

How to Succeed at DX with a Modest Station

K2OJD, Bob Karz

XRX Radio Club

April 12, 2018

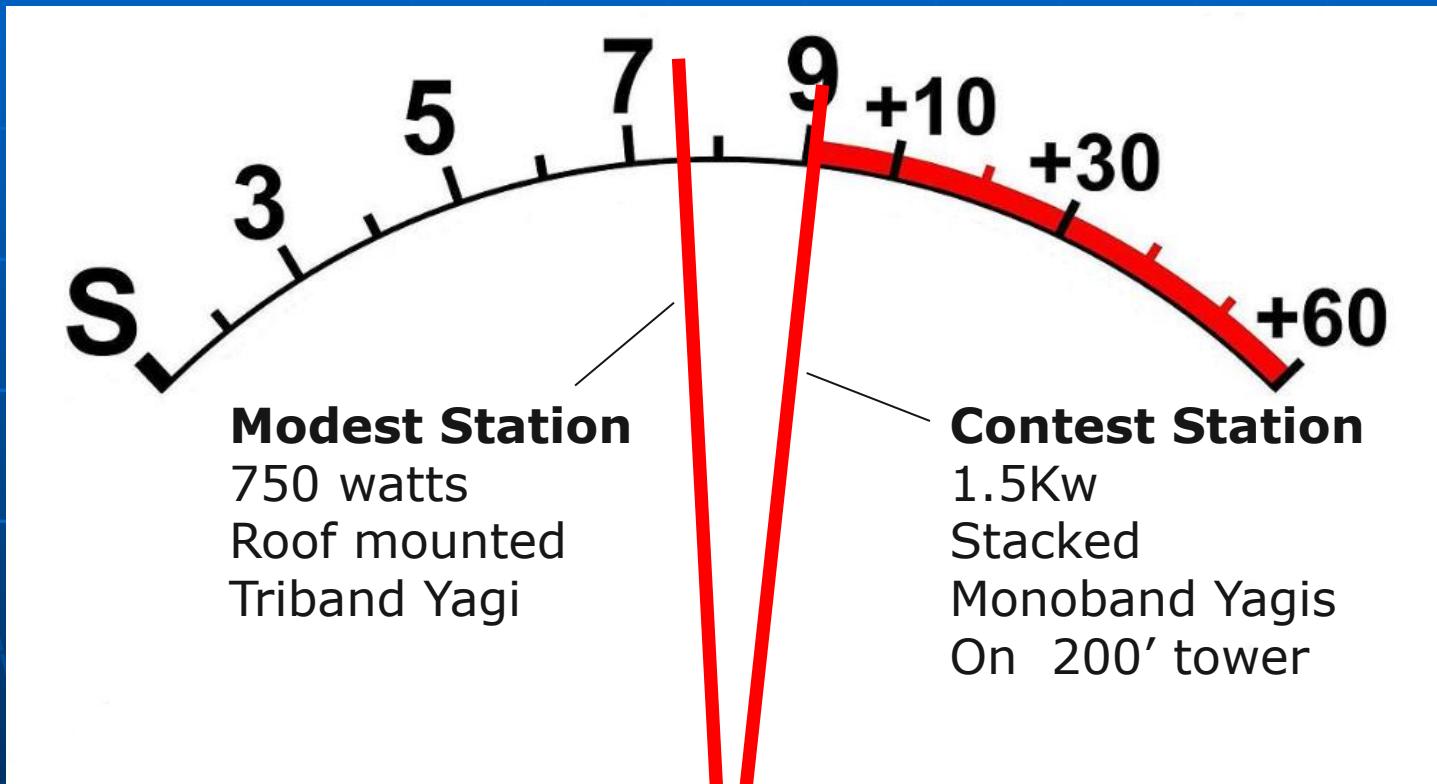
Agenda

- The Challenge
- What is DXCC?
- Using DX clusters and other internet resources
- Using Propagation to your advantage
- DX tips for building your country count and snagging rare ones
- Working DXpeditions when you don't have a "super station"
- When your equipment budget is limited
- Tracking progress
- Getting your QSOs confirmed
- Take aways

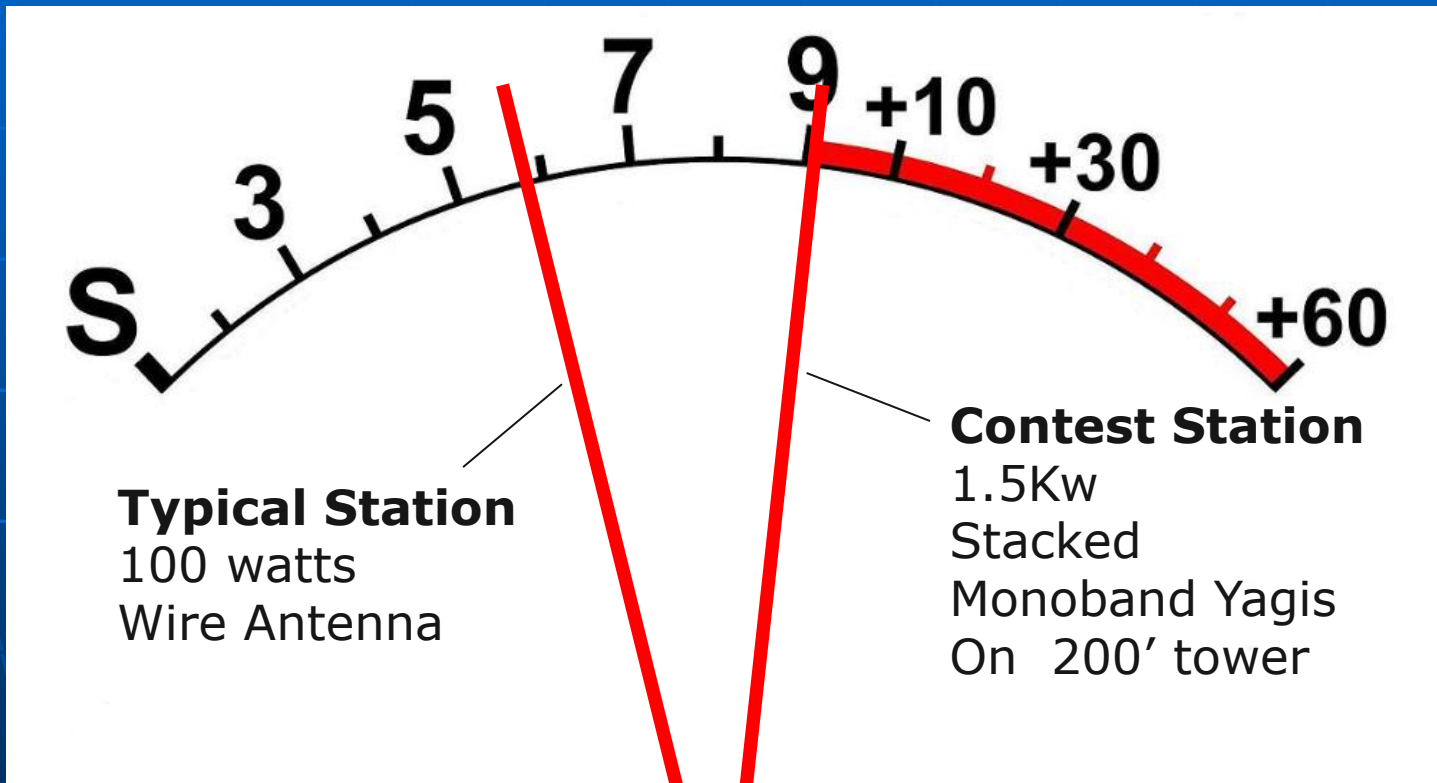
Working DX the “Easy Way” (W2FU Contest Station)



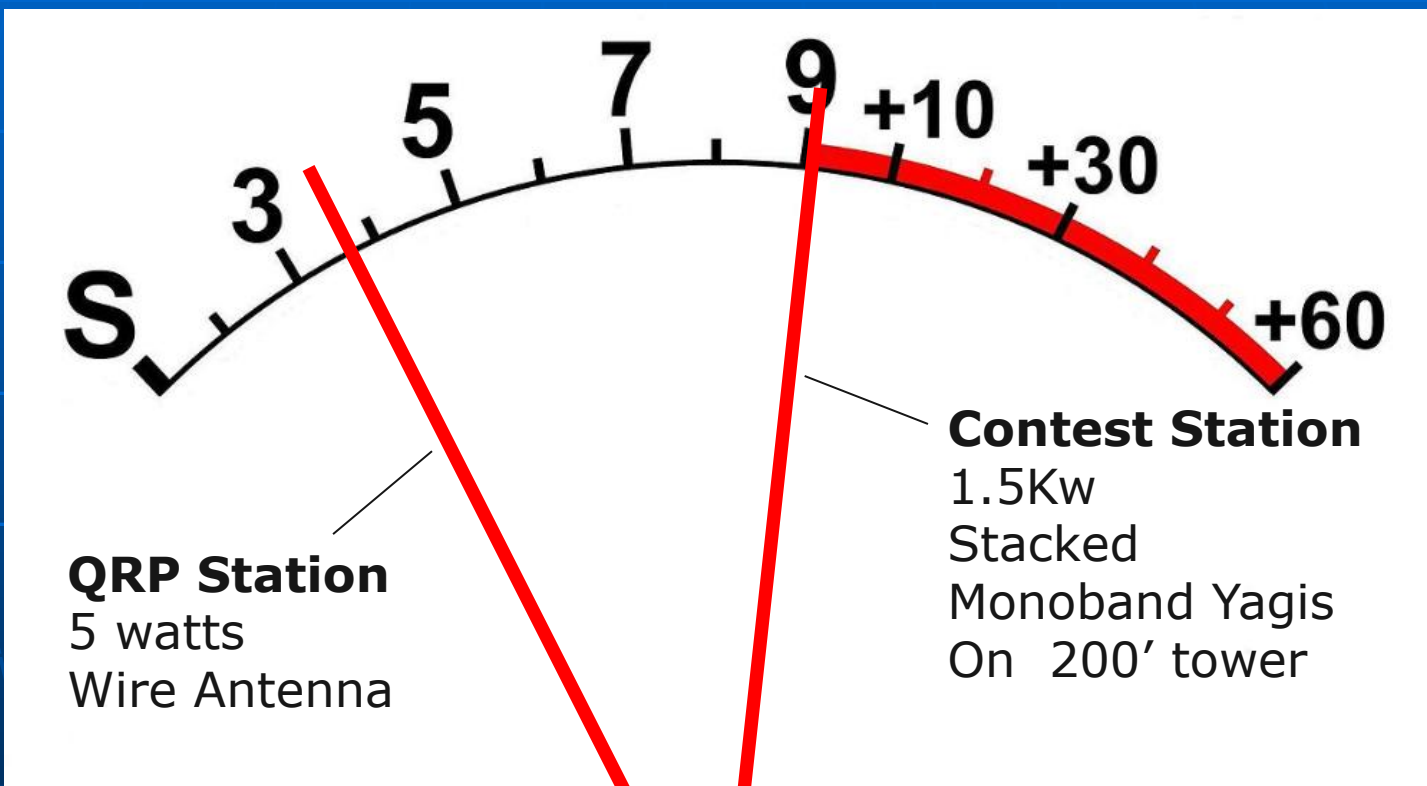
The Challenge - Modest Station



Typical Station



QRP Station



What is DXCC?

- The ARRL DX Century Club (DXCC) sets the rules
 - The World is made up of 340 “countries” including:
 - Nations
 - Political entities (e.g. Vatican, Sovereign Military Order of Malta, United Nations Vienna)
 - Separated parts of countries (e.g. Alaska), islands (e.g. Norfolk Island)
 - 100km land, 350 km water

What countries are “Active” now

- DX bulletins

- Ohio Penn DX Bulletin

- www.papays.com/opdx.html

Ohio Penn DX Bulletin

BW, TAIWAN. Bodo, DF8DX, will be active as BW/DF8DX from Taiwan (AS-020) between June 24-30th. Activity usually will be on 40-10 meters using mainly CW with 100 watts into a vertical antenna. QSL via his home callsign, by the Bureau, direct or LoTW.

CN, MOROCCO. M'hamed, CN8NK, in Rabat, will be active as CN4P during the CQWW WPX SSB Contest (March 24-25th) as a Single-Op/Single-Band (??m) entry. QSL via EA5XX.

CU4/CT8, AZORES (Rare IOTA). Operators R7KW, RW7K, UZ5DX are now active as CT8/homecall from the rare IOTA Graciosa Island (EU-175) in the Azores Group. QSL via their home callsign. They plan to be active as CU4DX during the ARRL International DX CW Contest (February 17-18th) as a Multi-Single/High-Power entry. QSL via CU2CE or LoTW.

D4, CAPE VERDE. Rudi, DK7PE, is now active as D44TPE from Santiago Island. The length of his stay is unknown. Activity will be holiday style on various HF bands. QSL via DK7PE.

E2, THAILAND. Champ, E21EIC, will be active as E2A (The SIAM DX Group/Contest Callsign) from Bangkok during the ARRL International DX CW Contest (February 17-18th) as a Single-Op/All-Band/High-Power entry. QSL via

What countries are “Active” now

■ DX bulletins

- Ohio Penn DX Bulletin

- www.papays.com/opdx.html

- ARRL DX Bulletin

- Sign up for weekly e-mail at ARRL.org

ARRL DX Bulletin

rochest × + ▾

🔒 <https://webmail.rochester.rr.com/do/mail/message/view?msgId=INBOXDELIM49561>

Subject: ARLD009 DX news

Priority: Normal **Date:** Thursday, February 22, 2018 7:19 PM **Size:** 6 KB

SB DX @ ARL \$ARLD009
ARLD009 DX news

ZCZC AE09
QST de W1AW
DX Bulletin 9 ARLD009
From ARRL Headquarters
Newington CT February 22, 2018
To all radio amateurs

SB DX ARL ARLD009
ARLD009 DX news

This week's bulletin was made possible with information provided by AA3B, EA5GL, WB0TEV, WE9V, The Daily DX, the OPDX Bulletin, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

ROTUMA ISLAND, 3D2. A group of operators are QRV as 3D2EU until March 16. Activity is on 160 to 10 meters using CW, SSB and various digital modes. QSL via DK2AMM.

TANZANIA, 5H. John, KB7LBY will be QRV as 5H2LBY while ascending Mount Kilimanjaro from February 25 to March 2. Activity will be limited during his climb to 40 and 20 meters using QRP power. QSL via LoTW.

NEPAL, 9N. Charles, KE5GD is QRV as 9N7CR until March 1. He is active on 20 meters using SSB from around 1200 to 1400z. QSL to home call.

ETHIOPIA, ET. Mike, OM2DX is ORV from Addis Ababa from the

What countries are “Active” now

■ DX bulletins

- Ohio Penn DX Bulletin

- www.papays.com/opdx.html

- ARRL DX Bulletin

- Sign up for weekly e-mail at ARRL.org

- Other Sites

- www.425dxn.org/

- DARC DX Bulletin

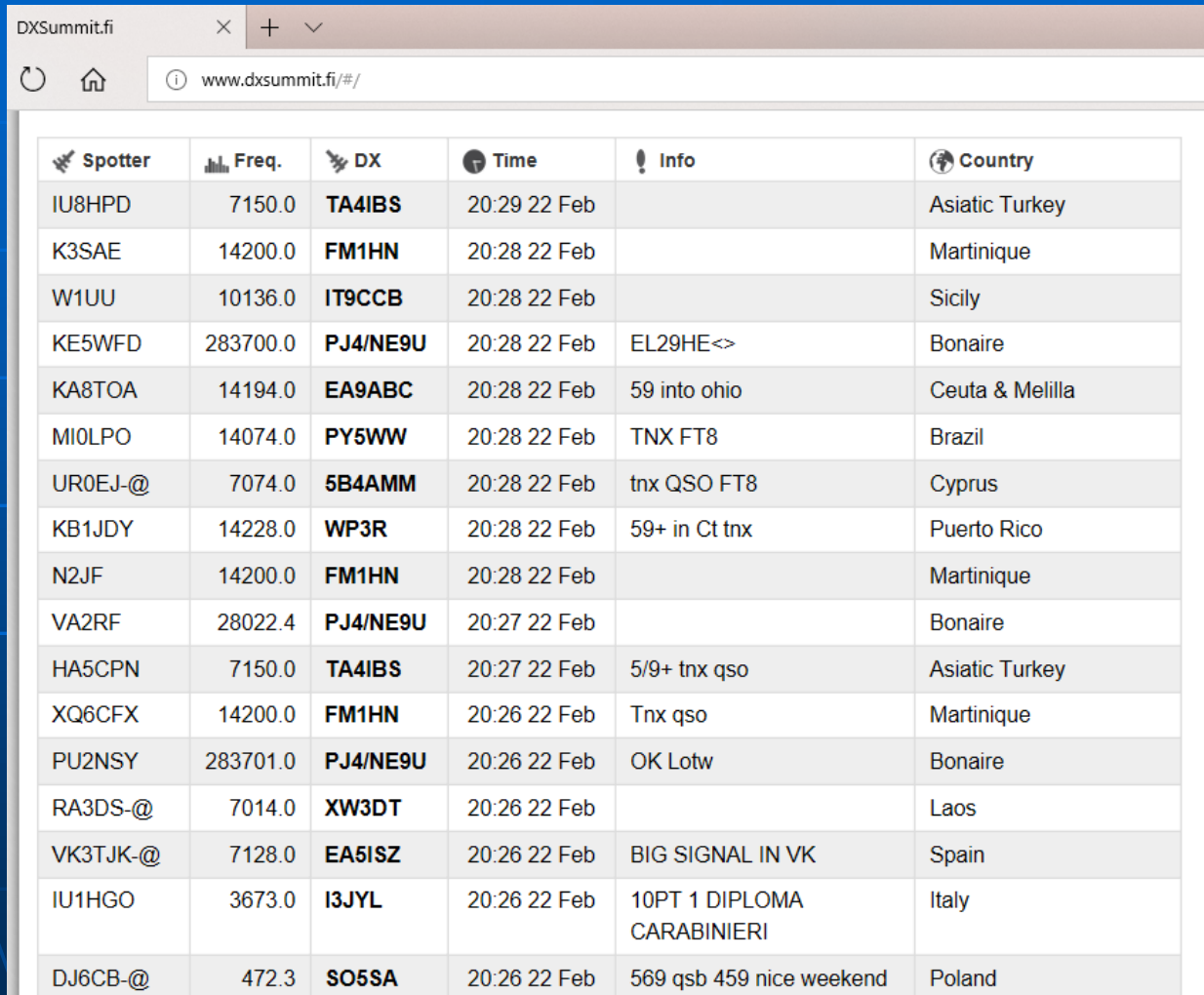
<http://www.py2kp.com/leitura-2.html>

- www.dailydx.com/ (pay site)

Yes, but who operating right now?

- DX Clusters
 - DX Summit (my favorite)
 - www.dxsummit.fi/

DX Summit Screenshot



The screenshot shows a web browser window with the URL www.dxsummit.fi/#/. The main content is a table with columns for Spotter, Freq., DX, Time, Info, and Country. The table lists various amateur radio spots with their call signs, frequencies, and details.

Spotter	Freq.	DX	Time	Info	Country
IU8HPD	7150.0	TA4IBS	20:29 22 Feb		Asiatic Turkey
K3SAE	14200.0	FM1HN	20:28 22 Feb		Martinique
W1UU	10136.0	IT9CCB	20:28 22 Feb		Sicily
KE5WFD	283700.0	PJ4/NE9U	20:28 22 Feb	EL29HE<>	Bonaire
KA8TOA	14194.0	EA9ABC	20:28 22 Feb	59 into ohio	Ceuta & Melilla
MI0LPO	14074.0	PY5WW	20:28 22 Feb	TNX FT8	Brazil
UR0EJ-@	7074.0	5B4AMM	20:28 22 Feb	tnx QSO FT8	Cyprus
KB1JDY	14228.0	WP3R	20:28 22 Feb	59+ in Ct tnx	Puerto Rico
N2JF	14200.0	FM1HN	20:28 22 Feb		Martinique
VA2RF	28022.4	PJ4/NE9U	20:27 22 Feb		Bonaire
HA5CPN	7150.0	TA4IBS	20:27 22 Feb	5/9+ tnx qso	Asiatic Turkey
XQ6CFX	14200.0	FM1HN	20:26 22 Feb	Tnx qso	Martinique
PU2NSY	283701.0	PJ4/NE9U	20:26 22 Feb	OK Lotw	Bonaire
RA3DS-@	7014.0	XW3DT	20:26 22 Feb		Laos
VK3TJK-@	7128.0	EA5ISZ	20:26 22 Feb	BIG SIGNAL IN VK	Spain
IU1HGO	3673.0	I3JYL	20:26 22 Feb	10PT 1 DIPLOMA CARABINIERI	Italy
DJ6CB-@	472.3	SO5SA	20:26 22 Feb	569 qsb 459 nice weekend	Poland

Yes, but who operating right now?

■ DX Clusters

- DX Summit (my favorite)

- www.dxsummit.fi/

- QRZCQ

- <https://www.qrzcq.com/page/dxcluster>

QRZCQ Screenshot

DX Cluster on QRZCQ - x + v

← → ↻ 🏠 🔒 <https://www.qrzcq.com/page/dxcluster> 📖 ☆ ⚙️ 📄 📧 ⋮

QRZCQ - The database for radio hams [Report a problem](#) [Help](#) 2018-02-22 20:33:27 UTC 📍

Call: [SEARCH](#) [Advanced](#) Call: Pass: [LOGIN](#) or [register](#)

Home
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OnAir
Register
Logbook
Search
ARLog2
Ham Maps
DX Cluster
 Search
 DX Map
 Hot DX
 DXpeds
 Last 24h
 Users only
 IOTA only
 SOTA only

You are here: QRZCQ > Home > DX Cluster

DX Cluster

DX-Cluster spots between 2018-02-22 20:33:19 and 2018-02-22 20:33:28 in the last 7 hours <https://www.qrzcq.com/page/dxcluster> 🔊

Date / Time	Frequency	DX Call	Spotter	Remarks
2018-02-22 20:33:26	1840.0 kHz	HG4GFP	IK8GYS	HUNGARY
2018-02-22 20:33:19	1812.2 kHz	RU3II	OH6LI	cq
2018-02-22 20:33:03	14074.0 kHz	W9MDB	W4IMD	
2018-02-22 20:32:38	14197.0 kHz	J62ARC	N2JF	
2018-02-22 20:31:58	7145.0 kHz	LZ5DD	ON6DJ	Daniel in Sofia 5/9+
2018-02-22 20:31:23	14200.0 kHz	FM1HN	EA8CX	very strong 59+10. 73 de Gerd
2018-02-22 20:30:28	28370.0 kHz	PJ4/NE9U	PU2NSY	TXN
2018-02-22 20:30:27	3651.0 kHz	IZ1PQL	IZ1PQS	diploma i carabinieri 5 p.
2018-02-22 20:30:27	7074.0 kHz	TA3AHJ	UR0EJ	tnx QSOFT8
2018-02-22 20:30:27	14197.0 kHz	J62ARC	W2NLS	
2018-02-22 20:30:26	14247.0 kHz	FM1HN	K3GC	
2018-02-22 20:30:14	1836.0 kHz	LY100N	UR2LM	tnx QSO
2018-02-22 20:30:03	14200.0 kHz	FM1HN	EA8JK	
2018-02-22 20:29:57	18143.0 kHz	CE1OEB	CE1EES	CQ DX's
2018-02-22 20:29:36	3685.0 kHz	EA7FC	EA7URR	TRO HER DEL ROCIO Y ESPECIAL
2018-02-22 20:29:33	7044.0 kHz	LY100X	YY2RU	CQ RTTY SES
2018-02-22 20:29:20	7077.0 kHz	VK7AC	EA5GSS	tnx QSO
2018-02-22 20:29:10	3532.2 kHz	GM6XX	LB2WG	tnx QSO
2018-02-22 20:29:01	7022.6 kHz	W1MK	UT1ZZ	TXN Rob! 73!
2018-02-22 20:28:46	14228.0 kHz	WP3R	K3SAE	
2018-02-22 20:28:44	7150.0 kHz	TA4IBS	IU8HPD	
2018-02-22 20:28:40	14200.0 kHz	FM1HN	K3SAE	
2018-02-22 20:28:36	10136.0 kHz	IT9CCB	W1UU	
2018-02-22 20:28:26	7074.0 kHz	5B4AMM	UR0EJ	tnx QSO FT8
2018-02-22 20:28:24	14194.0 kHz	EA9ABC	KA8TOA	59 into ohio
2018-02-22 20:28:19	14074.0 kHz	PY5WV	MI0I PO	TXN FT8

🔍 Type here to search 📱 🖨️ 📧 🛒 🌐 📄 📧 🔊 📶 📶 📶 3:34 PM 2/22/2018 🗨️

Yes, but who operating right now?

■ DX Clusters

- DX Summit (my favorite)

- www.dxsummit.fi/

- QRZCQ

- <https://www.qrzcq.com/page/dxcluster>

- Google DX Clusters for others

■ Provides call sign, mode, frequency, and split information

- Reporting station QTH (from QRZ.com) gives good indication of favorable propagation

Using Propagation

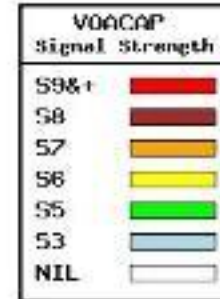
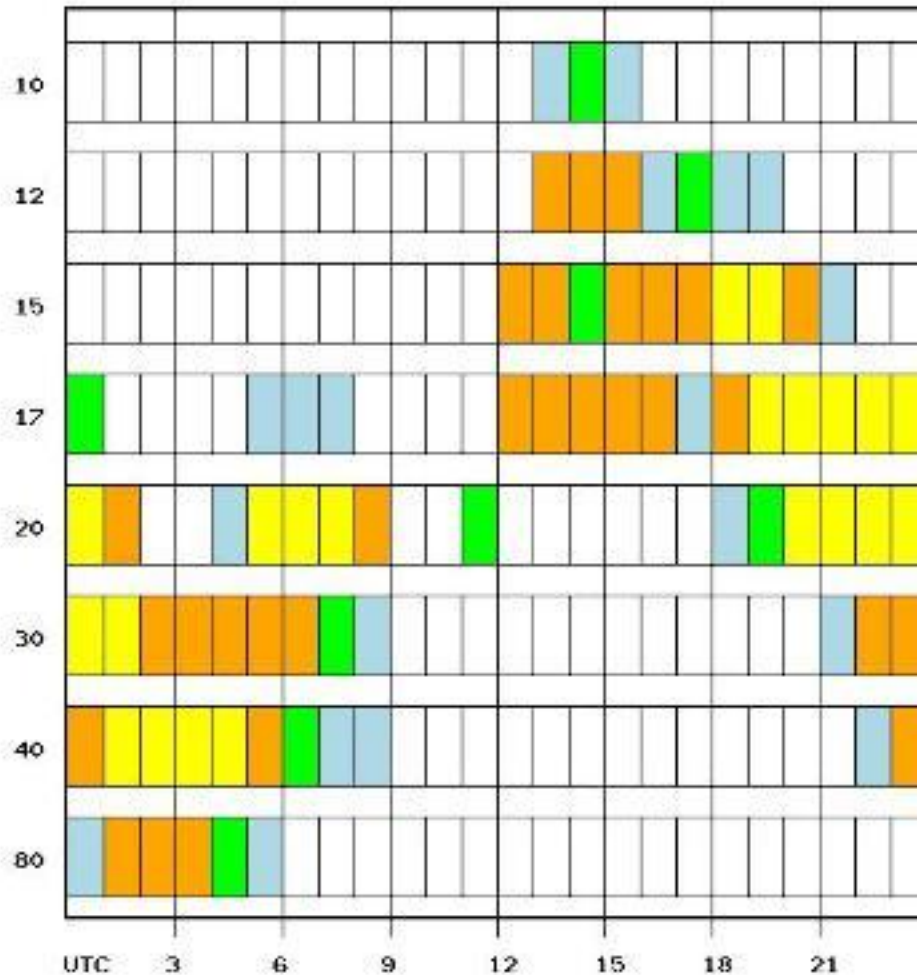
- With favorable propagation you can work anywhere with a few watts (or less)
- With no propagation even 1500 watts and a high gain antenna won't help

Using Propagation

- Propagation forecast websites can be useful
 - DXpeditions often provide free internet tools such as propagation charts

Using Propagation

Bouvet. to K201D



User: 3Y0Z

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Using Propagation

- Keep in mind the Day-Night (Diurnal) cycle
 - 20M and up are daylight bands
 - Europe, Africa, and Middle East in mornings
 - Caribbean and South America mid day
 - Oceania, Asia, Australia late afternoon
 - 80M, 40M and 30M are night time bands for DX. Good for Caribbean but also worldwide
- 11 Year sunspot cycle moves best DX bands to 15 and 10M at peak and 30M, 40M, and 80M at minimum

Using Propagation

- Listen to gauge current conditions
 - Beacons useful
- Propagation can change by minute and “openings” can be unpredictable
 - Listen frequently
- Use grayline to predict possible DX openings
 - <http://dx.qsl.net/propagation/greyline.html>

DX Tips

- Work the “easy” ones first by answering a CQ
 - Good when starting out
 - Lots of hams in European countries, Caribbean, Japan, etc.

DX Tips

- Enter a DX contest
 - So many stations that the competition is reduced.
 - Often some rare ones
 - Read the rules online and listen to exchanges before trying

DX Tips

- Check into a DX net
 - Net control will list the DX checkins
 - When your turn comes up you will be able to call without QRM.
- By the numbers
- Use CW or weak signal digital (JT65, FT8, SSPR)
- Listen, Listen, Listen

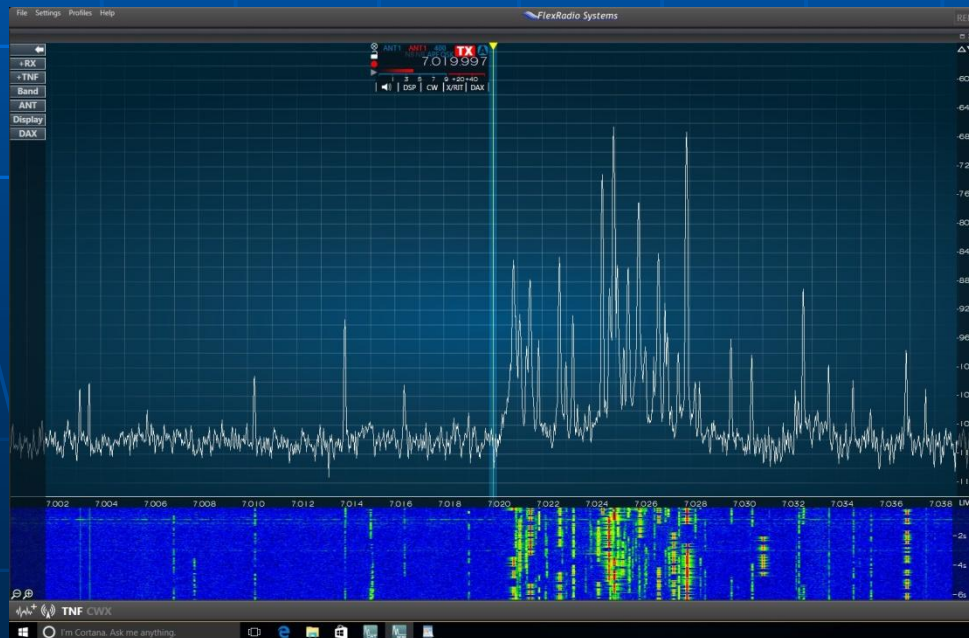
Working DXpeditions

■ DXpeditions

- Of the 340 DXCC countries over half do not have active amateurs
 - DXpeditions are groups of hams who travel to “rare ones” to put them on the air
 - DXpeditions last 1-3 weeks and involve 1-20 operators

Working Split

- DXpeditions work split so they can be heard
 - Split is when the DX station is on one frequency but listens on a range of frequencies usually up the band



Working Split

- The DX station will announce the split frequency as:
 - "listening 5-10 up" or "up 5-10"
 - The split is also given on the DX clusters
- The DX station will sometimes announce restrictions such as
 - "NA only" North America only"
 - "1's only" (only call if your callsign has a "1")
 - "ATNO" All Time New One
 - Only call if you have NEVER worked this country on any band or mode
 - Great for weaker stations

LIDS and Cops

- Expect to hear some idiot calling on the DX station's frequency
 - In response expect some self appointed "cops" to transmit "up up up" in response
 - Apparently the QRMinig station doesn't know what "up" means
- Expect some not to follow instruction
 - e.g. listening for 2's only and hear a 5 station calling

The Exchange

- Send your full call once and listen
- If the DX responds to someone else, wait for a QRZ or CQ then call again
 - DO NOT QRM AN UNGOING QSO!!!
- If you don't hear the DX, send your call and listen again
- You will be sending your call and listening many many many many times

The Exchange

- When you hear your call respond:
 - “5nn TU” (CW) or “59 Thank You” (PH)
 - Note: “5nn” is Morse shorthand for “599”
 - The 599 is an artifact of when signal reports were required
 - If the DX station has a wrong or partial call, send your call once or twice before sending your report

Am I in the Log?

- In the bad old days, you would try to work the DXpedition twice on each band and mode as “insurance”
- These days most DXpeditions upload your call, band, and mode to their own website or the Club Log website (clublog.org)

K2OID

K2OID has worked Z60A on 3 out of 28 band slots

Propagation from **UNITED STATES OF AMERICA (Z5) / USA W2 / STATE:NY / ZONE: 5 / [Geo Propagation Map](#)**

Leaderboard for zone **5 / UNITED STATES OF AMERICA (Z5) / NA**

	10m	12m	15m	17m	20m	30m	40m	80m	160m
SSB	NEW	NEW	NEW	NEW	✓	NEW	NEW	NEW	NEW
CW	NEW	NEW	NEW	NEW	✓	NEW	NEW	NEW	NEW
RTTY			NEW	NEW	✓	NEW	NEW	NEW	NEW
FT8				NEW		NEW	NEW		

Am I in the Log?

- DO NOT work the DXpedition again on the same band/mode unless you are SURE you're not in their log!
 - Note that log updating can take a day or two

Pile-up and DXpedition Tips

- Work split. Never call on DXpedition station's frequency
- Listen and follow DX station's instructions
- Look for holes in bedlam
- Get your timing down
- Anticipate next moves
- Make use of DX station breaks
- Call towards end of DXpedition
- Make use of band conditions

Equipment

- A fancy rig is not required, at least to start
 - Conditions, perseverance and operating skill trump antennas or power
 - Well over 100 countries have permanent amateur populations and can be worked with very modest equipment
 - The better DXpeditions stay long enough for everyone to work them
 - CW and some digital modes easier than SSB
 - A Yagi is better than an amp

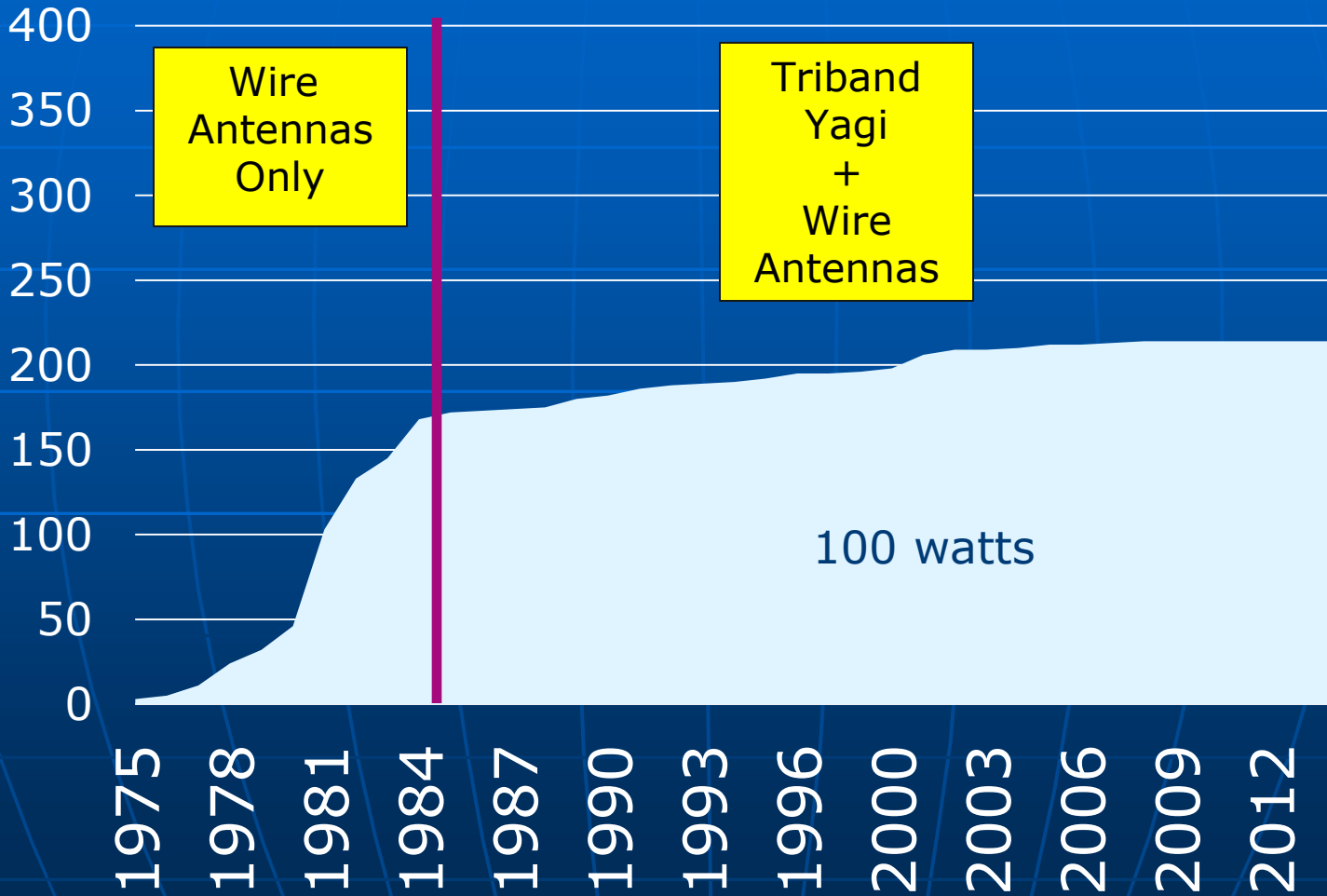
Lowering Cost

- Examples of older rigs
 - Kenwood TS-930 (\$400 - \$500)
 - Kenwood TS-450 (\$500 - \$600)
 - Icom 756 Pro (\$1100)
- You will hear everything, the same as with newer rigs, and have the same output power
- May be missing few “bells and whistles”
 - Built in keyer
 - Panadapter
 - Digital Signal Processing
 - Computer Interface

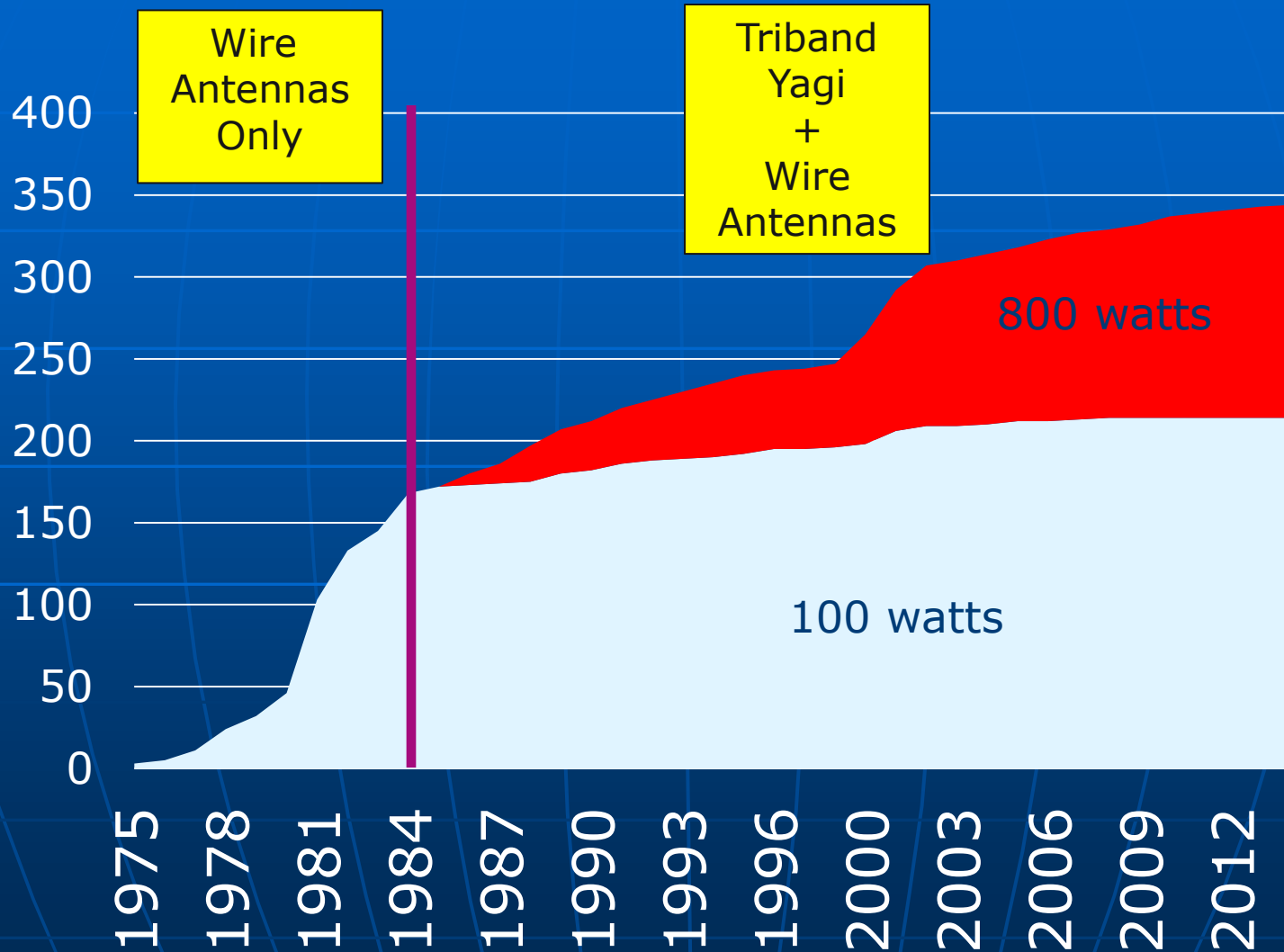
Lowering Cost

- Wire Antennas (Home Brew)
 - Cheap (“free” to ~\$100)
 - Inconspicuous
 - Good when just starting out

My Experience Chasing DX (Total Countries Confirmed vs Time)



Total Countries Confirmed



My "Modest" Station

Dentron
MLA-2500B
800W Amp

Palstar
AT1500C
Ant Tuner

Icom
756 Pro

Kenwood TS930

Flex Radio 6300



My “Modest” Station

- My Antennas:



HyGain EX-14 Triband Yagi



80M Off Center Fed Dipole
(Works on 80, 40, 30, 20,
17,24,28,54 MHz Bands)

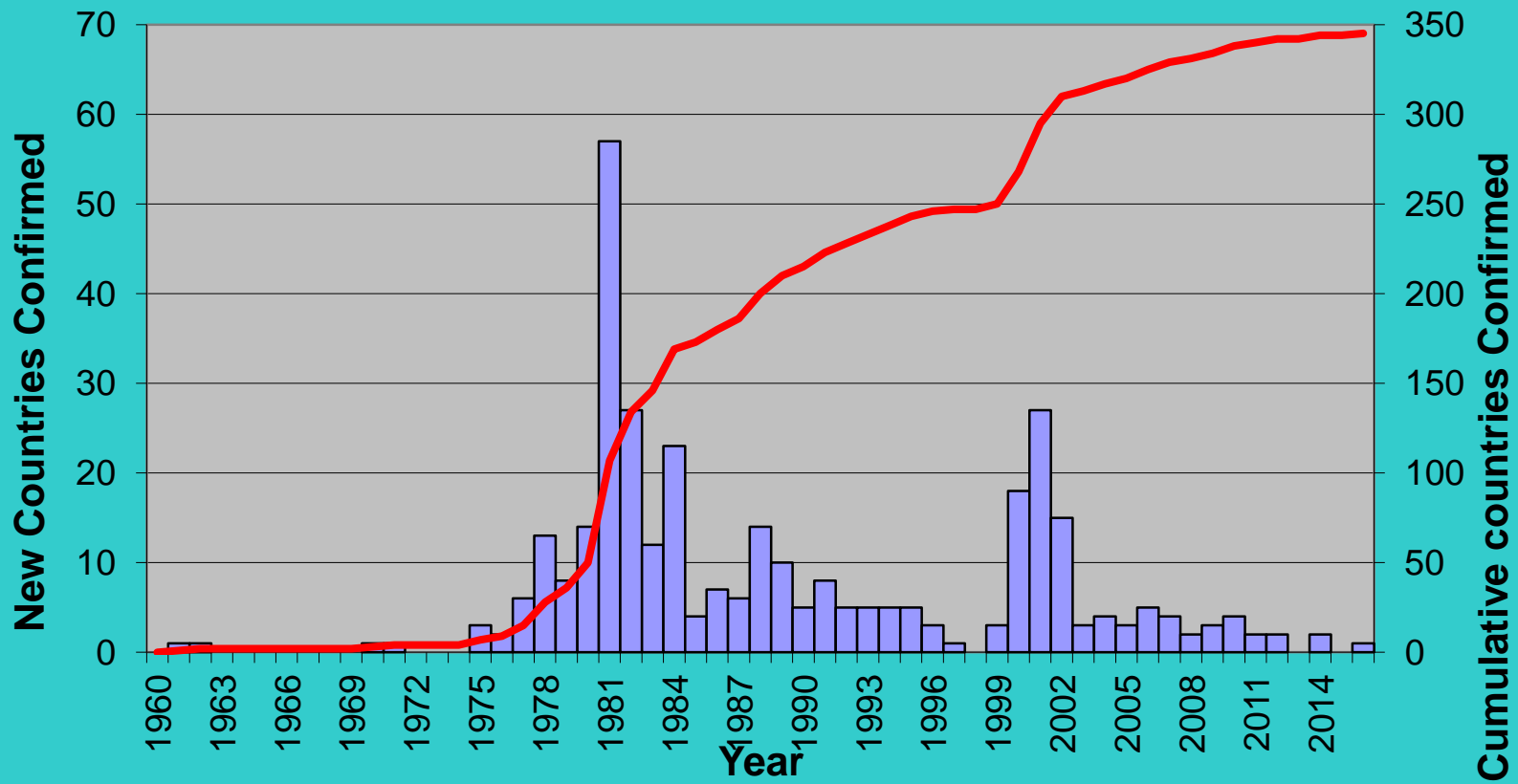
Not an Ideal Location for my Yagi!



Persistence Counts

- You're in it for the long haul

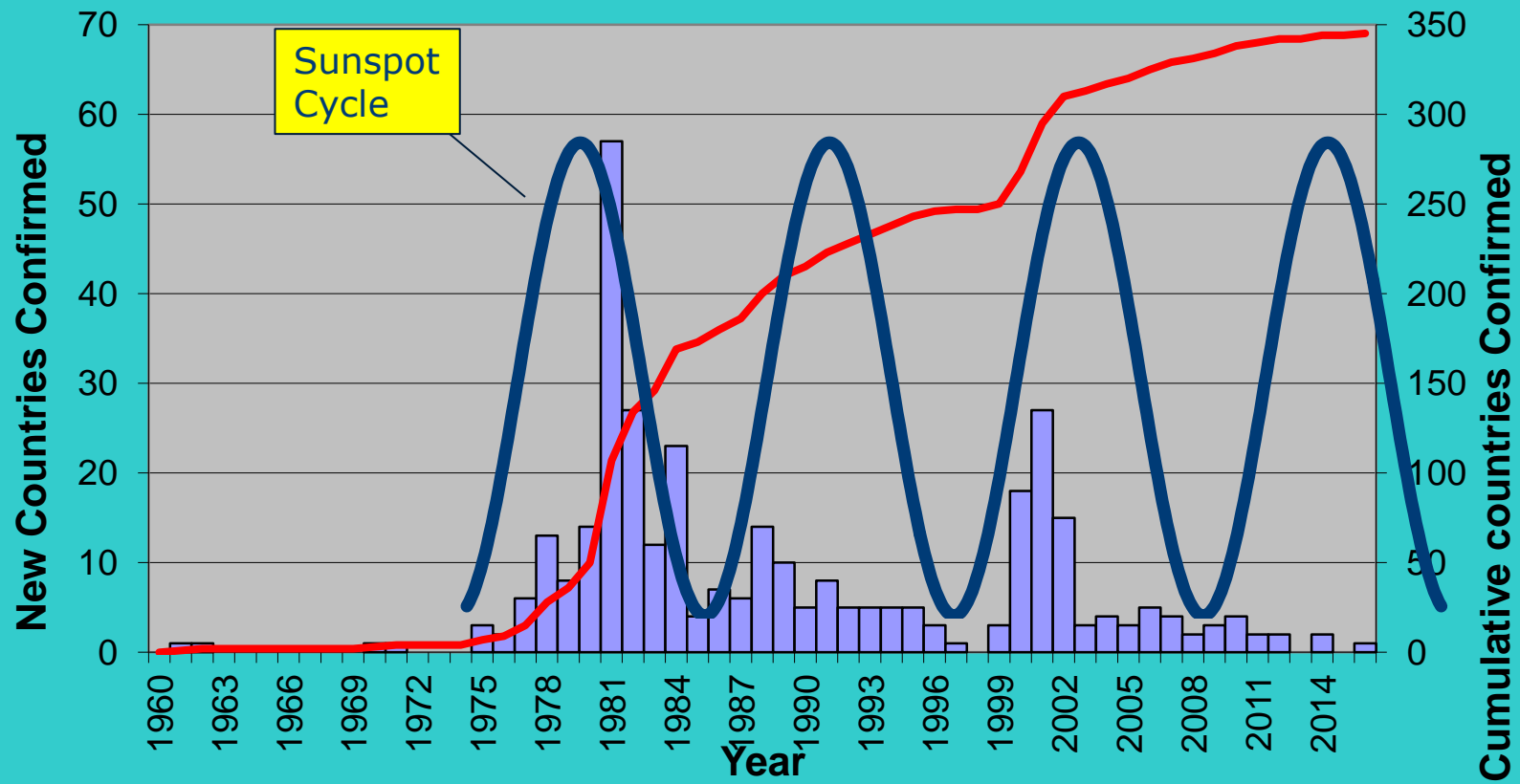
DXCC Histogram



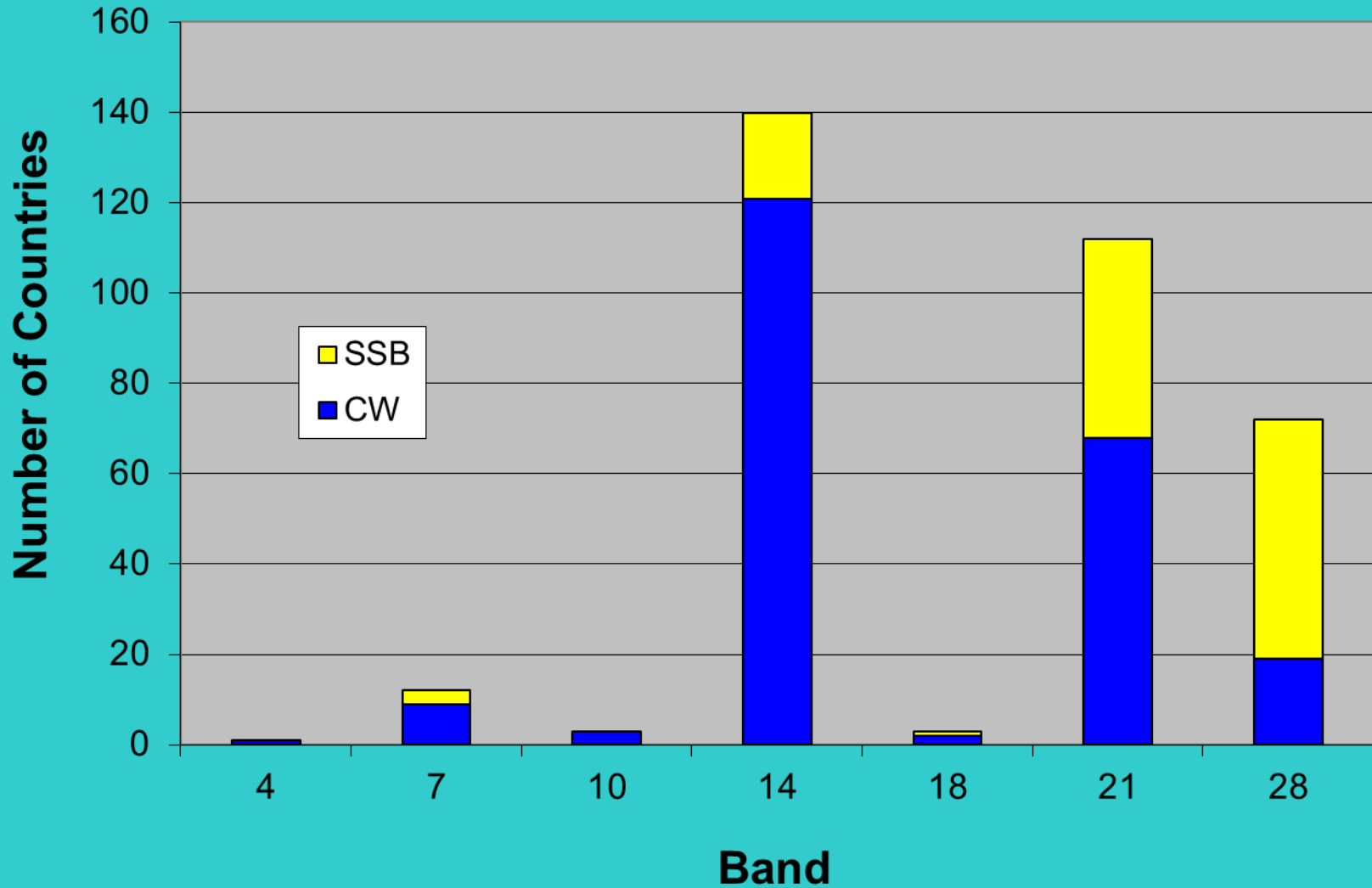
Persistence Counts

- You're in it for the long haul

DXCC Histogram



Confirmed Countries by Band and Mode



Keep Good Statistics

(spreadsheet from several years ago)

Needed Countries							
1	3C0	Pagalu			15	T31	Central Kiribati
2	BS7	Scarborough Reef			16	T33	Banaba
3	FK	Chesterfield Is			17	V8	Brunei
4	FR/G	Glorioso Is			18	VK0	Heard Is
5	FR/J	Juan de Nova, Europa			19	VK0	Macquarie Is
6	FR/T	Tromelin			20	VK9W	Willis Is
7	FT_X	Kerguelen Is			21	VP8	So Orkney Is
8	FT_Z	Amsterdam & St Paul Is			22	VU7	Andaman & Nicobar Is
9	JD	Minami Torishima			23	VU7	Lakshadweep Is
10	JX	Jan Mayen			24	YV0	Aves Is
11	KH7K	Kure Is			25	ZK3	Tokelau Is
12	P5	No Korea			26	ZL9	Auckland, Campbell Is
13	ST	Sudan			27	ZS8	Pr Edward & Marion Is
14	SY	Mt Athos					

Digital Modes

- JT65, FT8, WSPR, PSK31, RTTY, and other digital modes are all acceptable for DXCC Credit
- Several modes (e.g. JT65, FT8, and WSPR) are great for smaller stations
- Digital technology is changing rapidly "stay tuned".

QSL Requirements

- Confirmation – QSL Cards or Logbook of the World (LOTW)
- Both need:
 - Mode (ssb, cw, rtty, etc.)
 - Date
 - Time
 - Band
 - Call signs of both stations
- Cards submitted to ARRL HQ, local checker, or QSO entered into ARRL Logbook of the World (LOTW)
 - Detail on ARRL website

QSL Cards

- Your cards
 - Always have your call and report on the same side of the card
 - Cards can be stock, custom, homemade, or even photographs
- Get addresses from:
 - DX newsletter or DXpedition website
 - QRZ.com
 - DX Station directly

QSLing “Direct”

- Always include an addressed return envelope (stamped if possible)
 - Get foreign stamps from:
James Mackey, K3FN
<http://airmailpostage.com/>
 - Also sells “nested” airmail envelopes
- Generally include \$\$ (1-10 depending on situation)

DX QSLing via Bureau

■ ARRL Outgoing

- Must be an ARRL member
- Inexpensive but slow
- Instructions at www.arrl.org

■ Incoming

- Bureaus arranged by number in your call, not the geographic call area
- As cards come they will mail them to you
- Each bureau different – details at www.arrl.org

DX QSLing via Bureau

- Most of us will be using the "2" bureau.
 - North Jersey DX Association
 - Their website is:
 - <http://www.njdx.org/>
 - Fill out a bureau subscription form on the site and pay \$6 or \$12 for 10 or 20 "credits"
 - 1 envelope per credit
 - Typically 3-6 cards per envelope
 - They supply envelopes and stamps

Take Aways

- DXing is addictive and fun
- CW and Digital are better than SSB
- An antenna with gain (e.g. a yagi) is better than an amp
- Propagation prevails over everything
- Whatever your equipment, you're in it for the long haul.
 - Patience and persistence always pay off

Good DXing!



K201D

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Webster, NY 14580-9150
USA
Grid Square FN13



Nearby Rochester, New York

Addendum

- Below is information on remote operation for DXCC. This allows you to operate stations anywhere from anywhere using only an internet connection.
- The challenge for DXCC is to find a balance between the idea that all DXCC contacts are made from a single location and the reality that hams move.
- Basically, the ARRL has decided to have an "honor" system. That is, it is possible to "game" the system for example by remotely operating at sites that have better propagation to the DX, but that there is no way to prevent this and yet be fair to hams who have to change their QTHs.
- I have been fortunate in that all my DXCC QSOs have been from a single QTH.

■ 9. Station Location and Boundary:

-
- a) All stations used to make contacts for a specific DXCC award must be located within the same DXCC entity.
- b) All transmitters and receivers comprising a station used for a specific contact must be located within a 500-meter diameter circle.
- c) QSOs made with legally licensed, remotely controlled stations are allowed to be used for DXCC credit.

■

■ **10. All contacts must be made** using call signs issued to the same station licensee. Contacts made by an operator other than the licensee must be made from a station owned and usually operated by the licensee, and must be made in accordance with the regulations governing the license grant. Contacts may be made from other stations provided they are personally made by the licensee. The intent of this rule is to prohibit credit for contacts made for you by another operator from another location. You may combine confirmations from several call signs held for credit to one DXCC award, as long as the provisions of Rule 9 are met. Contacts made from club stations using a club call sign may not be used for credit to an individual's DXCC.

■

■ **11. Issues concerning remotely controlled operating** and DXCC are best dealt with by each individual carefully considering the ethical limits that he/she will accept for his/her DXCC and other operating awards. As the premier operating award in Amateur Radio, DXCC draws intense scrutiny from its participants. As DX chasers climb up the Standings there will be increased attention given to these achievements and the owner of these achievements needs to be comfortable standing behind his/her award and numbers. Peer attention has always been a part of awards chasing, of course, but in these times with so many awards and so many players it is more important than ever to 'play the game' ethically.

■

■ Technological advances, while welcome, also add to the difficulty in defining rules for DXCC, but the intent of the rules is what is important. It is *never* OK to remotely use a station outside of the 'home DXCC entity' to add to the home-entity DXCC totals -- just as it is *never* OK for you to ask someone else at another station in another place to make QSOs for you. Remotely controlled stations must be properly licensed if they are to count for DXCC. It will continue to be up to the operator to decide what types of legal remote control operating he/she will use (if any) to contribute to an operating award.