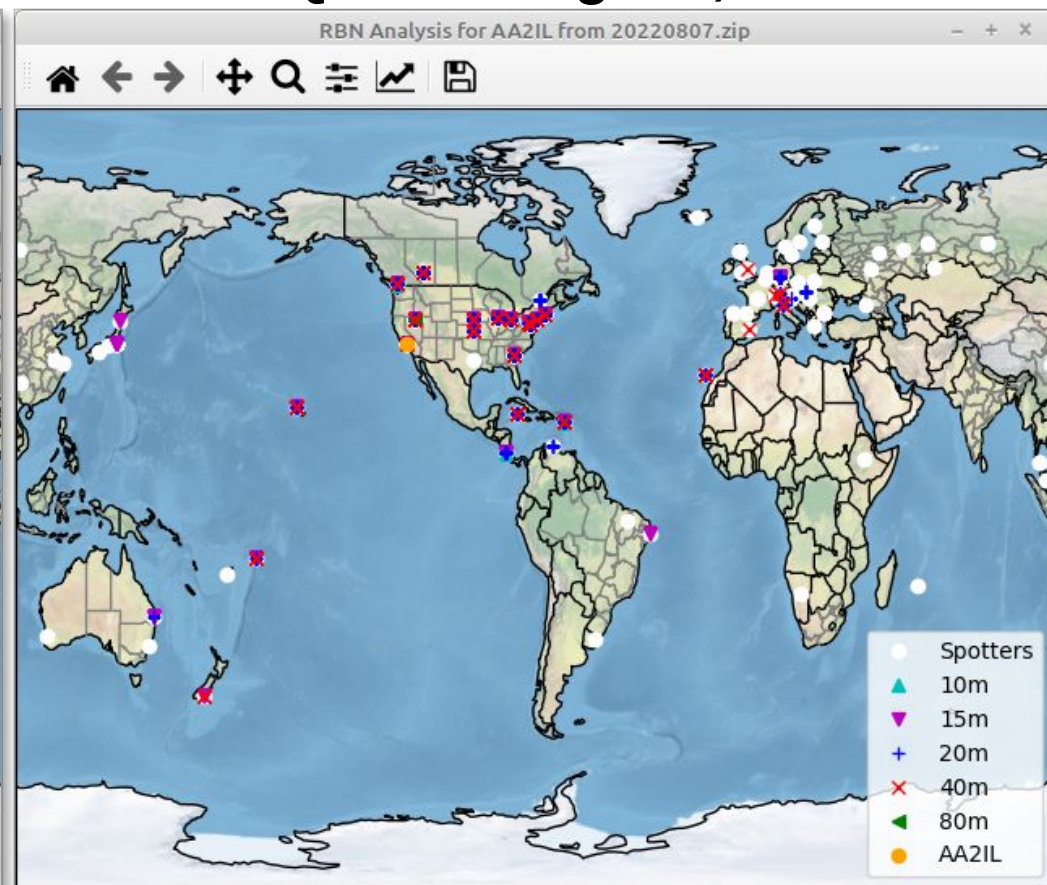
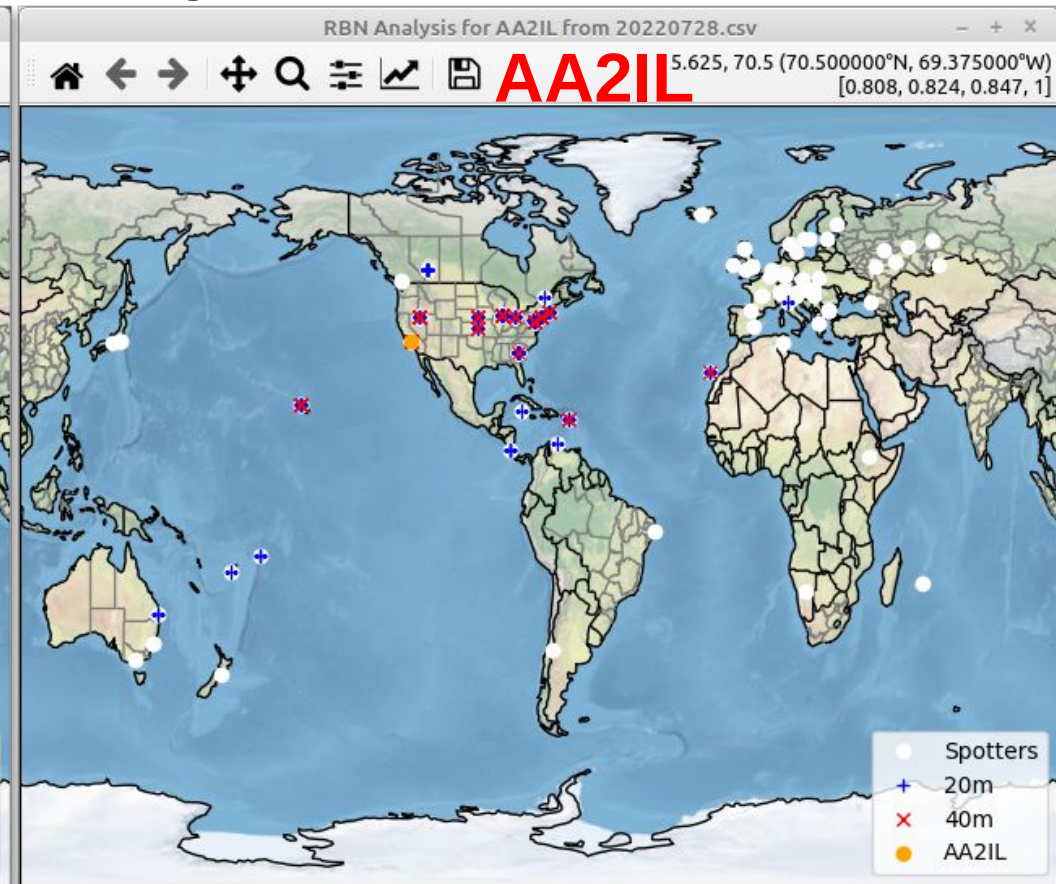# Speed Analysis

CWT 0300-0400 July 28, 2022   ARRL SS CW Nov. 2021

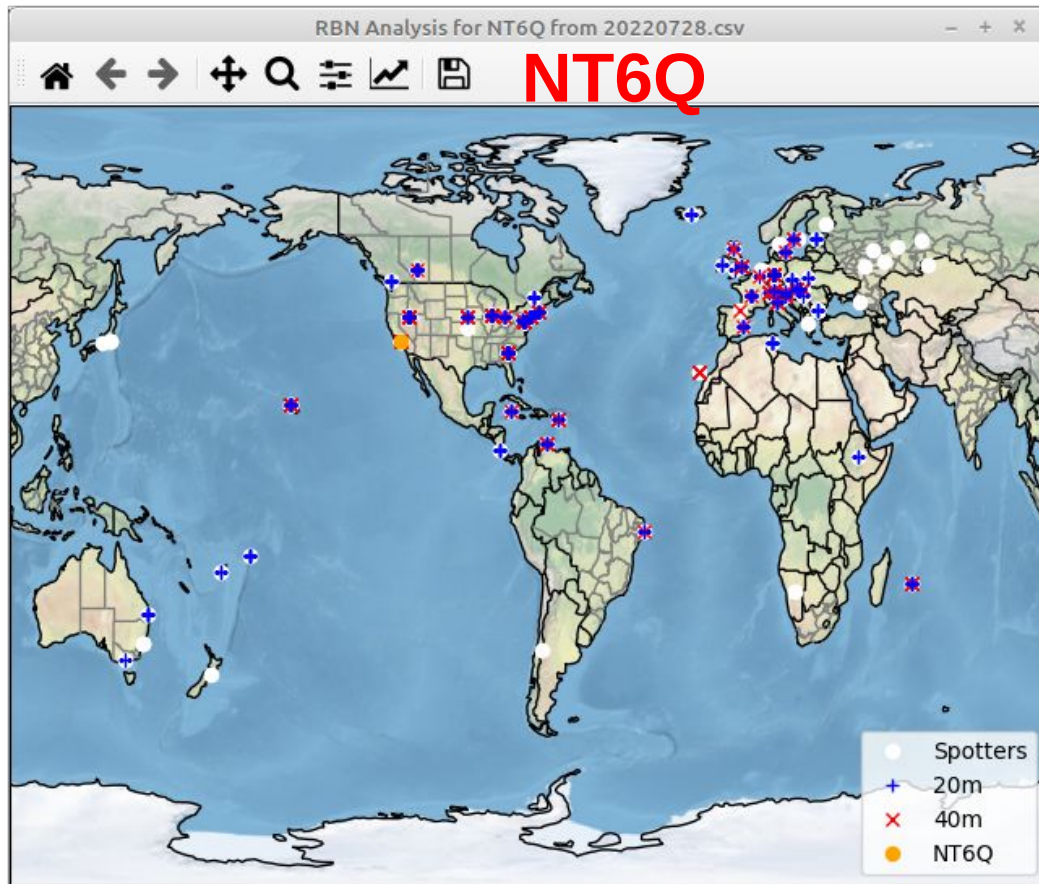# Big Gun vs Little Pistol

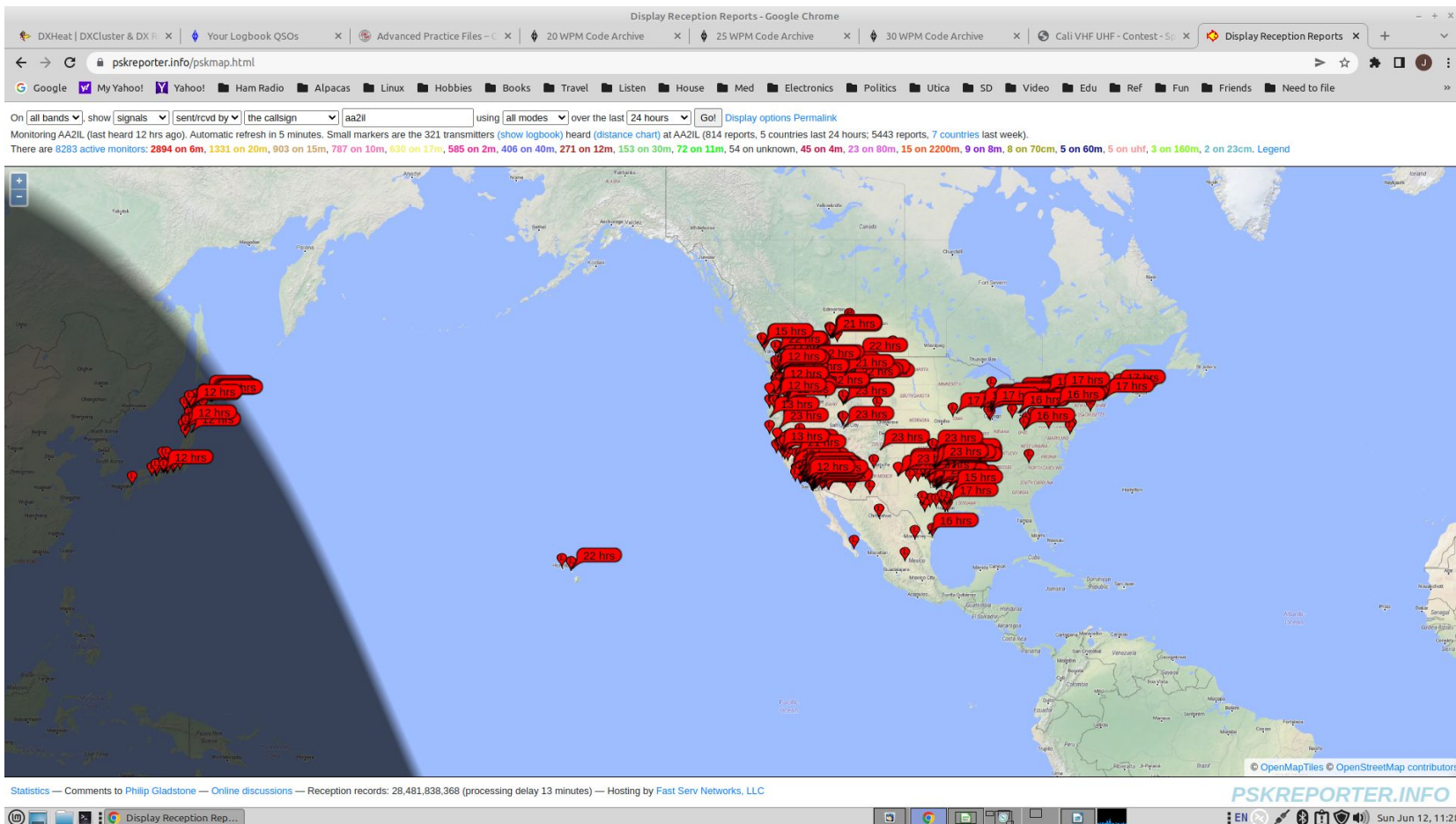## CWT 0300-0400 July 28, 2022

PSK Reporter – Stations Who Heard Me on 6m During the June VHF Contest

Session 16 – Graduation!!

- Go over h/w and on air activities
- Other CW contests
  - NAQP – January and August
  - ARRL International DX – February
  - CQ WPX CW - May
  - IARU HF Champs – July (WRTC)
  - CWops CW Open – September
  - …
- CW Ops
- Certificates

CWops Membership

- Our class is unusual in that we now have 3-members

- Demonstrate Proficiency at 25-WPM or higher

- Nominatation + 3-sponsers

- $12/yr or $100 for life
  - Fee structure is changing in January so cheaper now to upgrade to life membership if you are considering this

CWops Activities

- CWTs, CW Open, OTA Give Back, QTX
- CWA - **Please consider becoming a Advisor**
  - You can also be a co-adivsor
- Solid Copy - Monthly Newsletter
- E-mail Reflector
- Awards: CWT Participation, ACA, CMA, WAS, DXCC, WAE, WAZ ...
  - Upload your logs to https://cwops.telegraphy.de/
  - Post CWT summaries to https://3830scores.com/

Final Comments

- It has been a genuine pleasure working with each of you
  - You each have made significant progress
  - There is an optional self-evaluation on the CWops website
- Please keep in touch
- Keep on practicing
- Get on the air!
- Please provide feedback to me on this class:
  - Overall format (too much talk, not enough practice?)
  - Topics you would have like to see
  - Topics that we should have skipped ...
- If any of you are linux hackers and are interested, I'd like some collaborators on the operating tools I showed you

Other Topics – Next Time?

CW Academy

- SOTA/POTA

- Sprints