DX Basics

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The World of Ham Radio

(from the ARRL Operating Manual)

It is all about operating to be prepared for Emergency Communications (and having fun).

- VHF/UHF FM, Repeaters
- VHF/UHF Beyond Repeaters
- Amateur Satellites
- DXing
  - CW
  - SSB
  - RTTY
  - PSK 31
  - QRP
- Casual Comm. (rag chewing)
- Traffic Handling
- Image Communications
- HF Digital Communications
- Operating Awards
- Contesting
  - CW
  - SSB
  - RTTY
  - QRP
  - FT8

My focus is DX, working contests and casual communication, principally using CW.

Disclaimer

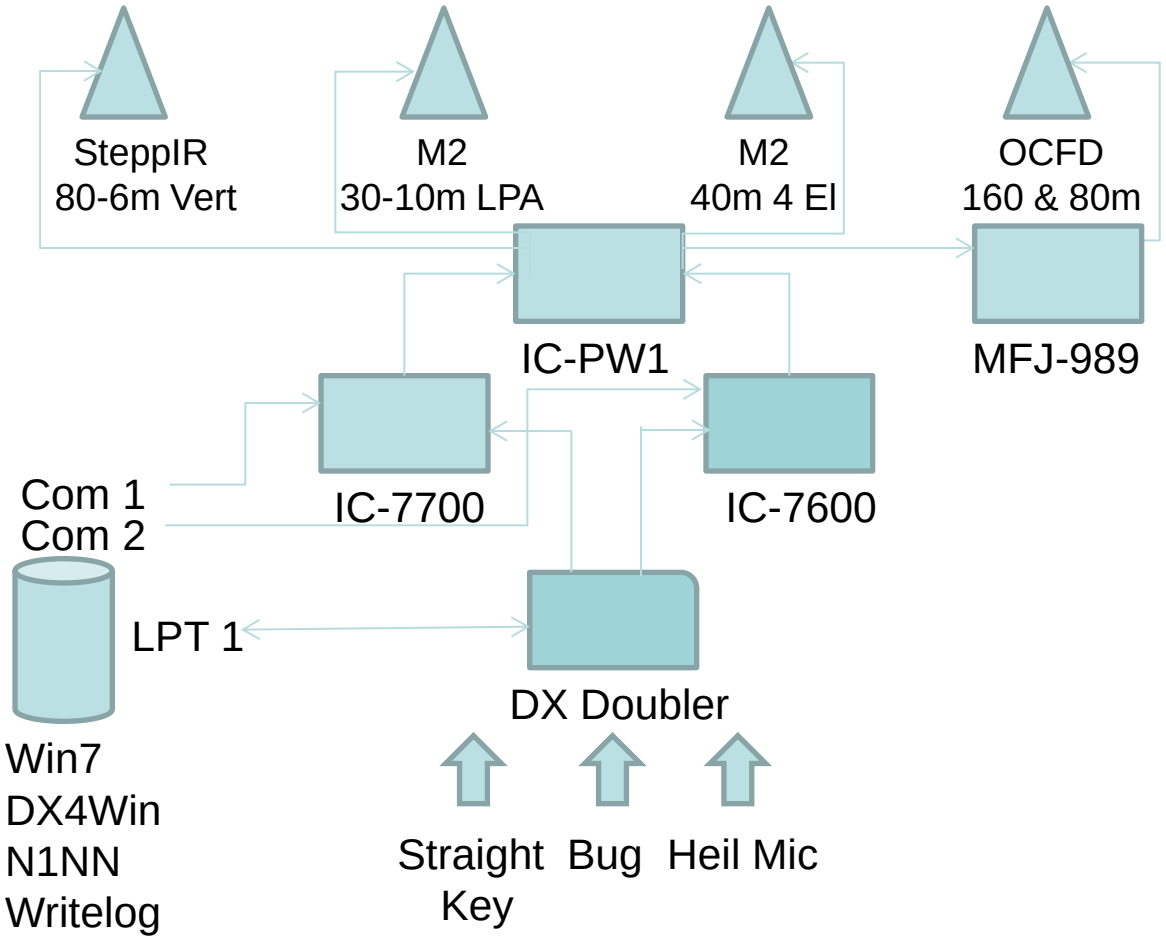
- There is a universe of opinion about how to operate DX and “snag” the new one; a lot of this is mine.
- This applies to HF (160m to 10 meters) except 60m.
- What follows is drawn from:
  - The ARRL Operating Manual,
  - The ARRL Handbook,
  - ON1UN’s Low Band Dxing; and,
  - my 40 years experience as a Ham plus that time as a USCG CW radio operator and years as an USAF pilot using HF SSB for position reporting and operational communication around the world.
  - 315 confirmed Countries and how I did this.
- My objective is to interest new Hams in High Frequency radio communication in general and DX specifically.

Outline

- Basic Equipment, software and antennas.
  - Have a plan and then acquire equipment which fits.
  - Commence using an electronic log.
  - Vertical, directional and wire antennas.
- Understand Propagation
  - K and A Indexes.
  - Time of Day.
  - Band characteristics.
  - Propagation prediction aids.
- Basic Operating Techniques
  - Who is on the air?
  - What to listen for, and then what?
  - Dx Expeditions.
  - Contests.

K5NOF Station Architecture

The Dream from CG days



Basic Equipment, Software and Antennas

- Think about your overall station architecture.
  - Where do you want to be in 10 or 20 years?
  - Try to buy things today that fit with your plan for tomorrow.
- Radio – many good choices on the new and used market.
  - Almost any modern 100W transceiver (less than 10 years old) will have what you need for now and the future.
  - Try for one with “dual watch” (Icom) or the Elecraft and Yaesu equivalent.
    - Allows you to listen to the DX while tuning through the pile-up to find the station the DX is working.
    - Use this as your calling frequency.
  - Otherwise you will use RIT to shift back and forth to track who the DX is working and where the DX is listening when using "split.”
  - Radio should support computer control.
- Try to dedicate a PC to your station. You don’t need high processing speed nor a lot of RAM. Ham radio software not a resource hog.

Basic Equipment, Software and Antennas

- Decide on logging software and commence to build an electronic log.
  - More about this later.
- You will want a package that will integrate with most radios, will connect to the DX spotting network, and will compare an entity with your log to see if you need this call for DXCC or other awards. More about this later.
  - DX4Win.
  - Win Log 32
  - Ham Radio Deluxe.
  - Others.
- A vertical antenna will get you many, many DX contacts into your log.
  - My primary antenna for a long time.
  - Ground mounted Hustler, Hy-Tower plus home built mono-band verticals for 30m & 17m all worked great; current SteppIR best, new 43' verticals work good on low bands; not so good on high.
  - All need radials (16 minimum, 32 better, 64 best.) See the Handbook and the Antenna book for more information. These will tell you:
    - Many short radials are better than a few long ones.

Basic Equipment, Software and Antennas

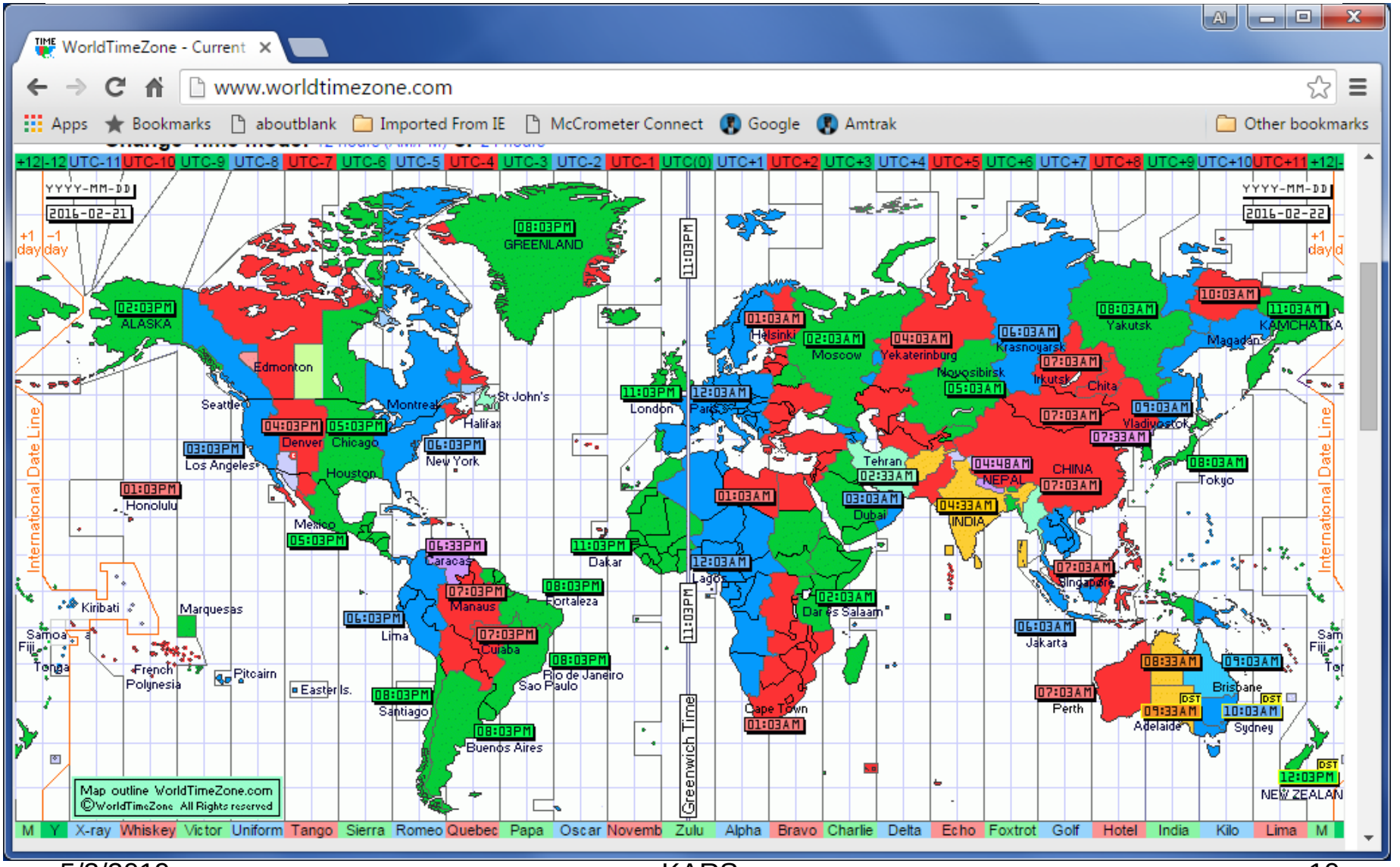
- A tower and beam are great if possible.
  - Most “tri-bander” beams will give around 6dB gain.
    - Six dB gain is four times power.
    - Your 100 Watt radio will now produce 400 Watts ERP (minus coax loss).
  - Gain is one consideration; bandwidth is almost as important.
  - Big is best.
- Shoot for a tower +/- 40 feet; higher if possible. Then,
  - Support an inverted V or inverted L for 7 and 3.5 mHz.
  - Invest in a good line tuner. New auto turners can be placed at the base of the antenna to avoid high SWR on the feedline and resultant loss.
- Invest in good headsets and microphone.
  - Headset with boom mic is a good choice.
- Invest in a hand key and paddles if interested in CW.
- Don’t cheap-out on coax. Avoid RG-8X (Hi loss, poor power handling).
  - Use RG-8U, RG-213; Belden 9913, LMR 400 or better.
  - Don’t leave even a tenth of a dB behind due to cheap coax or unnecessarily long lengths. Think ERP!
- Don’t let perfect be the enemy of good. Ham Radio is a hobby of compromises.

Understand Propagation

- K and A Indexes; quantify past geomagnetic activity.
- K and A Indexes announced every hour at :18 as part of the WWV time "tick." (Listen to WWVH at :46 for these announcements and to get an idea of propagation into the Pacific.) Freqs: 2.5, 5, 10, 15, 20 mHz.
  - K Index: highest geomagnetic reading over a three hour period commencing at 0000Z; updated every three hours.
  - Each three hourly K Index corresponds to an A Index. An average of eight forms the A Index value; the lower the better.
  - But, unpredictable things happen on the high bands as the K Index commences to rise; particularly over or nearly over the pole.
- Gray Line Propagation works best from 160 to 40m; sometimes 30m. (Example -- Dawn east – sunlight illuminates F layer first increasing ionization; D layer still in darkness and yet to form).
  - Optimum: station pair in sunrise east and sunset west or vice versa.
  - Peak signal occurs between dawn and sunrise or sunset and dark. You will have 5 to 15 minutes depending on season.
- Other Times of Day? Noon at midpoint of the path for high frequencies; midnight at midpoint at night for low frequencies.

World Time Zones

Be conscious of time of day at the DX QTH

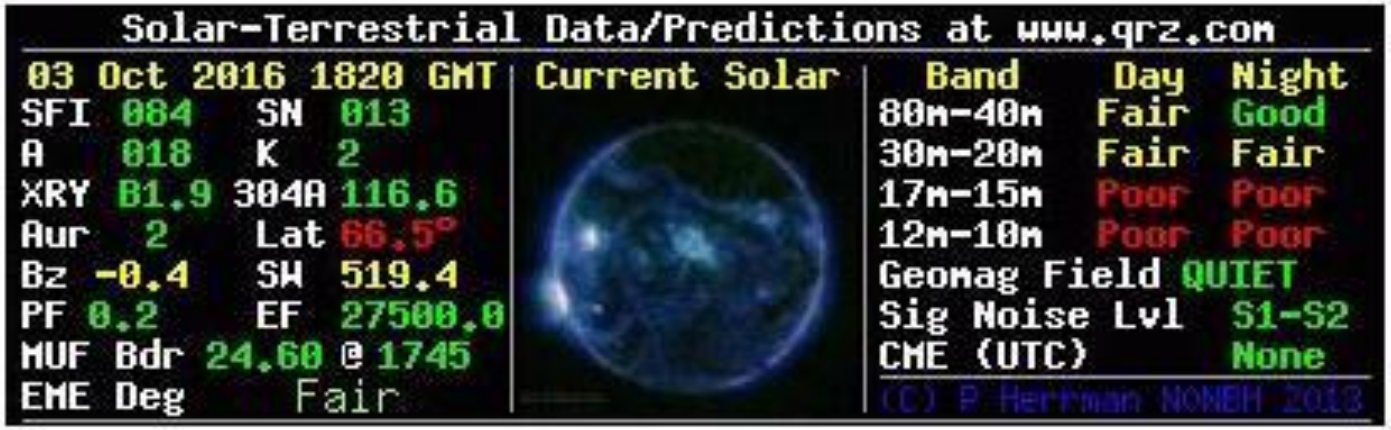


Band Characteristics

- 10 meters: Listen for beacons on 28.200 to see if the band is open.
- 12 meters: Sometimes open at mid-day when 10 is closed. B 24.930.
- 15 meters: Often open at mid-day when 24 and 10 are closed. Beacons on 21.150.
- 17 meters: Usually open during the day to different parts of the world. Beacons on 18.110
- 20 meters: The “king” of day-time DX bands. Beacons on 14.100.
- 30 meters: Usually open 24 hours to different parts of the world.
- 40 meters: The “queen” of night-time DX bands.
- 80 meters: Opens to the east at evening, moving south/north toward local midnight, moving to the west approaching local dawn. (No D Layer to absorb signal at night.)
- 160 meters: Follows darkness from east to west; direction and conditions depend upon season of the year.
- Under current solar conditions:
  - Listen to 17, 20 and 30 meters during the day.
  - Listen to 30, 40 and 80 meters during the night.
  - Shift one band downwards as solar flux diminishes.

Propagation Prediction Aids

Look at www.qrz.com first.



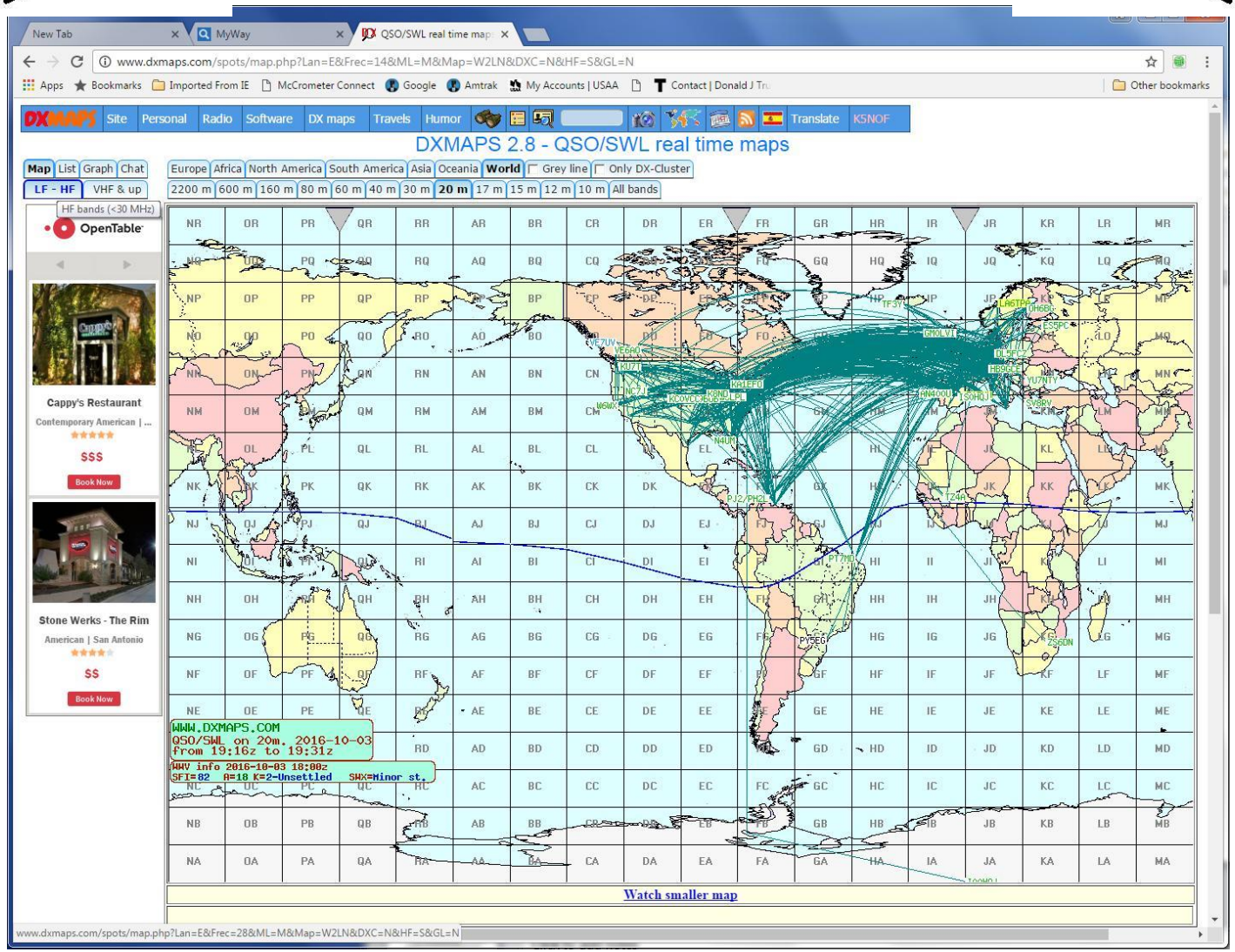
A *few* definitions

XRY -- relative Intensity of solar radiation
304A – relative strength of solar radiation
Aur Lat – aurora latitude
BZ – cancels mag. field when negative
SW -- speed of particles passing earth

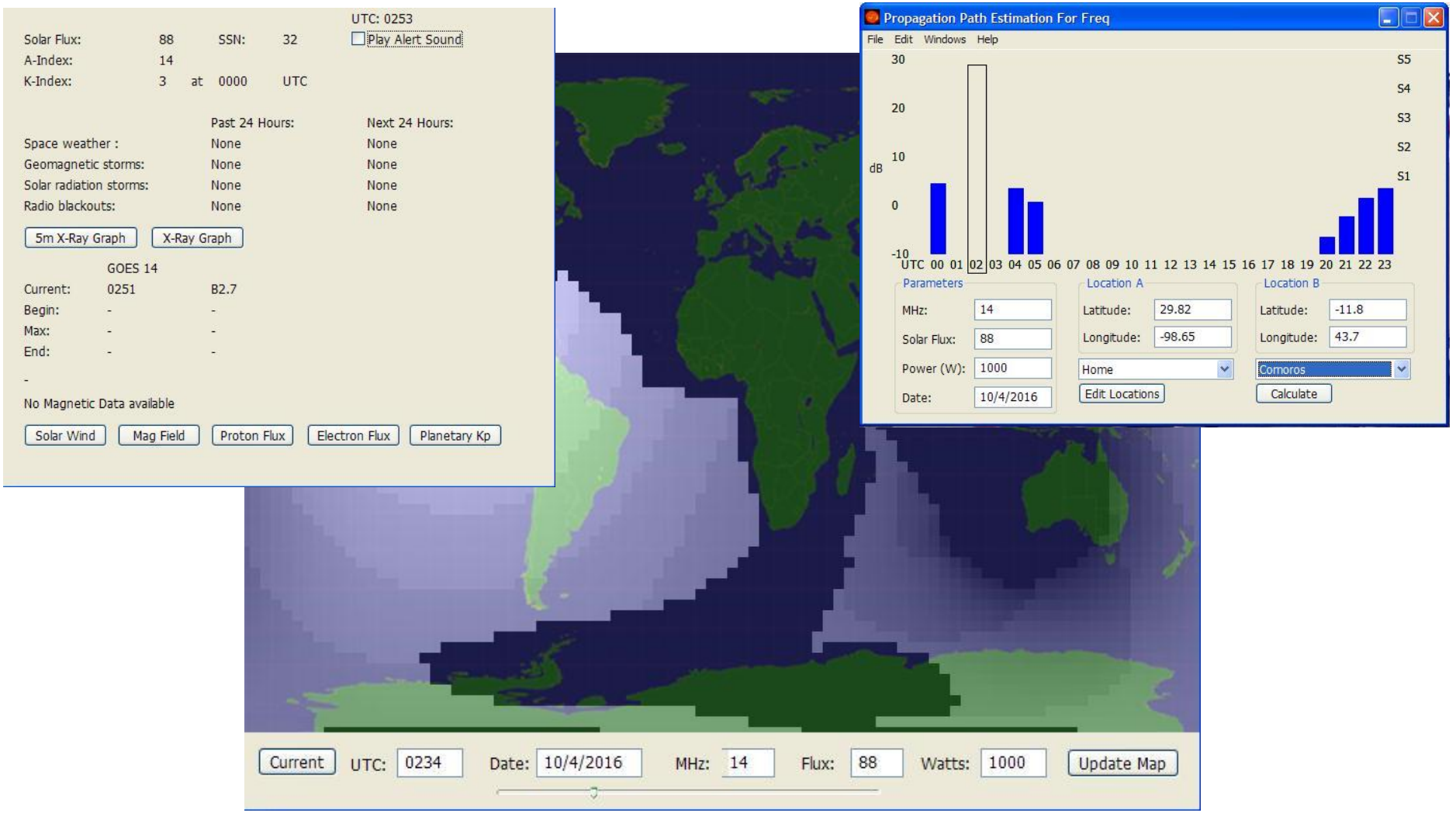
PF – proton flux primarily effects E
EF – elec flux density of chgd particle
MUF – Maximum usable frequency
EME Deg – eme path attenuation.
CME – coronal mass ejection est.

Current Activity (20m)

www.dxmaps.com



DX Toolbox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Solar Flux: 88 SSN: 32
Play Alert Sound
A-Index: 14
K-Index: 3 at 0000 UTC
Past 24 Hours:
Next 24 Hours:
Space weather : None None
Geomagnetic storms: None None
Solar radiation storms: None None
Radio blackouts: None None
5m X-Ray Graph
X-Ray Graph
GOES 14
Current: 0251 B2.7
Begin: - -
Max: - -
End: - -
No Magnetic Data available
Solar Wind
Mag Field
Proton Flux
Electron Flux
Planetary Kp
Propagation Path Estimation For Freq
File Edit Windows Help
dB
UTC 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
S5 S4 S3 S2 S1
Parameters
MHz: 14
Solar Flux: 88
Power (W): 1000
Date: 10/4/2016
Location A
Latitude: 29.82
Longitude: -98.65
Home
Edit Locations
Location B
Latitude: -11.8
Longitude: 43.7
Comoros
Calculate
Current
UTC: 0234
Date: 10/4/2016
MHz: 14
Flux: 88
Watts: 1000
Update Map

Who is on the Air?

Example of ARRL DX Bulletin published once a Week.

- ARLD040 DX news ZCZC AE40 QST de W1AW DX Bulletin 40 ARLD040 From ARRL Headquarters Newington CT September 29, 2016
- To all radio amateurs SB DX ARL ARLD040 ARLD040 DX news This week's bulletin was made possible with information provided by QRZ DX, the OPDX Bulletin, 425 DX News, The Daily DX, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

  - MONTENEGRO, 4O. Oskar, LB9N is QRV as 4O/LB9N from Igalo until October 22. Activity is on the HF bands using some SSB, and PSK and JT65. QSL to home call.
  - MALDIVES, 8Q. Andrea, IZ1MHY will be QRV as 8Q7MD on Felidhoo Atoll, IOTA AS-013, from October 2 to 10 while on vacation. Activity will be holiday style on the HF bands using SSB, RTTY, JT65 and SIM31. QSL direct to home call.
  - TONGA, A3. Masa, JA0RQV plans to be QRV as A35JP/p from Niuafo'ou Island, IOTA OC-123, beginning October 1. He may try to activate IOTAs OC-169, OC-064 or OC-191 instead. QSL to home call.

And then what?

- Go to QRZ.com and see what the DX has to say:
  - Often he/she will have a web site for the announced operation.
  - Will say how to QSL.
- Look at current propagation to determine the best bands to try.
- Look at DX maps to see most active band(s) to/from various locations.
- Put your headset on and commence to tune the bands commencing with the most likely. Listen, listen, listen.
- A some point you will hear a pile up of people trying to work DX.
  - Listen to see who and if working simplex or split. If split, then
  - Set the pileup on VFO B and go to VFO A and find the DX.
  - If SSB, look 5 to 10 kHz below the pileup; CW or RTTY, look 1 to 5 below.
  - Listen to the DX for instructions. Find where he is listening.
  - Announce your call one time; twice and listen.
  - Answered someone else? Look more to find where the DX is listening. Transmit there or slightly above.
  - You hear your call. Answer “Roger,Thank you, 59.” Nothing more.

DX Expeditions

- Announced well before hand.
  - Visit their web site for all the pertinent information.
  - Multi operator and expensive to stage. Most use Club Log OCRS. A donation will result in a quick QSL via LoTW. (More in Part 2.)
  - Some will have three and more stations on the air at same time.
- Lately, most seem to start off working CW, then switch to SSB a few days later, and then will commence to work RTTY along with CW and SSB. FT-8 becoming very popular.
  - Amazing the reach you will have with RTTY or FT8 with a modest station.
  - Almost without exception **all will work split**.
    - CW – up 1 to 5.
    - RTTY – up 5 to 10.
    - SSB up 5 to 10.
    - Listen, listen, listen for the direction he is working at the time (SA, NA, EU, OC, etc.) and for split information.
    - Many will transmit in Extra portion of band and listen in the General allocation.
    - On 20m phone, you might hear something like “listening 230.”
- Wait for the QRM to die down toward the end of the Dxpedition period if you are running low power. Then jump in.

DX and General Operating

- Plenty of entities to work even though we are moving toward (in) the sun-spot minima.
  - Europe, Africa, South America, Pacific and Asia should provide plenty of “count” toward DXCC.
  - Mid-East, India, and Indian Ocean a bit tougher since the signal path will pass over or near the North Pole. Best conditions occur when K is low. High K indicates a large aurora around the north (and south) pole(s).
- Get on the air and work the various DX contests.
  - Low Power, wait until the second day. At this point your QSO will be work 100 or more points to the DX contester due to the “multiplier effect.”
  - Start out with “search and pounce” and then toward the end of the period, go up the band a bit and try to run.
  - Find out for yourself what works for you and what doesn’t.
- Build your proficiency.
  - Get on the air, if only to rag chew.
  - Work the domestic contests.
  - No code? Learn and use RTTY.
  - But in the end, you will need to learn CW, or you will become totally frustrated listening to the DX hand out CW contacts to others until you learn how to join in.

Next Time
DX -- Beyond the Basics

- How to get the confirmation.
  - The paper QSL card, “green stamps” and the SASE
  - Outgoing and Incoming cards via the ARRL Bureau.
- Electronic logging
  - Buy a fully developed software program.
  - Convert your paper logs electronic using Basic Log.
  - Add subsequent QSO’s to this log.
- Then you can use:
  - The internet spotting network.
  - ARRL’s Logbook of the World (LoTW)
  - Club Log and OCRS (Online QSL Card Request System.)
- How to add paper cards to your LoTW record using the ARRL on-line system.
- Operating techniques.
- DX Code of Conduct.

The Paper QSL & "Green Stamps"

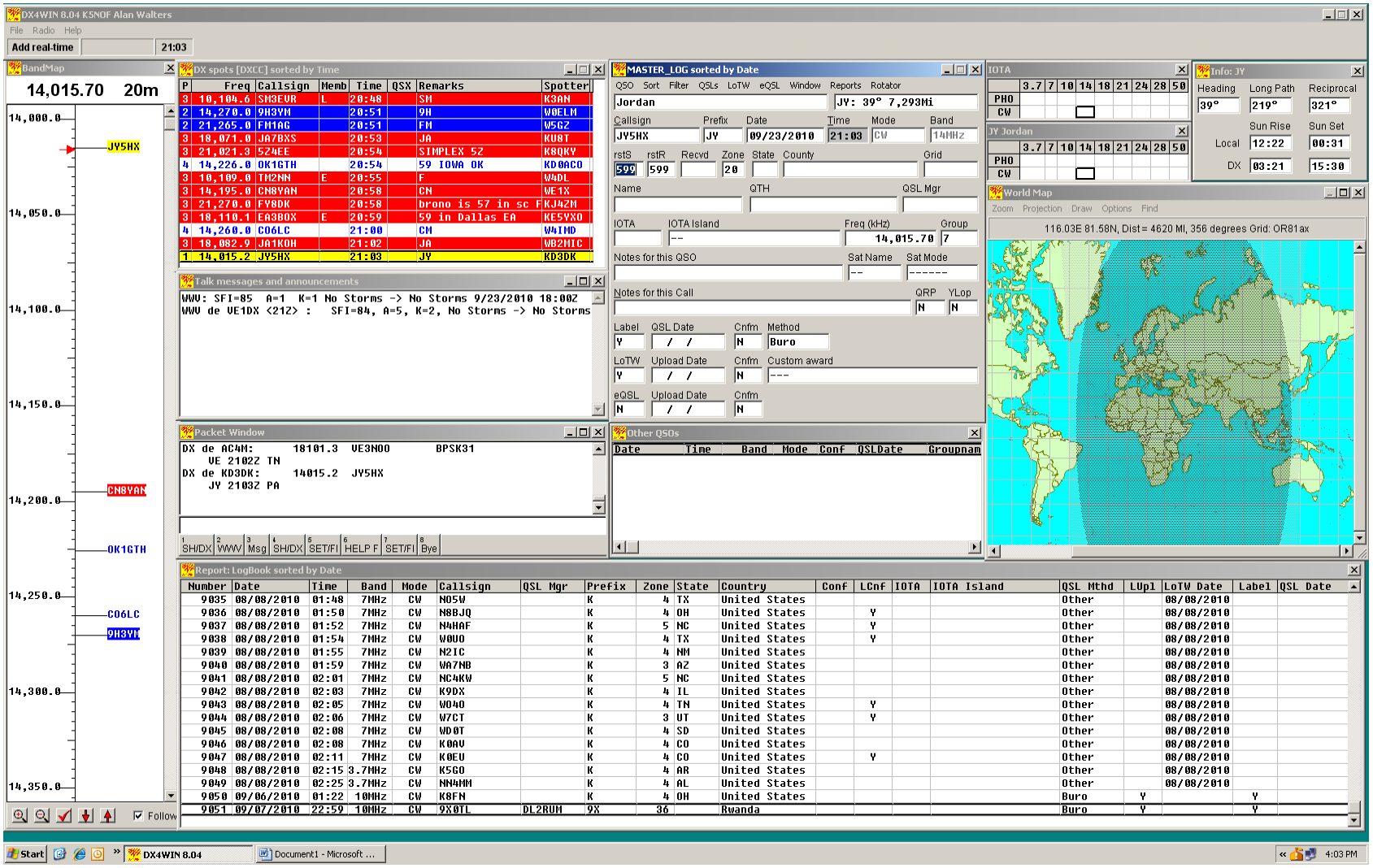
- Procedures to use the ARRL http://www.arrl.org/outgoing-qsl-service.
  - $1.15 per once (minimum $8.15 for <1 oz.) plus $7.00 service fee.
  - See ARRL web page to download submission form.
  - But what if the County has no bureau. Many don't and are listed in the Operating Manual.
- QSL direct with SASE and "green stamps."
  - Hide the money.
  - Address with name only, no call.
  - Have experienced a 90% return over the years.
- ARRL's Logbook of the World (LoTW) becoming more and more popular.
  - Have experienced a 40% return overall since 1975.
  - Relatively low in the early years, 75% return rate over the past five.
- Club Log and OCRS (Online QSL Card Request System.) return rate 99%.
- But to use LoTW and Club Log, you must have an electronic log.

Electronic Logging

- Look for a fully developed program with these features:
  - Packet terminal
  - Packet spots
  - Band map
  - Call sign information (country, heading, distance, QSL manager, etc.)
  - Use for general QSO's, working DX, casual participation in contests.
  - Program includes PSK31 utilities similar to DIGIPAN.
  - Program with other digital utilities to work new modes.
  - Program where MMTTY RTTY engine will integrate into program.
  - Uses onboard and/or off board sound card(s).
  - Print labels and manage QSL cards.
  - Upload/download to/from LoTW.
  - Upload/download to/from eQSL.
  - Award tracking
  - Output in .adi format to submit to LoTW and/or Club Log.
- Just to name a few.

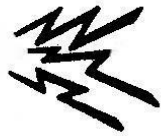
DX4Win

User selects, sizes and arranges windows as desired. K5NOF setup for general operation.



Basic Log Import

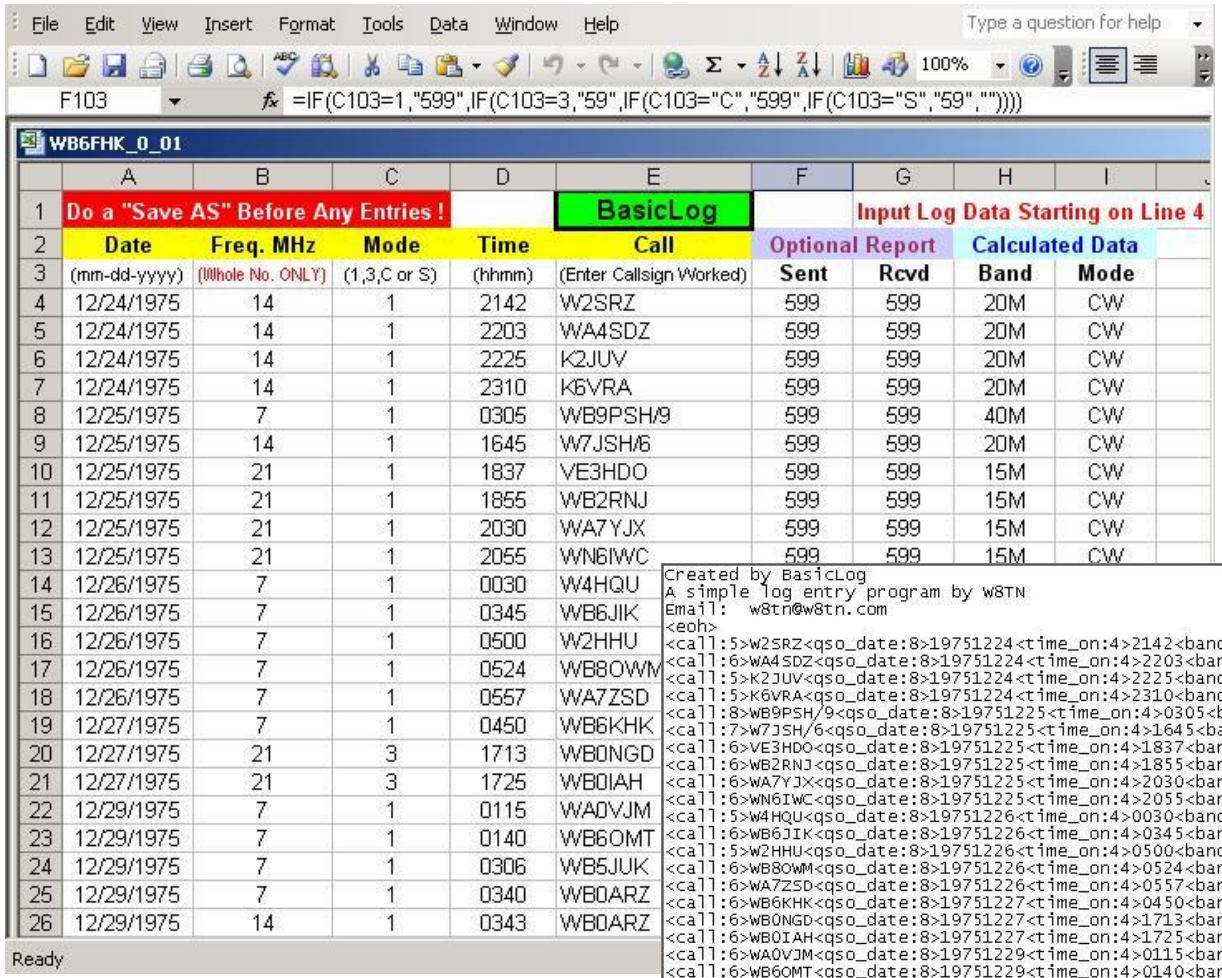
Ask me for a copy. k5nof@arrl.net



- The bare minimums – date, frequency, mode, time and call.
- Save a copy of the worksheet and use the copy to enter the contacts.
- DATE -- Type date as mm-dd-yyyy or m-d-yy and program will convert. There must be a dash (-) or slash (/) between M, D and Y.
- Frequency in MHZ. Just the whole number such as 3, 7, 14, etc.
- Mode. Use “1” for CW, “3” for SSB. For other modes, overtype.
  - Be sure to use a designation accepted by ARRL. PSK is RTTY.
- Time. Use tttt. If you use ttt or tt or t, program will add leading zeros.
- Call. If the call has a slash, make sure you use forward “***/***” and not backwards.
- Save the Excel File. And then --
- Click the ADIF tab at the bottom of the sheet and do File/Save As:
  - “KB5TX-0001.adi” inside double quotes as shown.
  - File Type (below the filename) must be Text (OS/2 or MS-DOS) (*.txt).
- Click save and acknowledge first warning by clicking on “OK”.
- Ignore second warning by clicking on “NO”
- Less than full page of calls – clear unused entry slots using text editor.

Basic Log Import

Ask me for a copy k5nof@arrl.net



	A	B	C	D	E	F	G	H	I
1	Do a "Save AS" Before Any Entries !				BasicLog		Input Log Data Starting on Line 4		
2	Date	Freq. MHz	Mode	Time	Call	Optional Report		Calculated Data	
3	(mm-dd-yyyy)	(Whole No. ONLY)	(1,3,C or S)	(hhmm)	(Enter Callsign Worked)	Sent	Rcvd	Band	Mode
4	12/24/1975	14	1	2142	W2SRZ	599	599	20M	CW
5	12/24/1975	14	1	2203	WA4SDZ	599	599	20M	CW
6	12/24/1975	14	1	2225	K2JUV	599	599	20M	CW
7	12/24/1975	14	1	2310	K6VRA	599	599	20M	CW
8	12/25/1975	7	1	0305	WB9PSH/9	599	599	40M	CW
9	12/25/1975	14	1	1645	W7JSH/6	599	599	20M	CW
10	12/25/1975	21	1	1837	VE3HDO	599	599	15M	CW
11	12/25/1975	21	1	1855	WB2RNJ	599	599	15M	CW
12	12/25/1975	21	1	2030	WA7YJX	599	599	15M	CW
13	12/25/1975	21	1	2055	WN6IWC	599	599	15M	CW
14	12/26/1975	7	1	0030	W4HQU				
15	12/26/1975	7	1	0345	WB6JIK				
16	12/26/1975	7	1	0500	W2HHU				
17	12/26/1975	7	1	0524	WB8OWM				
18	12/26/1975	7	1	0557	WA7ZSD				
19	12/27/1975	7	1	0450	WB6KHK				
20	12/27/1975	21	3	1713	WB0NGD				
21	12/27/1975	21	3	1725	WB0IAH				
22	12/29/1975	7	1	0115	WA0VJM				
23	12/29/1975	7	1	0140	WB6OMT				
24	12/29/1975	7	1	0306	WB5JUK				
25	12/29/1975	7	1	0340	WB0ARZ				
26	12/29/1975	14	1	0343	WB0ARZ				

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Created by BasicLog
A simple log entry program by W8TN
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```

Generally – Transcribe QSO's from paper log into Excel and then save work sheet to ADIF and upload to your logging software and/or to LoTW.

Be sure to read instructions first.

LoTW

General Steps
(See www.arrl.org for instructions).

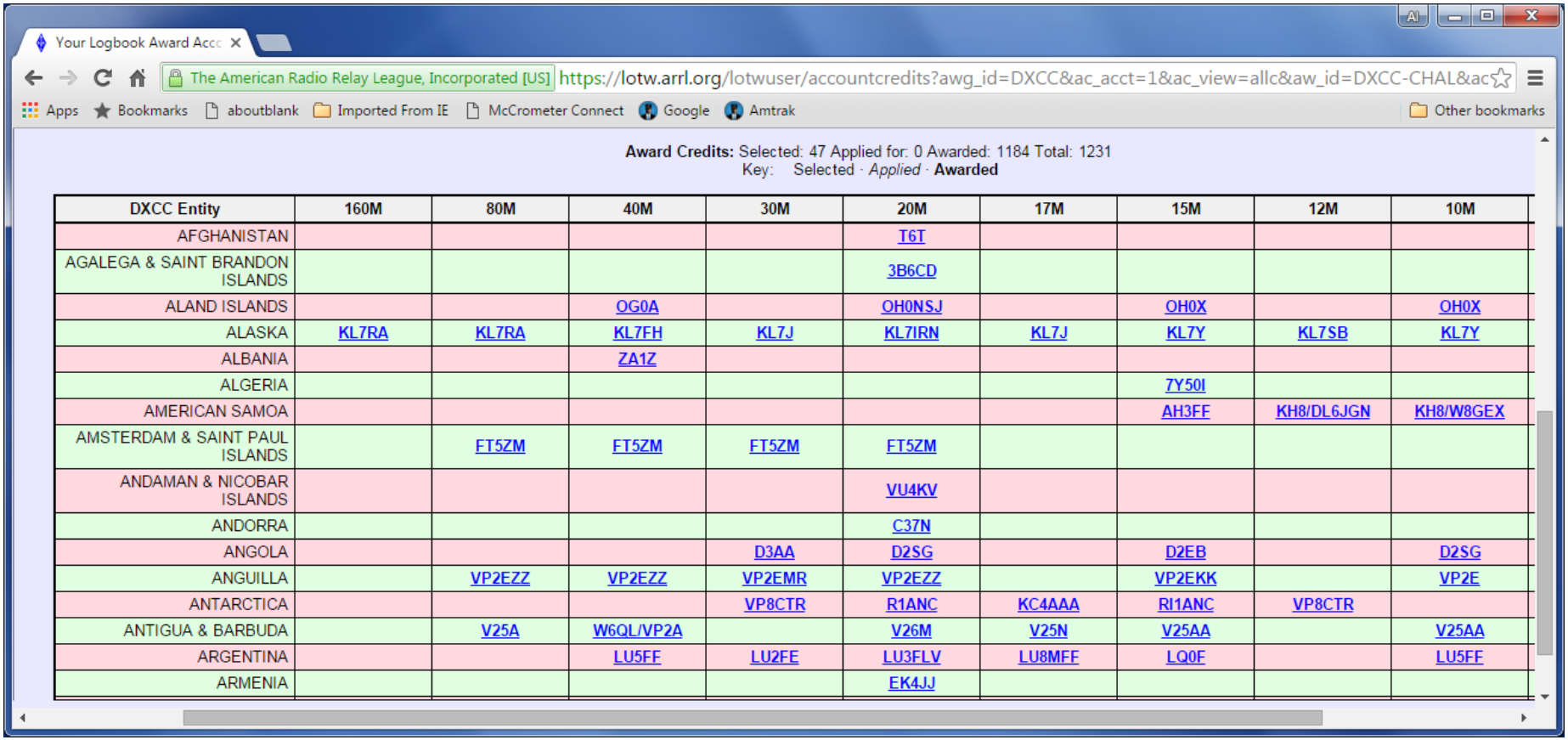
- Download and print the instructions
- Download and install the software.
- Request a certificate for your callsign.
- Authenticate your location.
- Load your certificate (TQ6 file).
- Create a station location.
- Sign and upload your log files.
- I have another presentation to show how to do this. Otherwise --

Follow the instructions step by step.

Example of LoTW Award Credits

Partial report from the K5NOF
DX Challenge Account

LoTW Shows all DX credits whether electronic or paper cards.



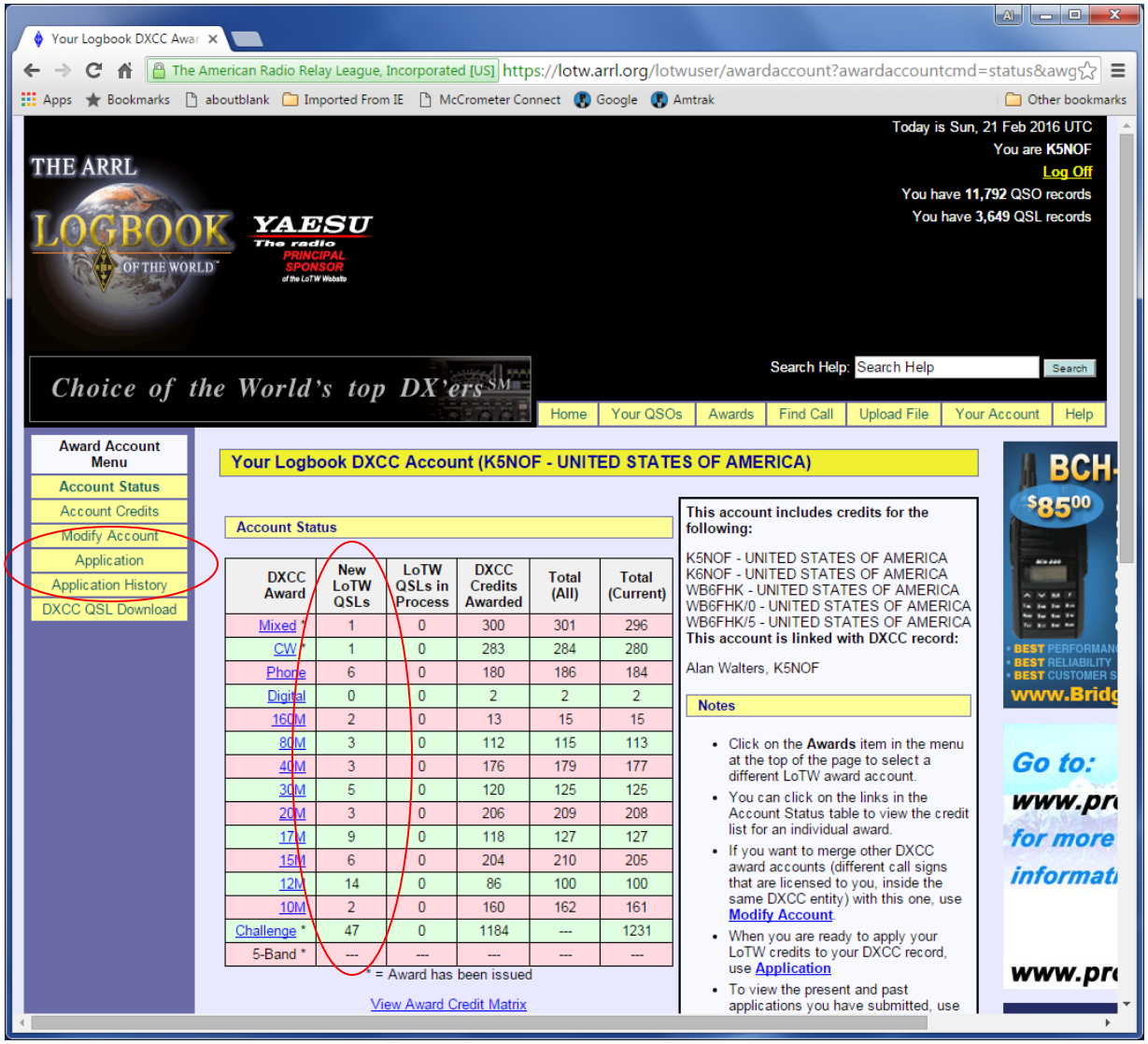
Award Credits: Selected: 47 Applied for: 0 Awarded: 1184 Total: 1231
Key: Selected · *Applied* · **Awarded**

DXCC Entity	160M	80M	40M	30M	20M	17M	15M	12M	10M
AFGHANISTAN					T6T				
AGALEGA & SAINT BRANDON ISLANDS					3B6CD				
ALAND ISLANDS			OG0A		OH0NSJ		OH0X		OH0X
ALASKA	KL7RA	KL7RA	KL7FH	KL7J	KL7IRN	KL7J	KL7Y	KL7SB	KL7Y
ALBANIA			ZA1Z						
ALGERIA							7Y50I		
AMERICAN SAMOA							AH3FF	KH8/DL6JGN	KH8/W8GEX
AMSTERDAM & SAINT PAUL ISLANDS		FT5ZM	FT5ZM	FT5ZM	FT5ZM				
ANDAMAN & NICOBAR ISLANDS					VU4KV				
ANDORRA					C37N				
ANGOLA				D3AA	D2SG		D2EB		D2SG
ANGUILLA		VP2EZZ	VP2EZZ	VP2EMR	VP2EZZ		VP2EKK		VP2E
ANTARCTICA				VP8CTR	R1ANC	KC4AAA	RI1ANC	VP8CTR	
ANTIGUA & BARBUDA		V25A	W6QL/VP2A		V26M	V25N	V25AA		V25AA
ARGENTINA			LU5FF	LU2FE	LU3FLV	LU8MFF	LQ0F		LU5FF
ARMENIA					EK4JJ				

Your credits from paper QSL's you submitted over the years, are combined with your digital log.

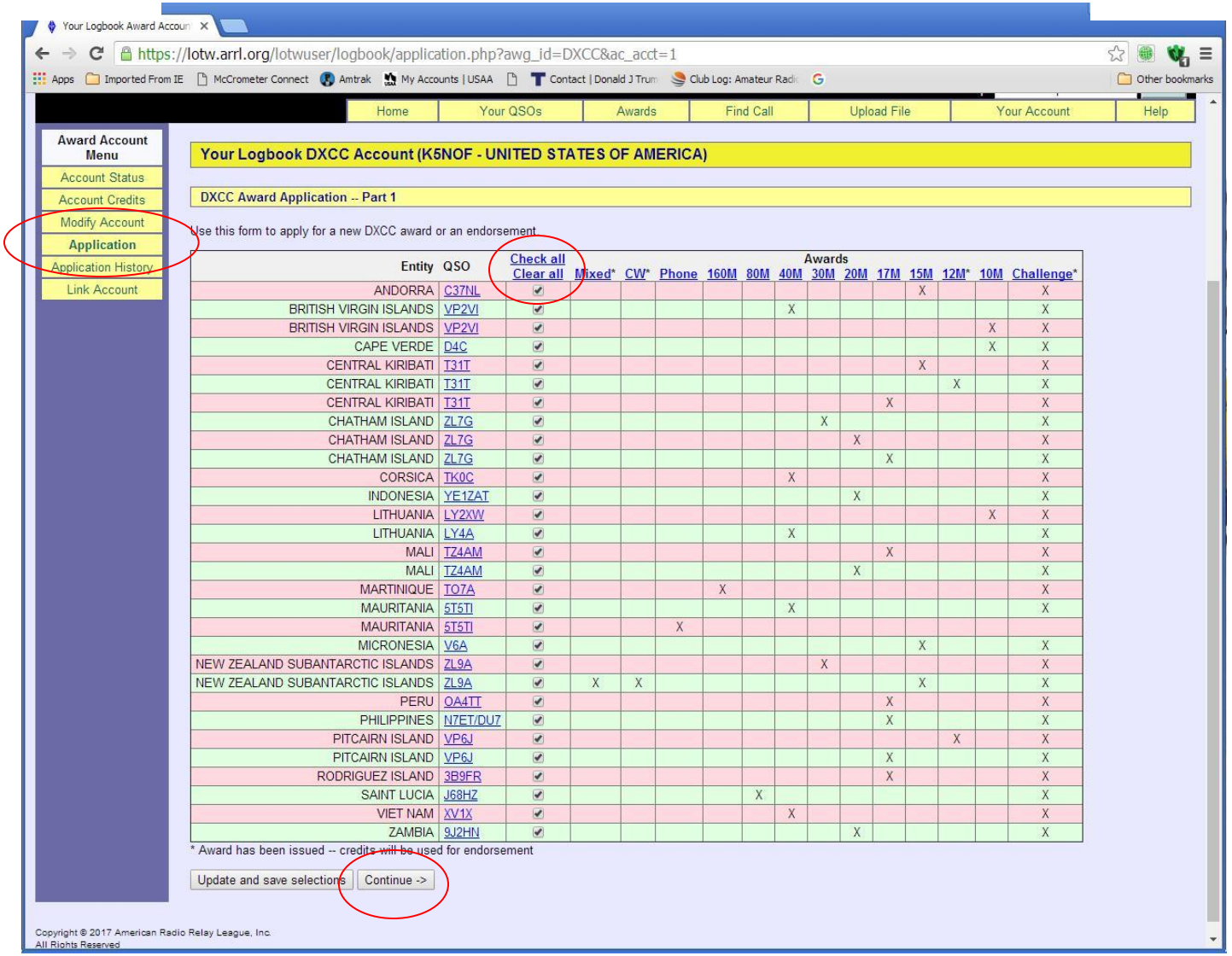
LoTW

Add QSLs to your account -- 1



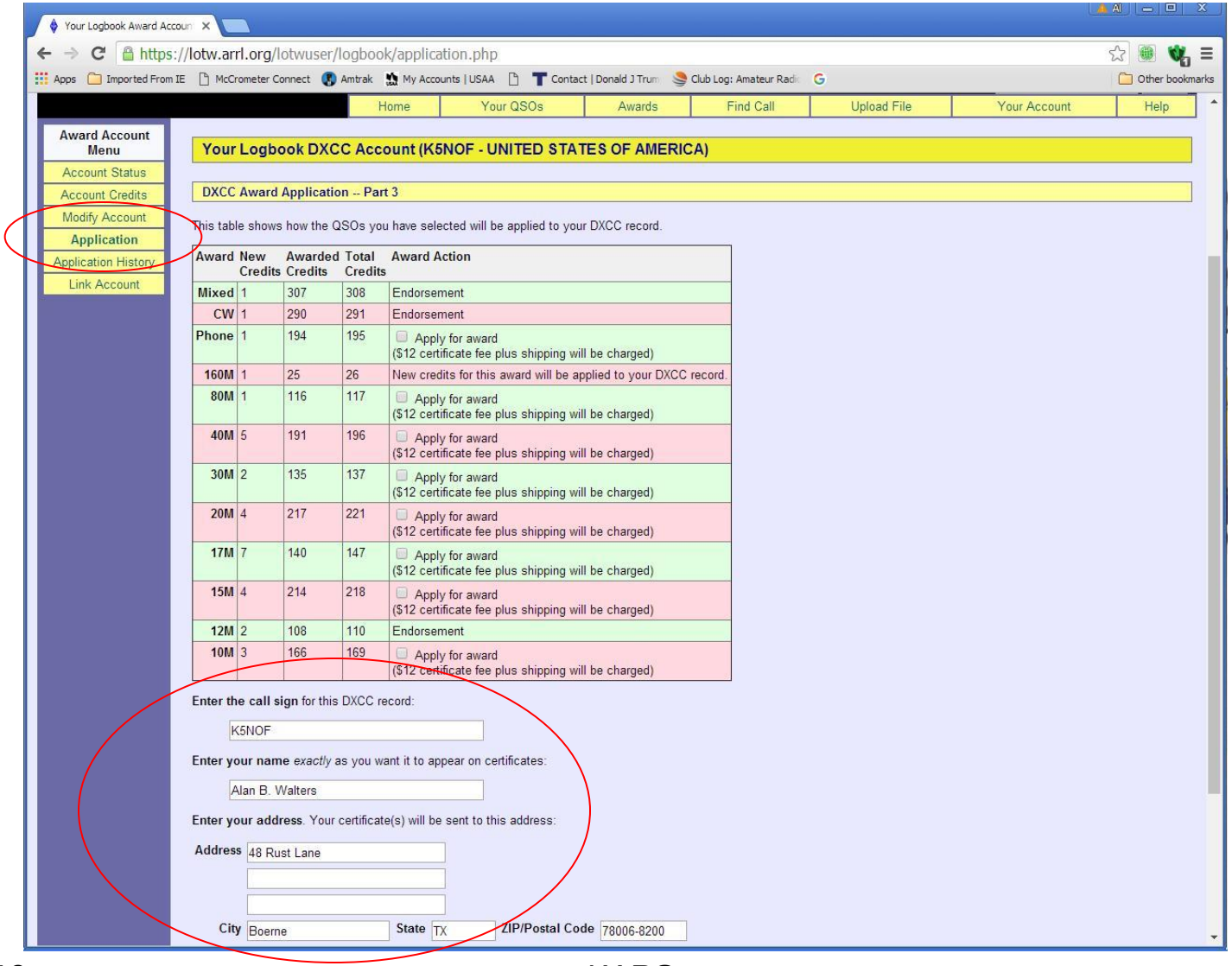
LoTW

Add QSLs to your account -- 2



LoTW

Add QSLs to your account -- 3

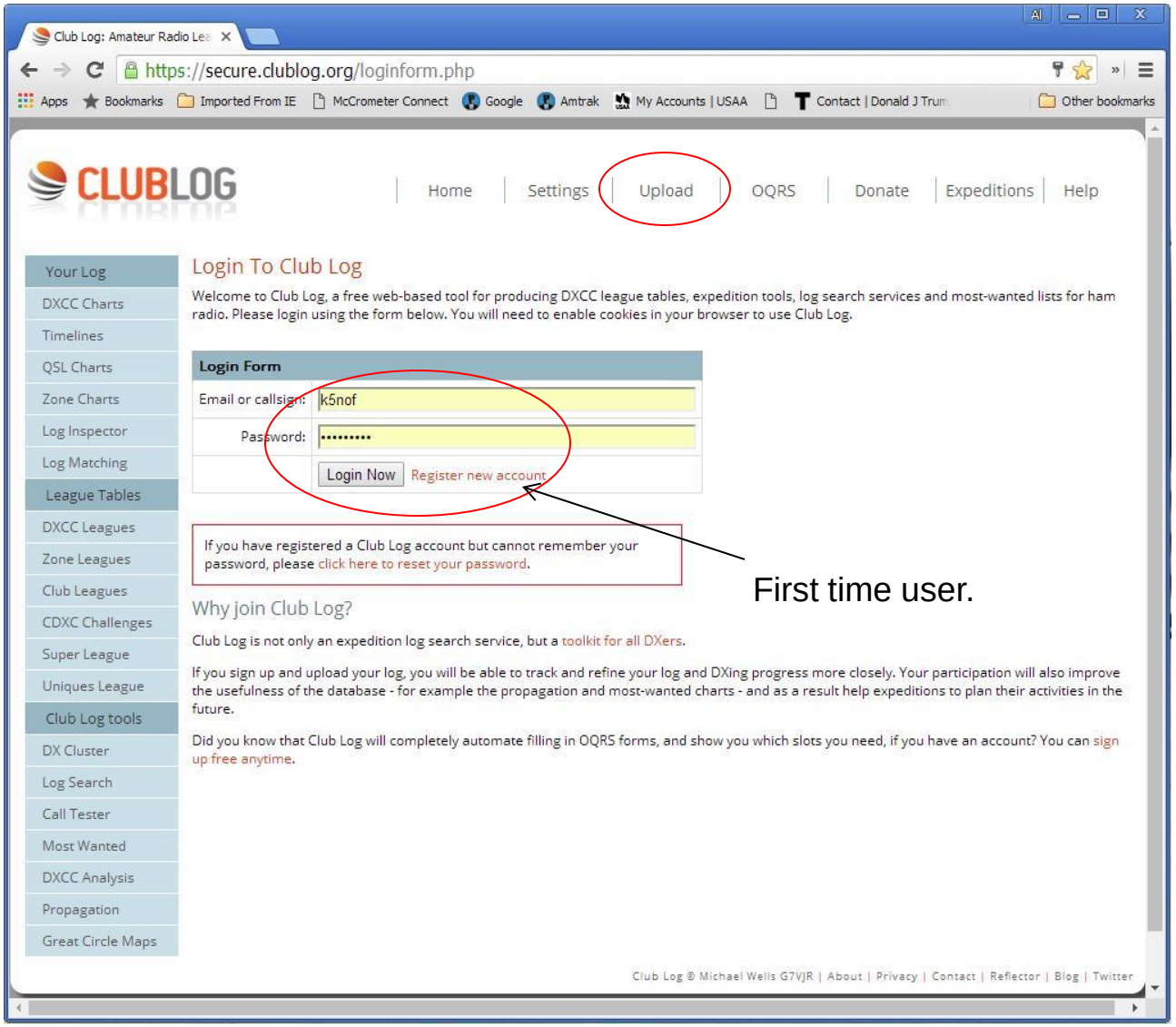


LoTW

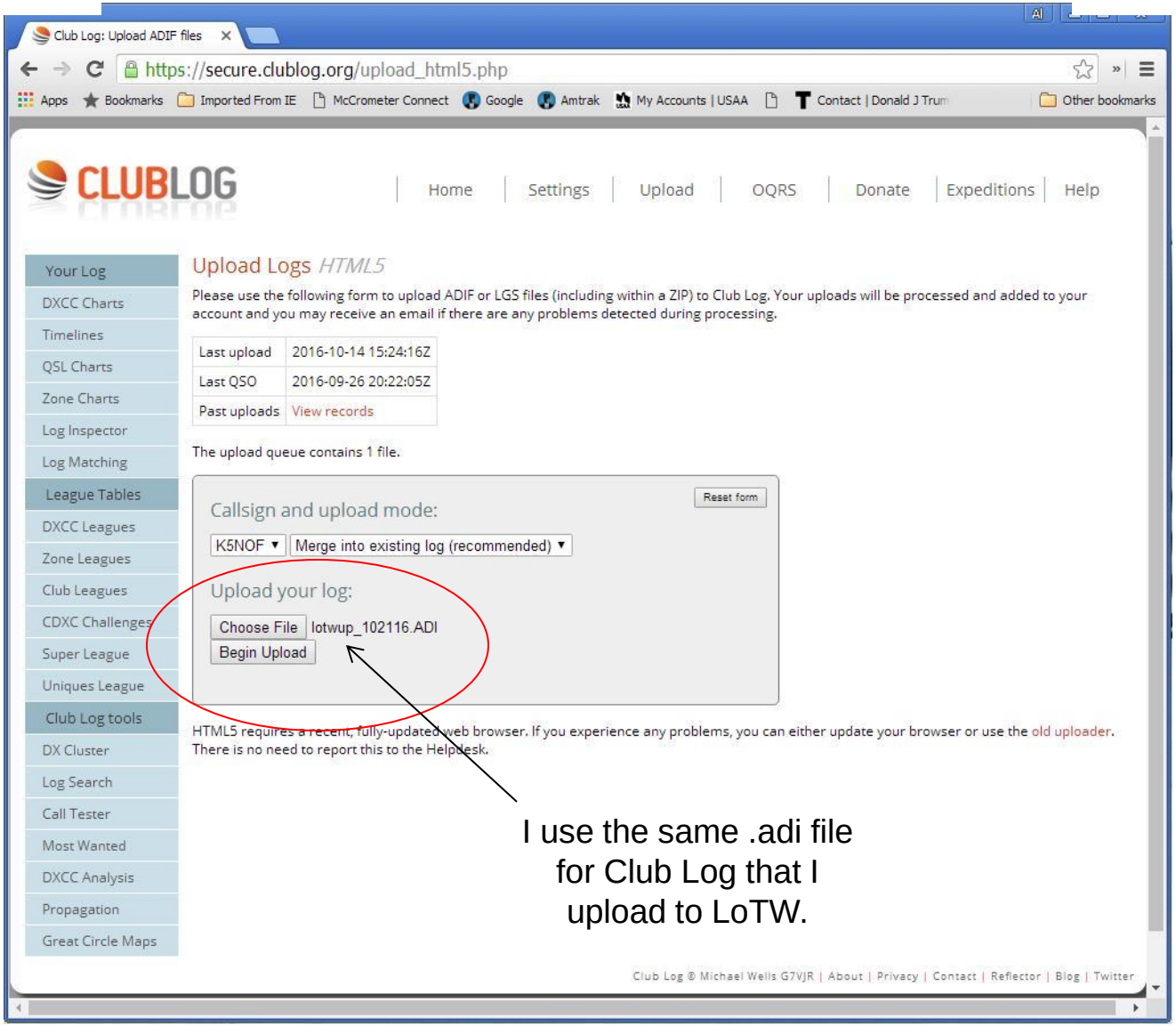
Add QSLs to your account -- 3

Club Log – 1

Note: 5U5R has a similar utility on their web site.

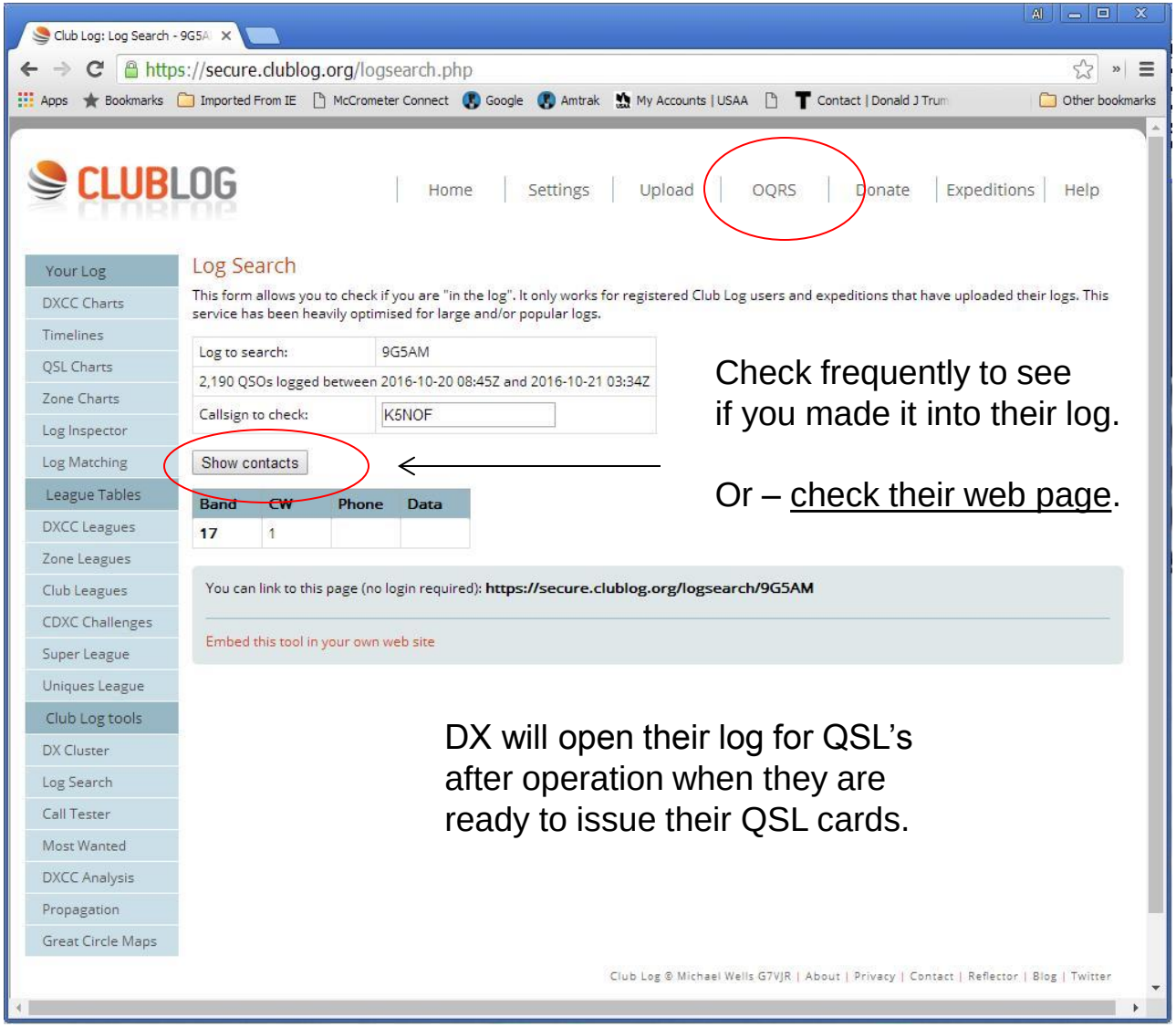


Club Log -- 2



I use the same .adi file for Club Log that I upload to LoTW.

Club Log – 3

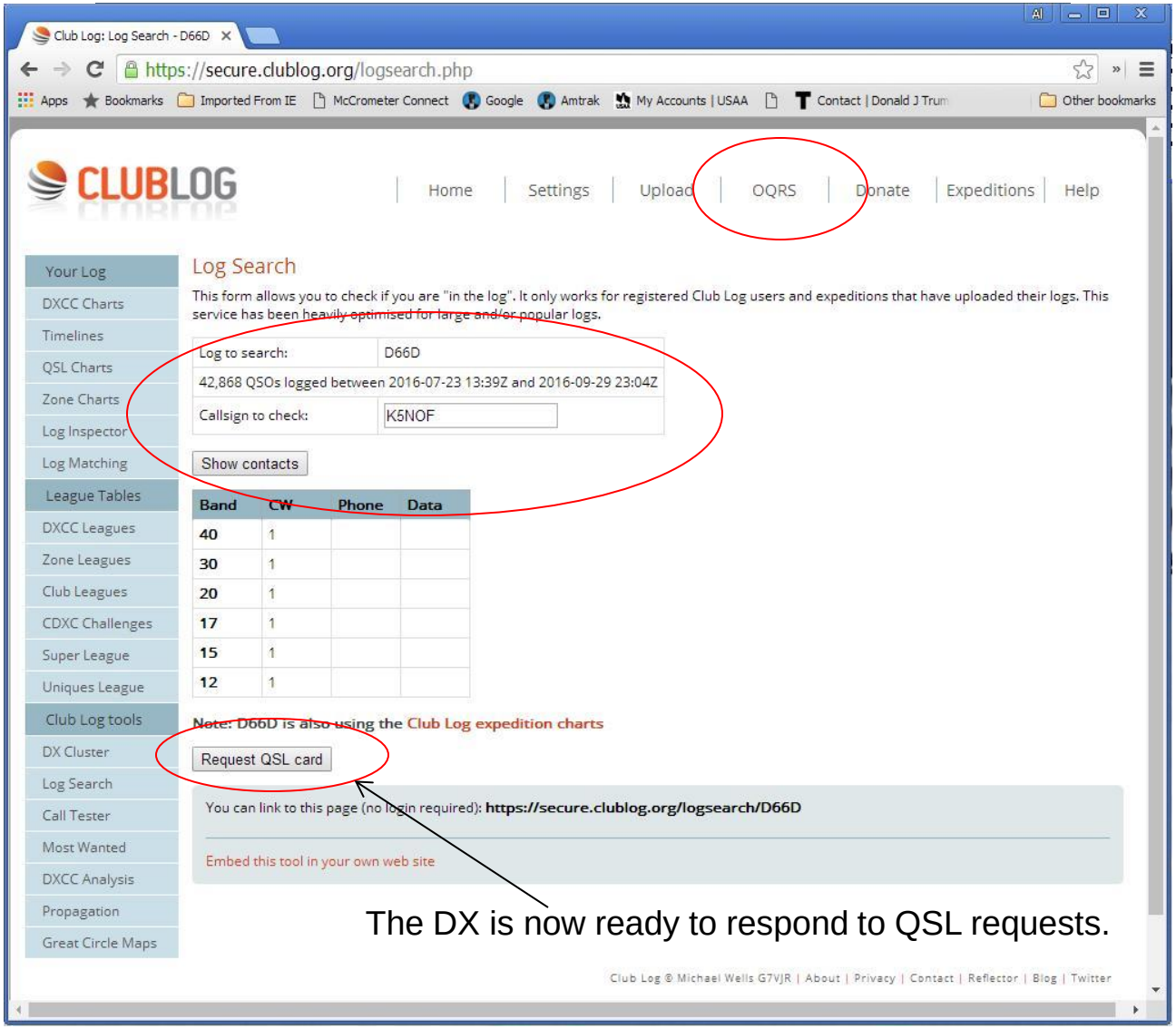


Check frequently to see if you made it into their log.

Or – check their web page.

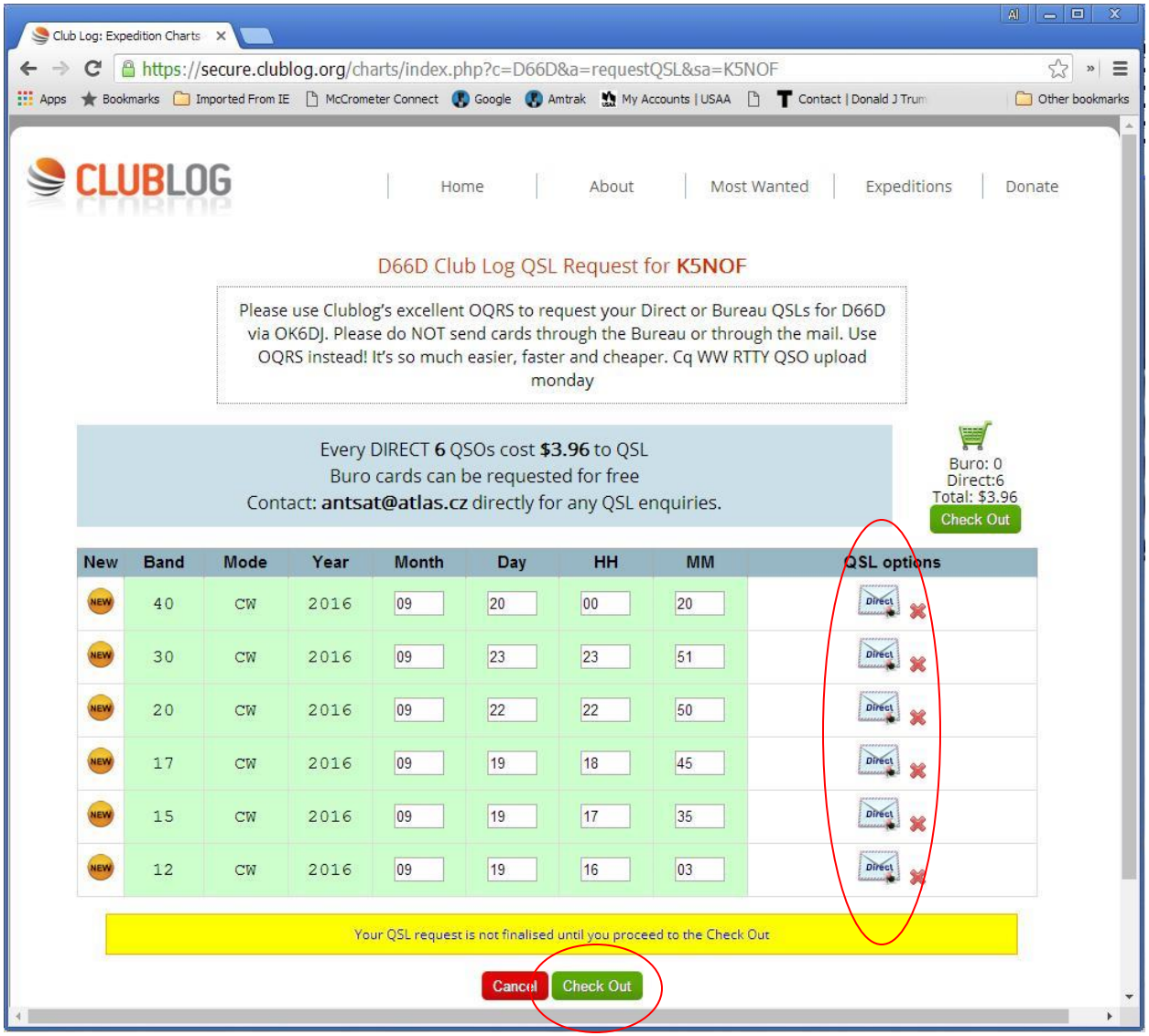
DX will open their log for QSL's after operation when they are ready to issue their QSL cards.

Club Log -- 4

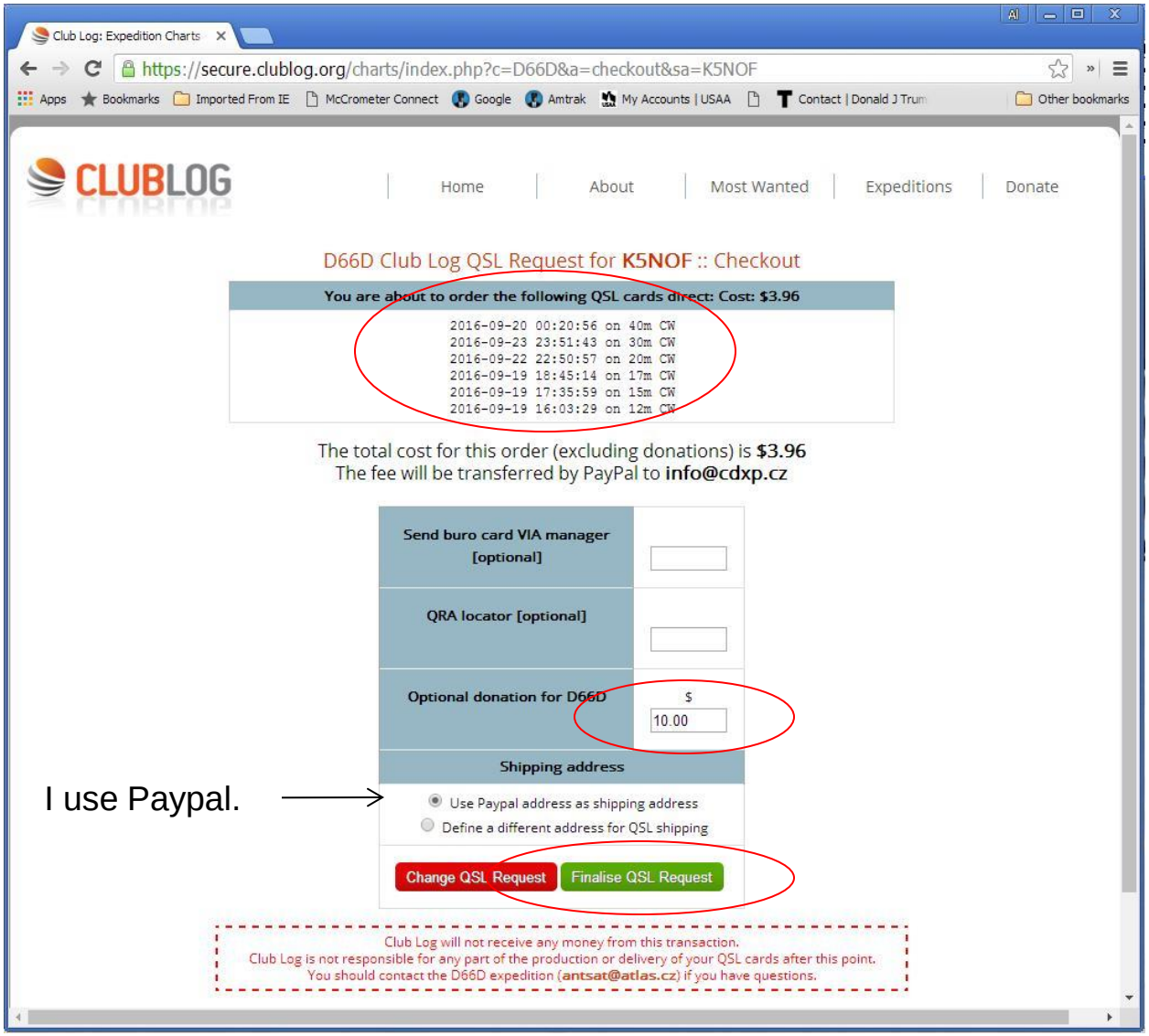


The DX is now ready to respond to QSL requests.

Club Log -- 5


Club Log: Expedition Charts
https://secure.clublog.org/charts/index.php?c=D66D&a=requestQSL&sa=K5NOF
CLUBLOG
Home
About
Most Wanted
Expeditions
Donate
D66D Club Log QSL Request for K5NOF
Please use Clublog's excellent OQRS to request your Direct or Bureau QSLs for D66D via OK6DJ. Please do NOT send cards through the Bureau or through the mail. Use OQRS instead! It's so much easier, faster and cheaper. Cq WW RTTY QSO upload monday
Every DIRECT 6 QSOs cost $3.96 to QSL
Buro cards can be requested for free
Contact: antsat@atlas.cz directly for any QSL enquiries.
Buro: 0
Direct:6
Total: $3.96
Check Out
New Band Mode Year Month Day HH MM QSL options
40 CW 2016 09 20 00 20
30 CW 2016 09 23 23 51
20 CW 2016 09 22 22 50
17 CW 2016 09 19 18 45
15 CW 2016 09 19 17 35
12 CW 2016 09 19 16 03
Your QSL request is not finalised until you proceed to the Check Out
Cancel
Check Out

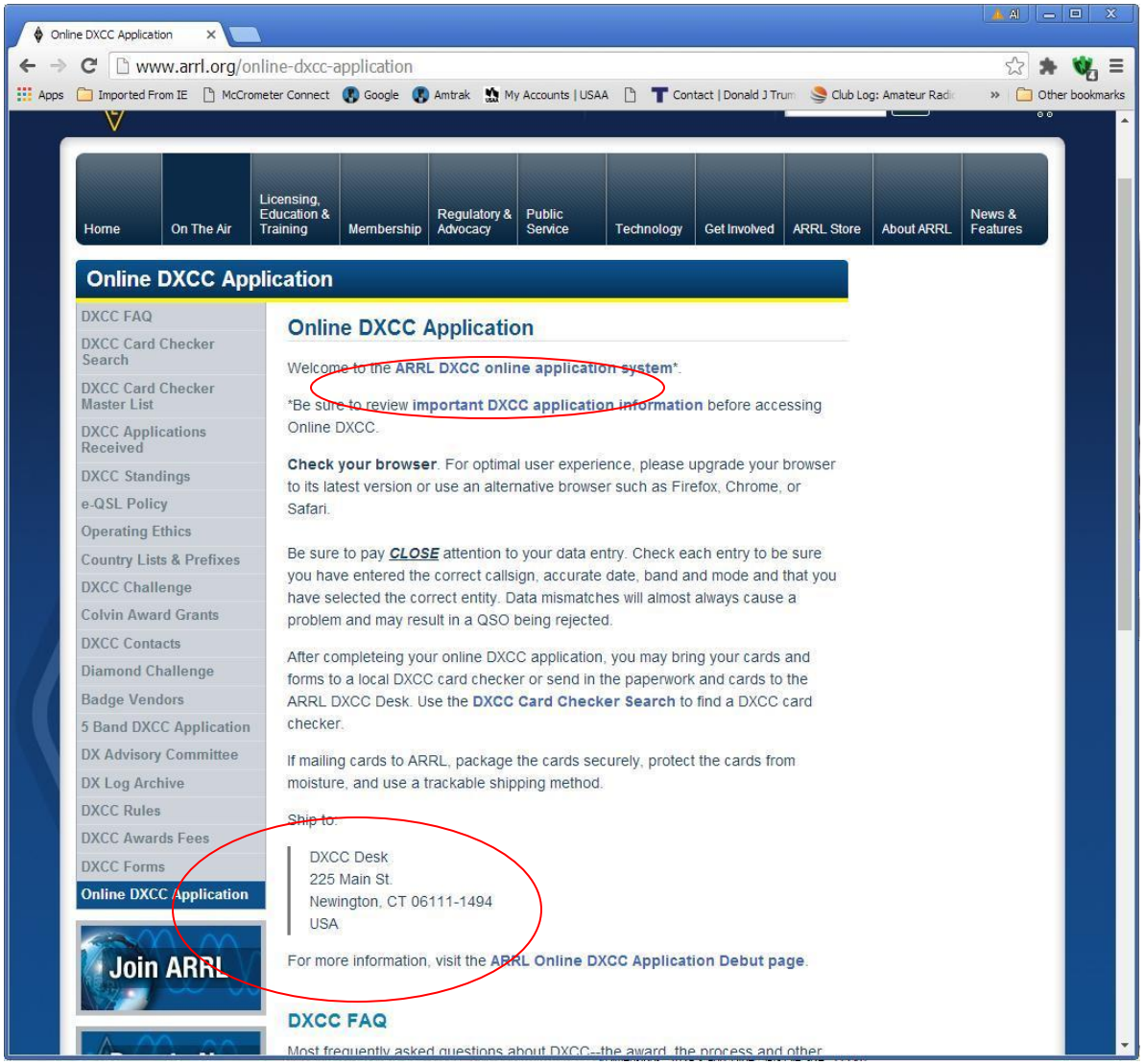
Club Log -- 6



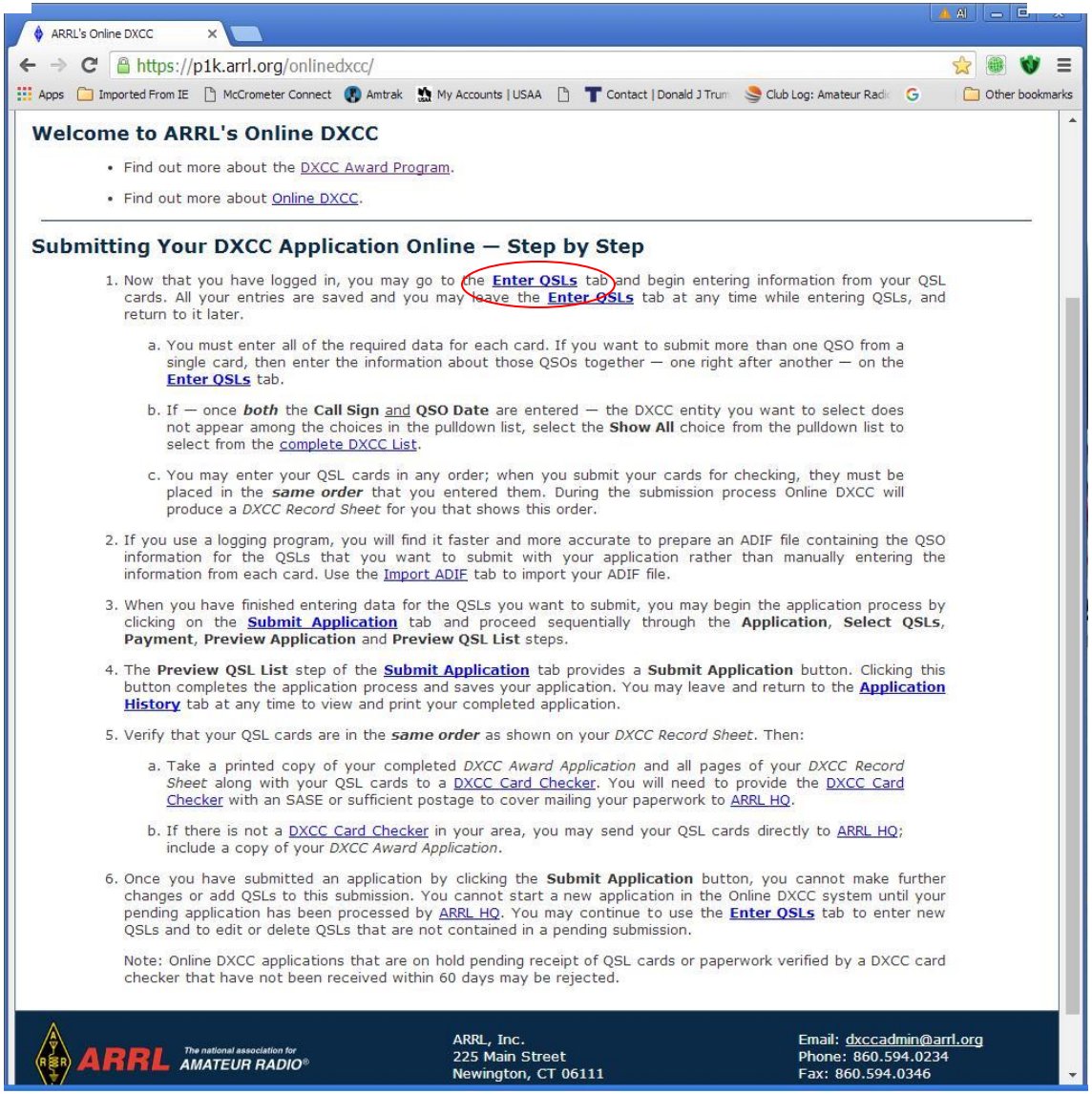
I use Paypal. →

ARRL On-Line Card Application

www.arrl.org/online-dxcc-application

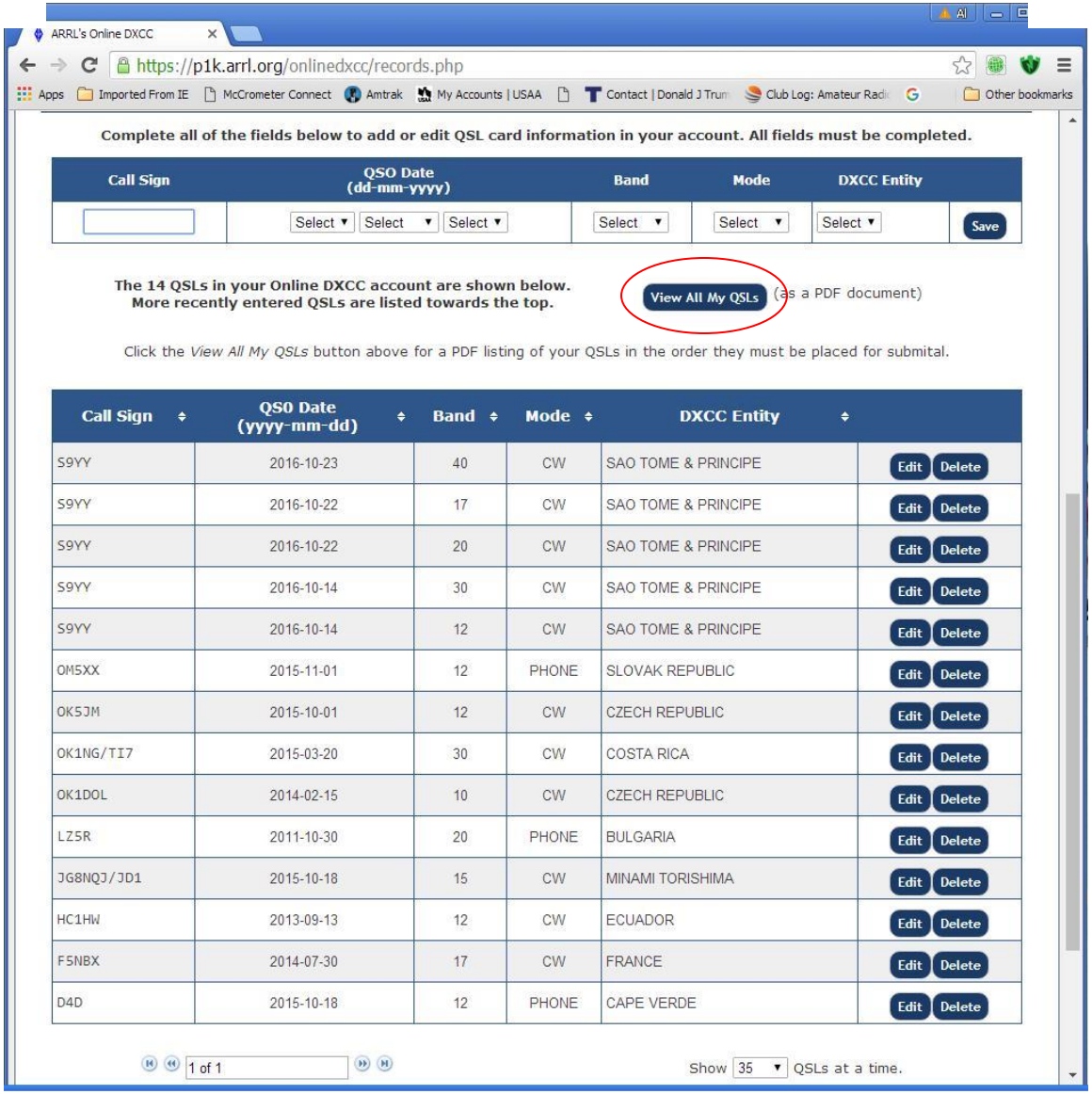


ARRL On-Line App – 2

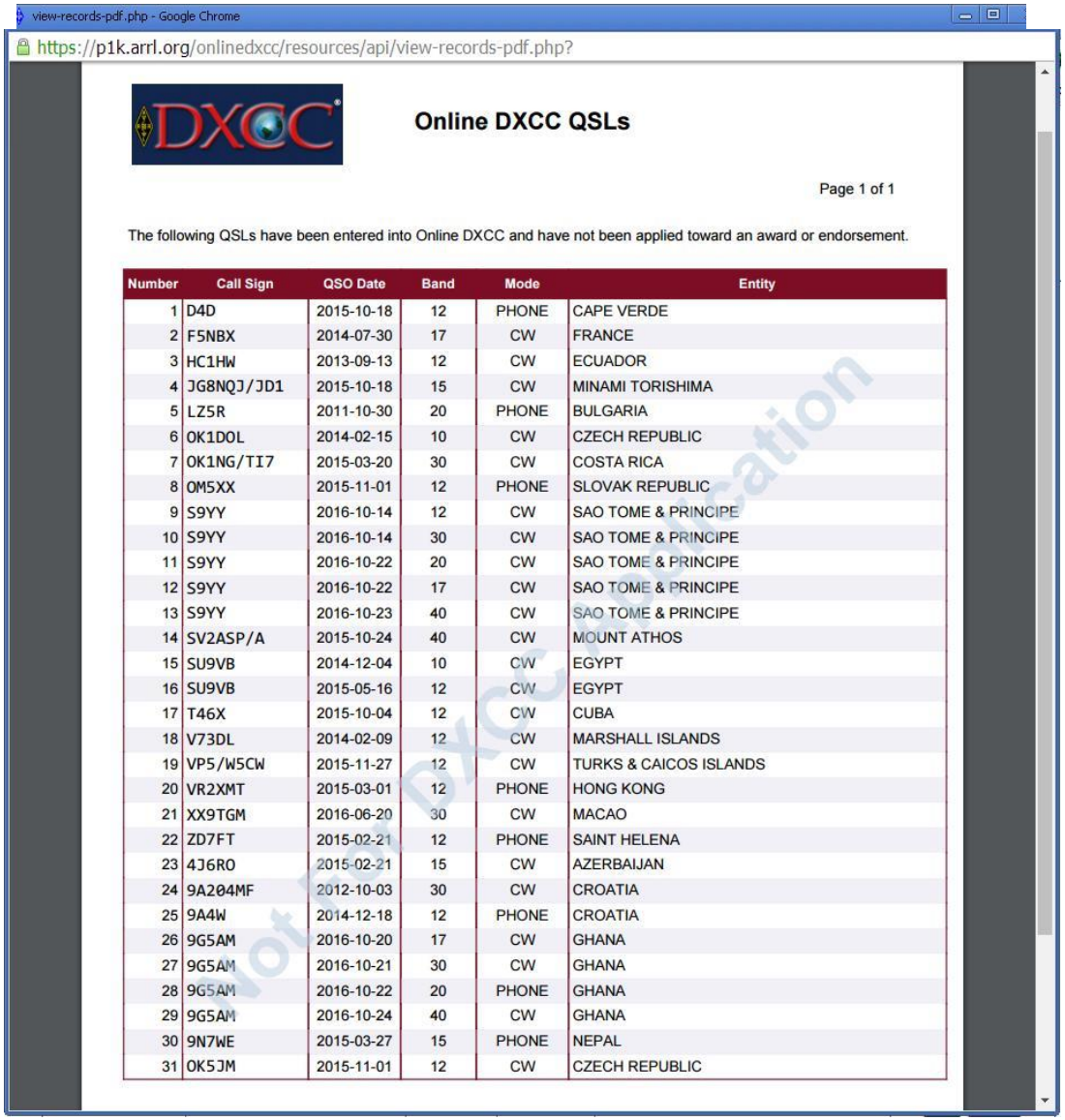


ARRL On-Line App – 3

ARRL On-Line App – 4



ARRL On-Line App – 5



Online DXCC QSLs

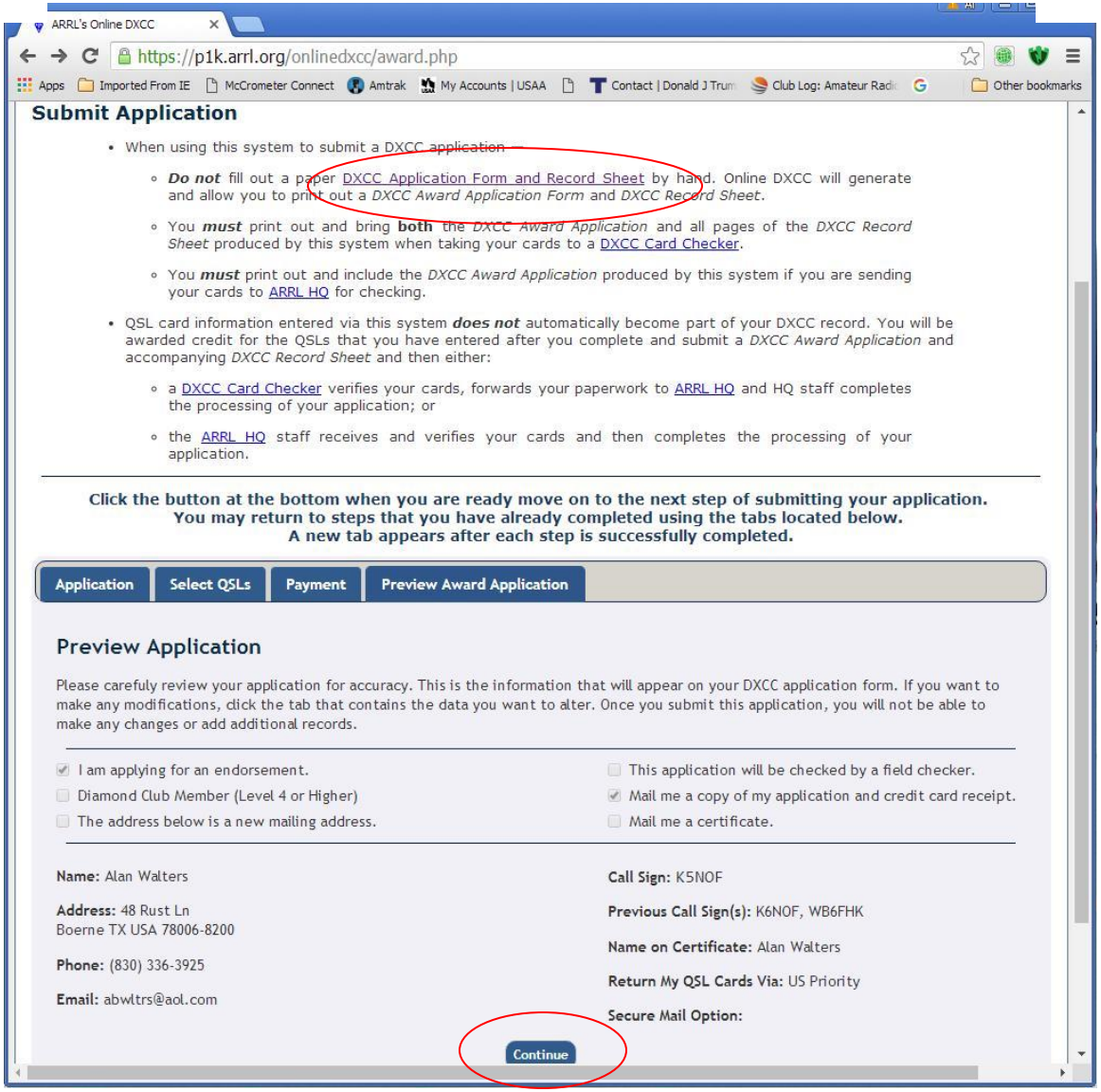
Page 1 of 1

The following QSLs have been entered into Online DXCC and have not been applied toward an award or endorsement.

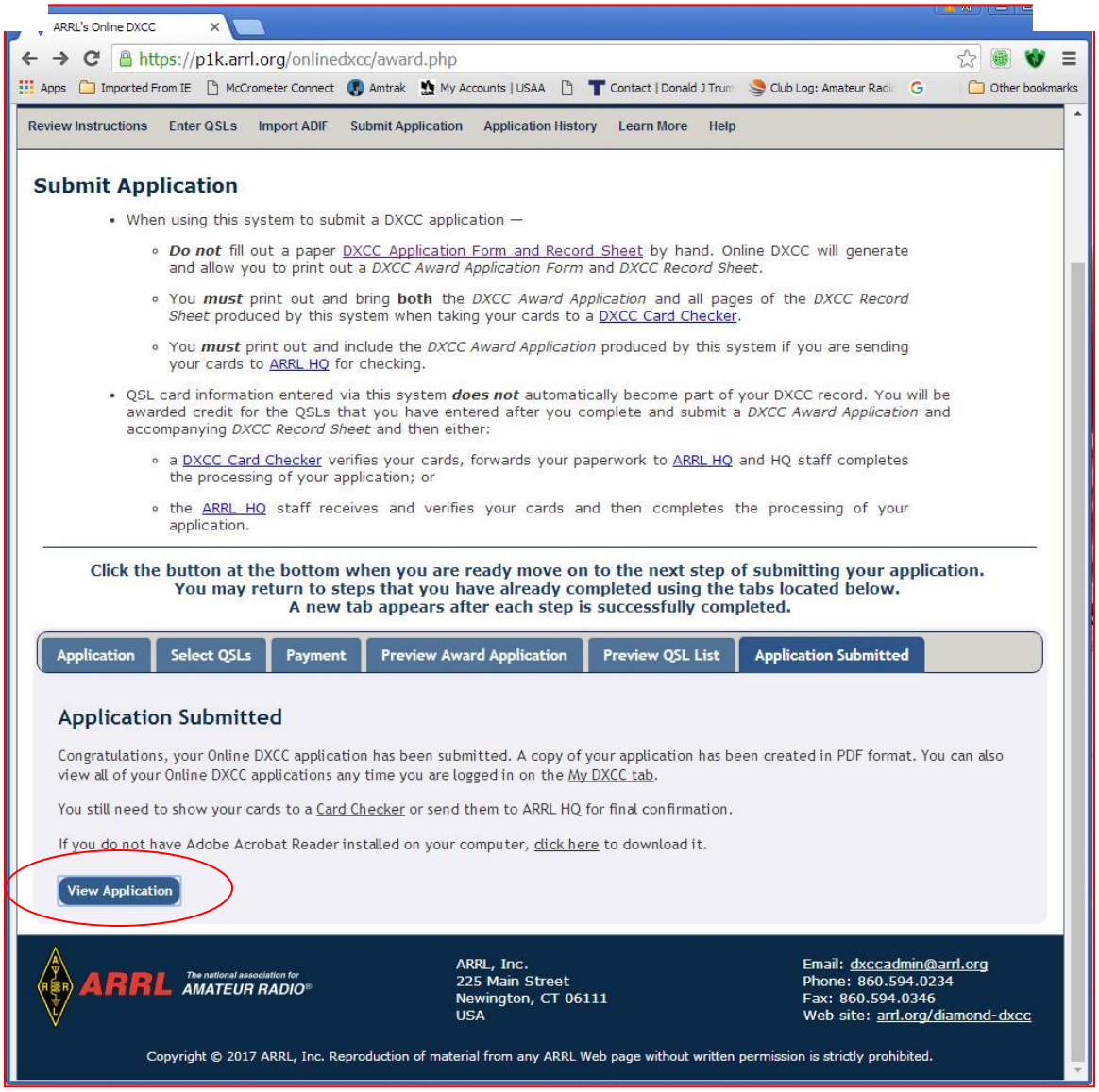
Number	Call Sign	QSO Date	Band	Mode	Entity
1	D4D	2015-10-18	12	PHONE	CAPE VERDE
2	F5NBX	2014-07-30	17	CW	FRANCE
3	HC1HW	2013-09-13	12	CW	ECUADOR
4	JG8NQJ/JD1	2015-10-18	15	CW	MINAMI TORISHIMA
5	LZ5R	2011-10-30	20	PHONE	BULGARIA
6	OK1DOL	2014-02-15	10	CW	CZECH REPUBLIC
7	OK1NG/TI7	2015-03-20	30	CW	COSTA RICA
8	OM5XX	2015-11-01	12	PHONE	SLOVAK REPUBLIC
9	S9YY	2016-10-14	12	CW	SAO TOME & PRINCIPE
10	S9YY	2016-10-14	30	CW	SAO TOME & PRINCIPE
11	S9YY	2016-10-22	20	CW	SAO TOME & PRINCIPE
12	S9YY	2016-10-22	17	CW	SAO TOME & PRINCIPE
13	S9YY	2016-10-23	40	CW	SAO TOME & PRINCIPE
14	SV2ASP/A	2015-10-24	40	CW	MOUNT ATHOS
15	SU9VB	2014-12-04	10	CW	EGYPT
16	SU9VB	2015-05-16	12	CW	EGYPT
17	T46X	2015-10-04	12	CW	CUBA
18	V73DL	2014-02-09	12	CW	MARSHALL ISLANDS
19	VP5/W5CW	2015-11-27	12	CW	TURKS & CAICOS ISLANDS
20	VR2XMT	2015-03-01	12	PHONE	HONG KONG
21	XX9TGM	2016-06-20	30	CW	MACAO
22	ZD7FT	2015-02-21	12	PHONE	SAINT HELENA
23	4J6RO	2015-02-21	15	CW	AZERBAIJAN
24	9A204MF	2012-10-03	30	CW	CROATIA
25	9A4W	2014-12-18	12	PHONE	CROATIA
26	9G5AM	2016-10-20	17	CW	GHANA
27	9G5AM	2016-10-21	30	CW	GHANA
28	9G5AM	2016-10-22	20	PHONE	GHANA
29	9G5AM	2016-10-24	40	CW	GHANA
30	9N7WE	2015-03-27	15	PHONE	NEPAL
31	OK5JM	2015-11-01	12	CW	CZECH REPUBLIC

Not a DXCC application

ARRL On-Line App – 6

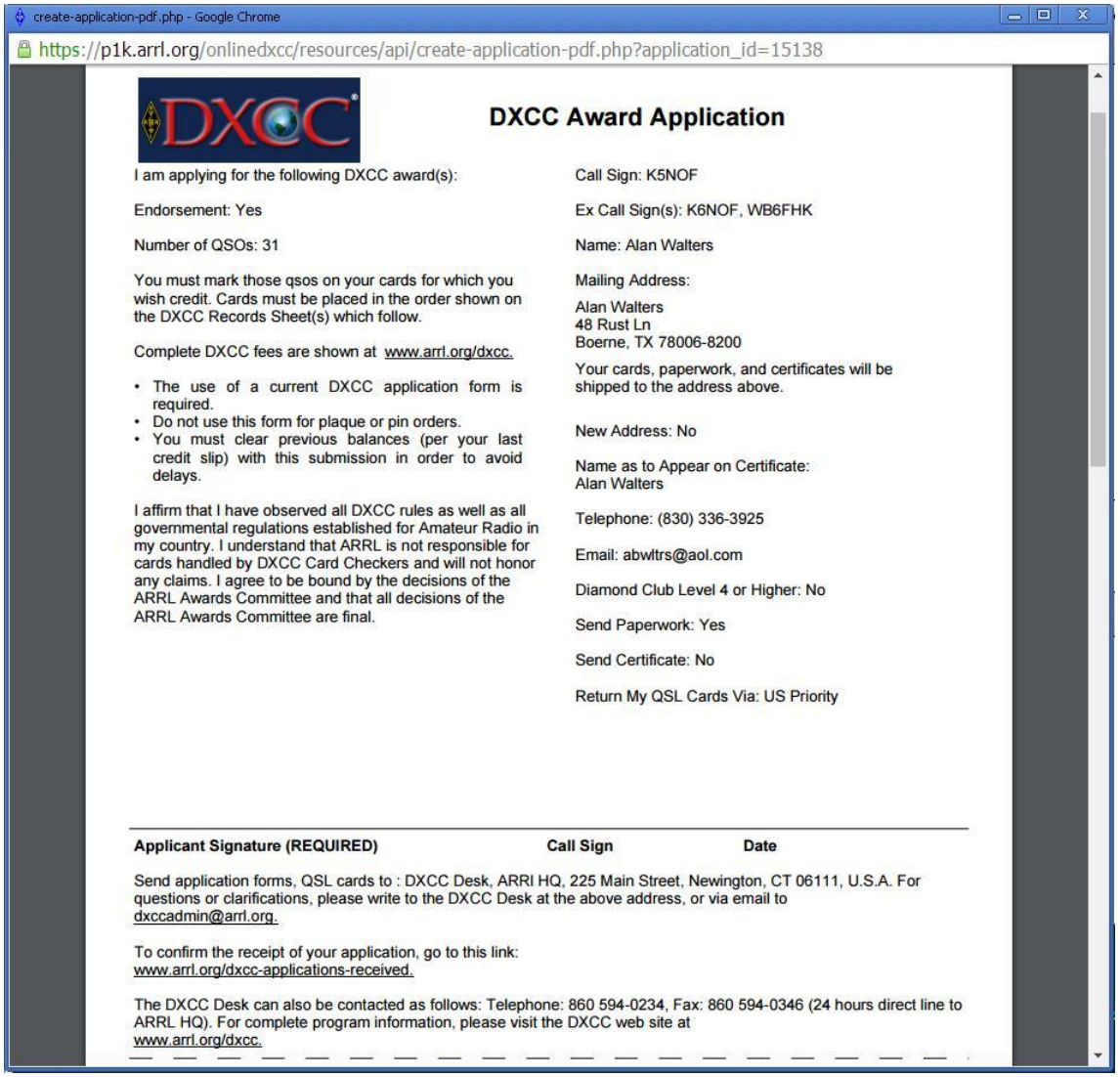


ARRL On-Line App – 7



ARRL On-Line App – Mailer

Mail this with your cards


create-application-pdf.php - Google Chrome

https://p1k.arrl.org/onlinedxcc/resources/api/create-application-pdf.php?application_id=15138

DXCC Award Application

I am applying for the following DXCC award(s):

Endorsement: Yes

Number of QSOs: 31

You must mark those qsos on your cards for which you wish credit. Cards must be placed in the order shown on the DXCC Records Sheet(s) which follow.

Complete DXCC fees are shown at www.arrl.org/dxcc.

- The use of a current DXCC application form is required.
- Do not use this form for plaque or pin orders.
- You must clear previous balances (per your last credit slip) with this submission in order to avoid delays.

I affirm that I have observed all DXCC rules as well as all governmental regulations established for Amateur Radio in my country. I understand that ARRL is not responsible for cards handled by DXCC Card Checkers and will not honor any claims. I agree to be bound by the decisions of the ARRL Awards Committee and that all decisions of the ARRL Awards Committee are final.

Call Sign: K5NOF

Ex Call Sign(s): K6NOF, WB6FHK

Name: Alan Walters

Mailing Address:

Alan Walters
48 Rust Ln
Boerne, TX 78006-8200

Your cards, paperwork, and certificates will be shipped to the address above.

New Address: No

Name as to Appear on Certificate:
Alan Walters

Telephone: (830) 336-3925

Email: abwltrs@aol.com

Diamond Club Level 4 or Higher: No

Send Paperwork: Yes

Send Certificate: No

Return My QSL Cards Via: US Priority

Applicant Signature (REQUIRED) **Call Sign** **Date**

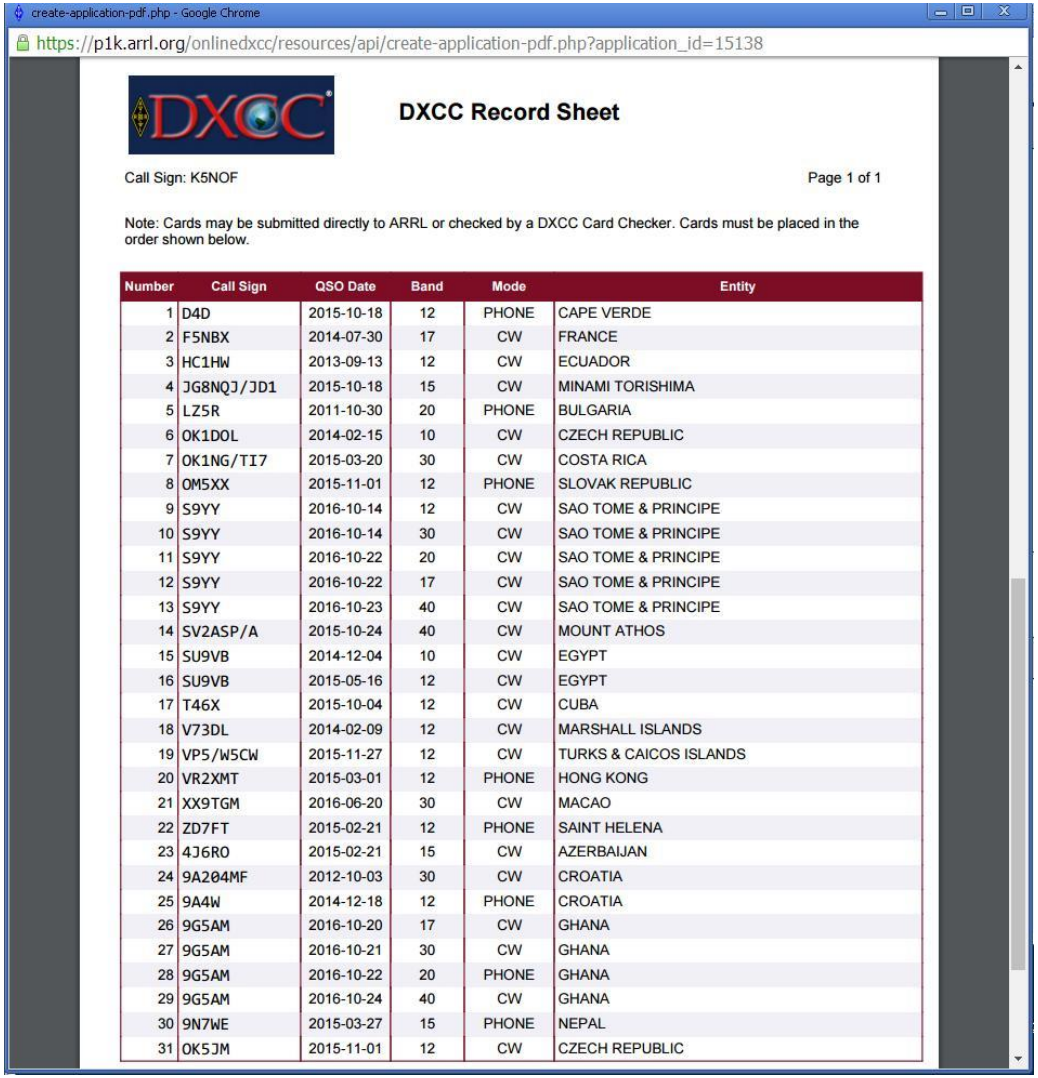
Send application forms, QSL cards to : DXCC Desk, ARRI HQ, 225 Main Street, Newington, CT 06111, U.S.A. For questions or clarifications, please write to the DXCC Desk at the above address, or via email to dxccadmin@arrl.org.

To confirm the receipt of your application, go to this link:
www.arrl.org/dxcc-applications-received.

The DXCC Desk can also be contacted as follows: Telephone: 860 594-0234, Fax: 860 594-0346 (24 hours direct line to ARRL HQ). For complete program information, please visit the DXCC web site at www.arrl.org/dxcc.

ARRL On-Line App – Mailer

Mail this with your cards


create-application-pdf.php - Google Chrome

https://p1k.arrl.org/onlinedxcc/resources/api/create-application-pdf.php?application_id=15138

DXCC Record Sheet

Call Sign: K5NOF

Page 1 of 1

Note: Cards may be submitted directly to ARRL or checked by a DXCC Card Checker. Cards must be placed in the order shown below.

Number	Call Sign	QSO Date	Band	Mode	Entity
1	D4D	2015-10-18	12	PHONE	CAPE VERDE
2	F5NBX	2014-07-30	17	CW	FRANCE
3	HC1HW	2013-09-13	12	CW	ECUADOR
4	JG8NQJ/JD1	2015-10-18	15	CW	MINAMI TORISHIMA
5	LZ5R	2011-10-30	20	PHONE	BULGARIA
6	OK1DOL	2014-02-15	10	CW	CZECH REPUBLIC
7	OK1NG/TI7	2015-03-20	30	CW	COSTA RICA
8	OM5XX	2015-11-01	12	PHONE	SLOVAK REPUBLIC
9	S9YY	2016-10-14	12	CW	SAO TOME & PRINCIPE
10	S9YY	2016-10-14	30	CW	SAO TOME & PRINCIPE
11	S9YY	2016-10-22	20	CW	SAO TOME & PRINCIPE
12	S9YY	2016-10-22	17	CW	SAO TOME & PRINCIPE
13	S9YY	2016-10-23	40	CW	SAO TOME & PRINCIPE
14	SV2ASP/A	2015-10-24	40	CW	MOUNT ATHOS
15	SU9VB	2014-12-04	10	CW	EGYPT
16	SU9VB	2015-05-16	12	CW	EGYPT
17	T46X	2015-10-04	12	CW	CUBA
18	V73DL	2014-02-09	12	CW	MARSHALL ISLANDS
19	VP5/W5CW	2015-11-27	12	CW	TURKS & CAICOS ISLANDS
20	VR2XMT	2015-03-01	12	PHONE	HONG KONG
21	XX9TGM	2016-06-20	30	CW	MACAO
22	ZD7FT	2015-02-21	12	PHONE	SAINT HELENA
23	4J6RO	2015-02-21	15	CW	AZERBAIJAN
24	9A204MF	2012-10-03	30	CW	CROATIA
25	9A4W	2014-12-18	12	PHONE	CROATIA
26	9G5AM	2016-10-20	17	CW	GHANA
27	9G5AM	2016-10-21	30	CW	GHANA
28	9G5AM	2016-10-22	20	PHONE	GHANA
29	9G5AM	2016-10-24	40	CW	GHANA
30	9N7WE	2015-03-27	15	PHONE	NEPAL
31	OK5JM	2015-11-01	12	CW	CZECH REPUBLIC

If Just Getting Started with SSB

- Use the standard phonetic alphabet.
- Developed by the military and civil aviation to provide a common understanding across many languages.
- Avoid the home brew alphabet.
  - Z is Zulu and not Zanzibar
  - UTC (GMT) is also “Zulu Time”, the 24th of 24 time zones around the World.
- Sometimes it is best to avoid using Q signals and use plain language.
  - Simply say the meaning. Examples:
    - (QSL) “ roger, copy all.”
    - (QRX) “ I will call you back in xx minutes.”
    - (QRN) “ we have static here”
    - (QRM) “ we have interference here”
    - (QRU) “ I have nothing more for you”
- Examples of procedure signal use:
  - (AS) wait.
  - (BT) break.
  - (DE) this is.
  - (K) over.
  - (R) roger, copy all.
  - (SK) clear.
- See the ARRL Operating Manual for these and other examples.
- Watch the mic. gain.

If Just Getting Started with CW

- Procedures and protocols date from railroad telegraphy of the late 1800s and Morse of the early 1900's.
  - Commercial traffic handling between ship and shore until 12 July, 1999.
    - Listen to exchanges at www.radiomarine.org to hear how it was done.
    - Listen to Denise Stoops send the closing message from KPH at the end of CW commercial ops.
    - https://www.youtube.com/watch?v=2a4scmlC7tI
  - US Navy & USCG communication procedure adopted by other military services.
  - These and Commercial procedures form the basis of amateur CW procedures.
- "Q" Signals.
  - First used around 1906 in commercial traffic to speed communication.
  - Adopted by Amateurs, then Navy, USCG and other military before WWII.
  - Examples: QTH – position, QSA -- signal strength, QRM – interference, QRN – static, QRO – increase power, QRP – reduce power, QRU – nothing for you, QRX – call back, QRL – busy, QRZ – who is calling, QSB – fading, QSL – receipt, QSY – change frequency. (See ARRL operating manual).
- Procedure Signals.
  - Commenced with early commercial ,amateur, and military communications.
  - Examples: AR – end of message, AS – wait, BT – break, CQ – any station, DE – this is, GL – good luck, IMI -- ?, K – invitation to transmit, NIL – not in log, R – receipt, TU – thanks, 73 – best wishes (male), 88 – best wishes (female), VA (SK) – end of my work (clear). (See ARRL operating manual).

DX Code of Conduct

- Listen, listen, listen, listen, listen, listen, and then listen some more –
  - **Never** tune up on the DX's frequency.
  - Don't trust the call on the DX packet cluster, listen to what the DX says.
  - Don't call unless the DX's signal is strong enough to copy.
  - Don't call on the DX's frequency unless you are **sure** he is not working split.
  - Don't call until your are sure DX has completed the current QSO.
  - Don't call when the DX responds to another call sign.
  - Don't call when the DX queries another call not like yours.
  - Don't call when the DX queries other geographic areas.
- When you call –
  - Send your complete call, once, listen -- twice, listen – three, four times max.
  - When DX answers –
  - Send your exchange or signal report once and only once.
  - DX will ask for fills if needed.
- If DX answers with your correct call sign –
  - (Generally) don't send your call again unless part of the exchange.
  - He already told you he knows who you are!

Extras are the biggest violators; particularly those nearing the Honor Roll.