### Ham Radio Software Discussion

Alan Walters - K5NOF





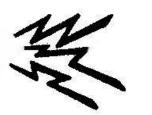
Presented in increments to the KB5TX Membership October 7, 2010 through April 7, 2011

#### 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



- Casual Comm. (rag chewing)
- Traffic Handling
- Image Communications
- HF Digital Communications
- Operating Awards
- Contesting
  - CW
  - SSB
  - RTTY

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



### Purpose



- Encourage the membership to:
  - Convert paper logs to digital format.
  - Use Logbook of the World (LoTW) and eQsl in addition to QSL cards.
  - Use logging software.
  - Contest (CW, SSB, RTTY, whatever) and
  - Use Contest Software.
- Disclaimer:
  - There is an entire universe of opinion on these subjects.
  - Many different logging and contesting programs (such as TRLog, N1MM, N3FPJ).
  - Not here to advocate specific software.
  - Here to simply describe what I do, what I use and why.



#### Why



#### Convert paper logs to digital (ADIF) format?

Then you can upload your logs to LoTW and eQSL for QSO confirmation and award credit.

Use Logbook of the World (LoTW) and eQsl in addition to QSL cards?

- LoTW becoming world-wide standard for ARRL awards.
- Fast confirmations at no cost (but ARRL charges for the award).

#### Use logging software?

- Log becomes electronic data base which supports.
  - LoTW & eQSL upload and download.
  - QSL management and different award tracking.

#### Participate in Contests?

- Build personal proficiency
- Work states and countries needed for various awards.

#### **Use Contest Software?**

- Beats paper and pencil and dupe sheet.
- Can't compete without it.



#### **Software Overview**

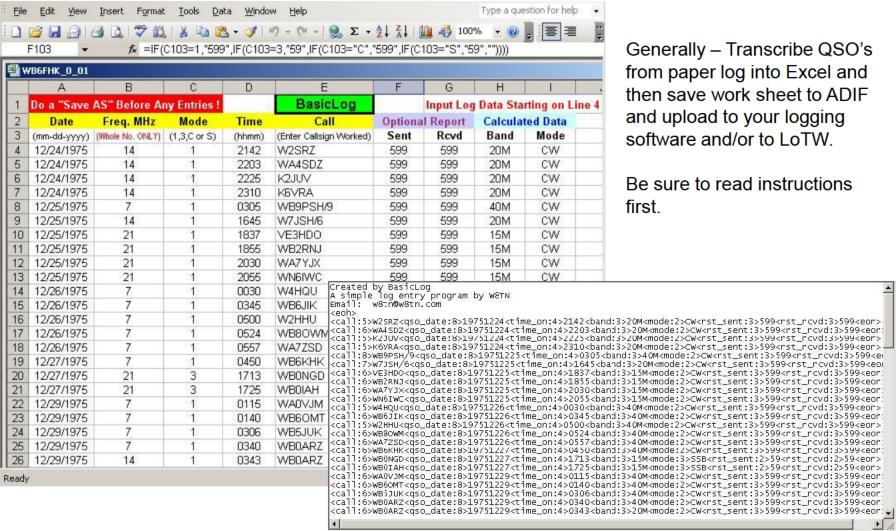


- Basic Log Import
  - Manually enter 100 QSO's at a time.
  - Convert to ADIF format
  - Import into logging program to build an electronic log.
- LoTW
  - A relational data base that compares your QSO's (call, time, frequency) with others (call, time, frequency) for a match.
- DX4Win www.dx4win.com
  - Will cost \$90 but
    - Full of features, has users' manual, very active reflector for users, supported by developers with regular updates.
    - LoTW support
    - Major upgrade from one version to another -- \$30.
- Writelog <u>www.writelog.com</u>
  - Will cost \$30 but
    - Supports any CW, SSB or RTTY contest
    - Full of features, has users' manual, very active reflector for users, supported by developers with regular updates.
    - Annual maintenance fee -- \$30.
    - Newbe starter package -- \$18.
- Introduction to each



### **Basic Log Import**







### **Basic Log Import**

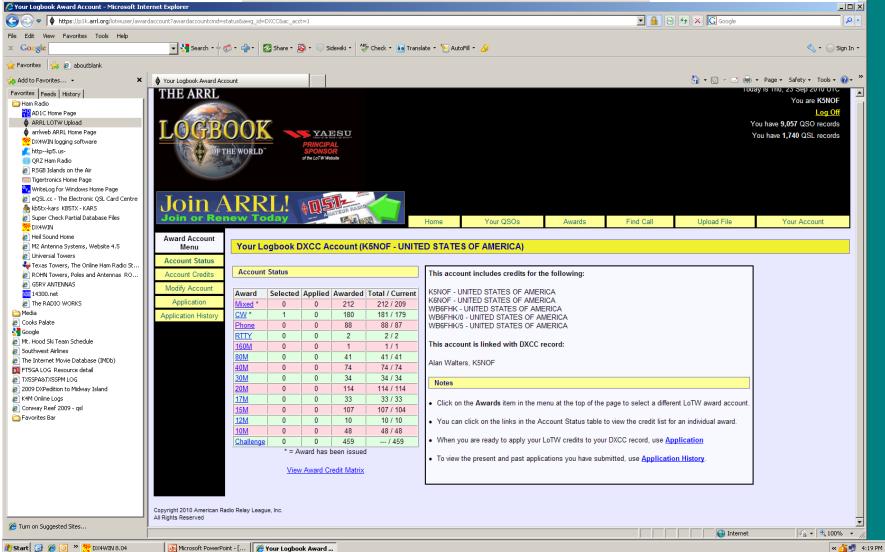


- Save a copy of the worksheet and use this for entries
- DATE -- Type date as mm-dd-yyy or m-d-yy and program will convert. There must be a dash (-) or slash (/) between M, D and Y.
- Frequency in MHZ. Just the whole number such as 3, 7, 14, etc.
- Mode. Use "1" for CW, "3" for SSB. For other modes, overtype.
  - Be sure to use a designation accepted by ARRL. PSK counts as 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 "/" 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.
  - 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 edit unused entry slots using text editor.



# LoTW Showing the K5NOF account







#### **LoTW**



# General Steps (See <a href="https://www.arrl.org">www.arrl.org</a> for 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.

Print the instructions and follow step by step.



# Example of LoTW Award Credits



# Partial report from the K5NOF DX Challenge Account

Entity AFGHANISTAN	40088									
AECHANISTAN	160M	80M	40M	30M	20M	17M	15M	12M	10M	6M
AI GIIANGIAN										
AGALEGA & ST BRANDON ISLANDS					3B6CD					
ALAND ISLAND					OH0NSJ				100	
ALASKA			KL7FH	KL7J	KL7IRN		KL7Y		KL7Y	
ALBANIA			ZA1Z							
ALGERIA										
AMERICAN SAMOA							AH3FF			
AMSTERDAM & ST PAUL ISLAND										
ANDAMAN & NICOBAR ISLAND										
ANDORRA										
ANGOLA										
ANGUILLA							VP2EKK			
ANNOBON										
ANTARCTICA				VP8CTR	R1ANC			VP8CTR		
ANTIGUA & BARBUDA			W6QL/VP2A							
ARGENTINA			LU5FF		LU3FLV		LQ0F		LU5FF	
ARMENIA										
ARUBA		P49V			P49V		P40A		P49V	
ASCENSION ISLAND					ZD8HR		ZD8Z			
ASIATIC RUSSIA			RA0FU		RA0FU	<u>UA0FAI</u>				
AUCKLAND & CAMPBELL ISLAND										
AUSTRAL ISLAND			TX5SPA	TX3D	TX5SPA	TX5SPA	TX5SPA		TX5SPA	
AUSTRALIA					VK4QK	VK7XX				
AUSTRIA									OE3SE	
AVES ISLAND										
AZERBAIJAN										
AZORES		CR2X	CR2X		CR2X	CR1Z	CR2X			
BAHAMAS		C6AKQ	C6AKQ		C6ANI	C6ANM				
BAHRAIN										
BAKER HOWLAND ISLAND										
BALEARIC ISLAND				EA6SX						
BANABA ISLAND								TI-		
BANGLADESH										
BARBADOS			8P5A		8P6AH		8P5A			



## **DX4Win Logging Software**



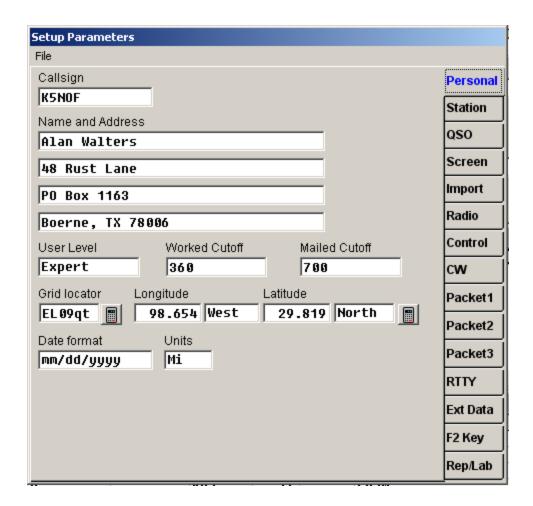
- Full of features
  - Packet terminal
  - Packet spots
  - Band map
  - Call sign information (country, heading, distance, QSL manager, etc.)
  - Use for general QSO's, working DX, casual participation in contests.
  - Program includes PSK31 utilities similar to DIGIPAN.
  - MMTTY RTTY engine integrates 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
- Just to name a few.
- See <u>www.dx4win.com</u> for more information.



### DX4Win Setup Tabs



- Use these series of tabs to tell DX4Win how you want the program to operate:
  - Station capabilities
  - Defaults for a new QSO
  - Preferred fonts
  - Import parameters
  - Radio (s). Can be setup for SO2R.
  - Band decoders
  - Rotor control
  - Antenna control
  - CW generation via serial or parallel.
  - How to handle packet spots.
  - Setup for RTTY.
  - External call sign data base.
  - QSL confirmations
  - Label generation

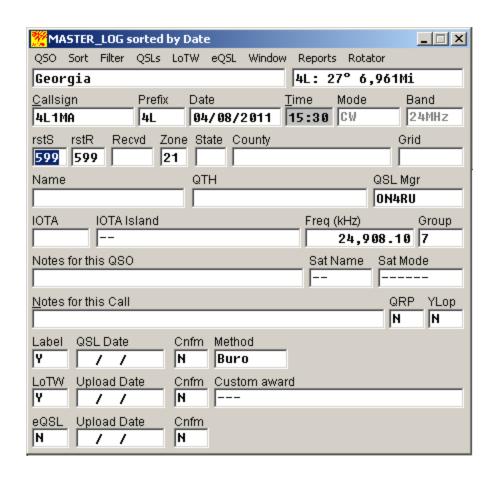




### **QSO Entry Window**



- Information generated by packet spot:
  - Callsign (can be entered manually)
  - Once call is entered other info generated by internal data base:
    - Country, heading/distance, prefix, QSL manager, IOTA number and name.
- Information generated by radio:
  - Mode, Band, Frequency
- Information generated by call sign data base:
  - Name, QTH
- Notes for QSO and Call entered by operator.
- Label, LoTW and eQSL defaults set in preferences.
- See user manual at <u>www.dx4win.com</u> for more information.

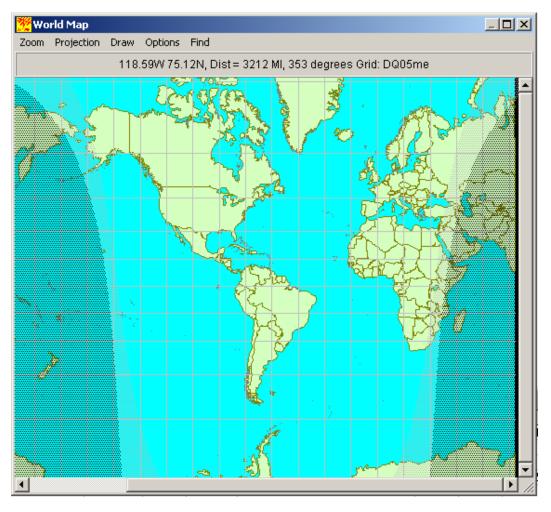




## **Grayline Map**



- A key tool for working DX
  - Map updated continuously.
  - Zoom in or out as desired.
  - Choice of standard map projections
  - Choice of amount of geographic detail shown.
  - Propagation paths based on spots.





# **K5NOF Master Log**



Column headings selected from menu. User determines sequence and arrangement. (Yes, I do work SSB on occasion.)

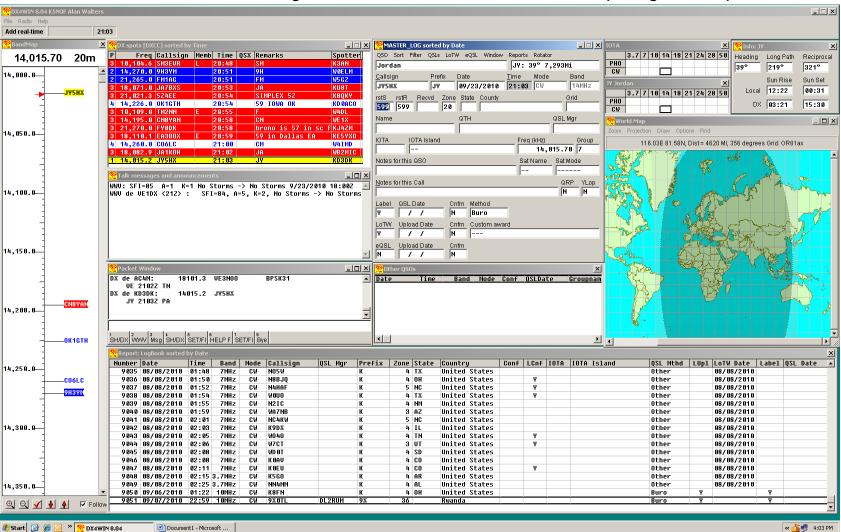
lumber												
	Date	Time	Band	Mode	Callsign	QSL Mgr	Prefix	Zone	State	Country	Conf	LCnf
9362	03/05/2011	21:49	14MHz	SSB	HI3K	KB2MS	HI	8		Dominican Republic		
9363	03/05/2011	21:51	28MHz	SSB	ZL1BYZ		ZL	32		New Zealand		
9364	03/05/2011	21:55	28MHz	SSB	PY2UZ		PY	11		Brazil		Y
9365	03/05/2011	21:57	28MHz	SSB	LP1H	EA5KB	LU	13		Argentina		
9366	03/05/2011	22:02	28MHz	SSB	KH6YR	I OMWI	KH6	31	HI	Hawaii		
9367	03/05/2011	22:06	21MHz	SSB	PY2KPY		PY	11		Brazil		
9368	03/05/2011	22:08	21MHz	SSB	LP2F	LU1FDU	LU	13		Argentina		Y
9369	03/05/2011	23:42	28MHz	SSB	F08RZ	F8BPN	FO	32		French Polynesia		Y
9370	03/05/2011	23:45	21MHz	SSB	CX2DK		CX	13		Uruguay		
9371	03/05/2011	23:46	21MHz	SSB	RWOCWA	RWOCF	UA9	19		Asiatic Russia		
9372	03/05/2011	23:47	14MHz	SSB	XP1A	0Z1ACB	OX	40		Greenland		
9373	03/05/2011	23:48	14MHz	SSB	P49Y	AE6Y	P4	9		Aruba		Y
9374	03/05/2011	23:49	14MHz	SSB	UP9/W6PH		UP9	5		Bermuda		
9375	03/06/2011	01:13	7MHz	SSB	YT8A	YU1EA	YU	15		Serbia (ex-Yuqoslavia)		
9376	03/06/2011	01:14	7MHz	SSB	HC2AQ	EA5KB	HC	10		Ecuador		
9377	03/06/2011	01:16	7MHz	SSB	XE1L	WA3HUP	XE	6		Mexico		
	03/06/2011	01:24	7MHz	SSB	ZF2KH		ZF	8		Cayman Islands		
	03/06/2011	01:25	7MHz	SSB	TM6N		F	14		France		
	03/06/2011	01:26	7MHz	SSB	HK1T	EA5KB	нк	9		Colombia		
	03/06/2011	01:28	7MHz	SSB	HQ2GL	W9GL	HR	7		Honduras		
	03/06/2011	01:30	7MHz	SSB	OM3GI		OM	15		Slovakia		
	03/06/2011	01:30	7MHz	SSB	S52WW		\$5	15		Slovenia		
	03/06/2011	01:31	7MHz	SSB	0E4A	0E1EMS	0E	15		Austria		Y
	03/06/2011	02:19	10MHz	CW	N1SNB/CY0	NOTG	CYO	5		Sable Island		
	03/06/2011	02:28	7MHz	SSB	WP3C	W3HNK	KP4	8		Puerto Rico		
	03/06/2011	02:30	7MHz	SSB	PT5T	N3SL	PY	11		Brazil		Y
	03/06/2011	02:37		SSB	PJ4G	WA2NHA	PJ4	9		Bonaire		
	03/06/2011	02:46	7MHz	SSB	SU9CUY		SU9	20		Crete		Y
	03/06/2011	02:48	7MHz	SSB	U31AM	N2ZN	U3	7		Belize		
	03/06/2011	02:57		SSB	P49Y	AE6Y	P4	9		Aruba		Y
	03/06/2011	02:57		SSB	C6ANM	WAZIYO	C6	8		Bahamas		Ÿ
	03/06/2011	02:57		SSB	YOSAPJ	EIIO	YO	20		Romania		i i
	03/06/2011	02:58		SSB	UU1K		UT	16		Ukraine		
	03/06/2011	02:58		SSB	EA8URL		EA8	33		Canary Islands		
	03/06/2011	02:58		SSB	YU1WS		YU	15		Serbia (ex-Yugoslavia)		
	03/06/2011	02:58		22B	IR4C	IK4THF	I	15		Italy	+	
	03/06/2011	02:59		SSB	HQ2W	OK1DOT	HR	7		Honduras	+	Y
	03/00/2011		9.711NZ	220	VESC	PIDUETIN	UL AL			Movico	+	U



#### DX4Win



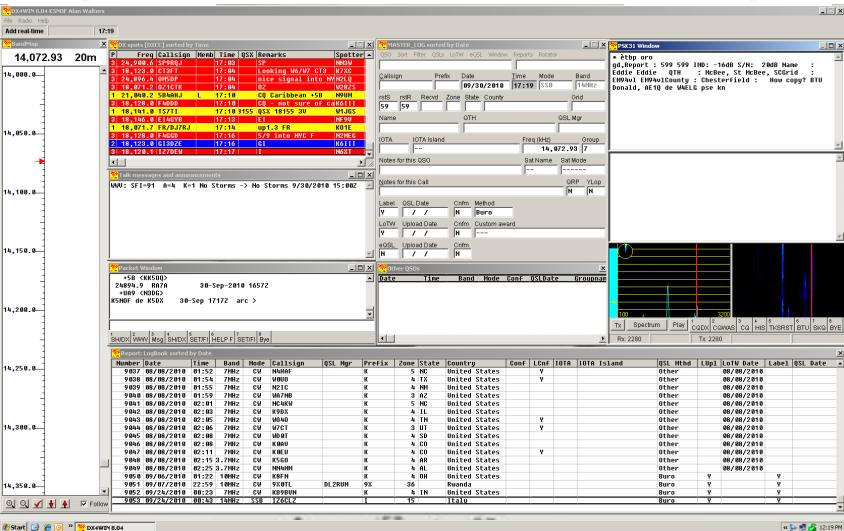
User selects, sizes and arranges windows as desired. K5NOF setup for general operation.





#### DX4Win PSK 31 Interface

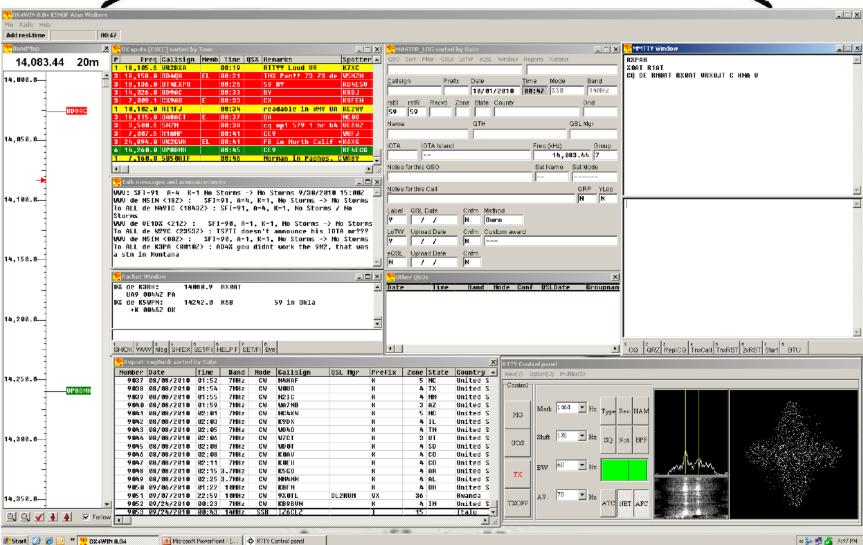






#### DX4Win with MMTTY







## Writelog



- Setup
- Band Map
- Spots, Packet Window
- QSO entry window
- Utilities: Super Check Partial and Same Call
- How to use if Search and Pounce
- MMTTY Window



### Contesting



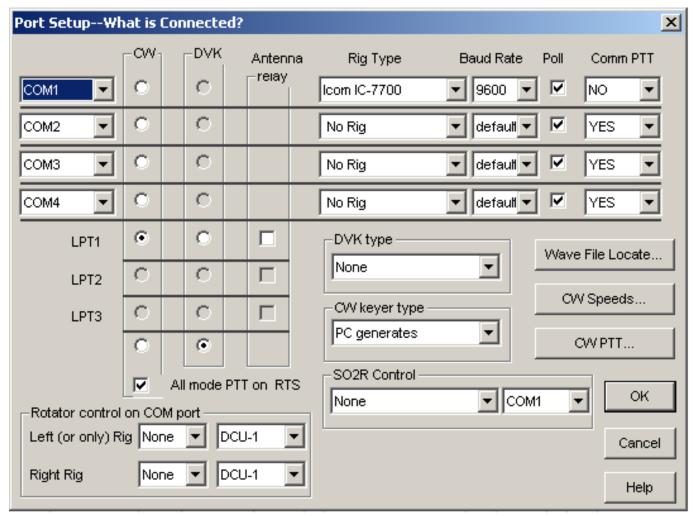
- Contesting in General
- Why? To improve operator proficiency and to work states and entities needed for various awards.
- Compete for score. Maybe a combination of goals. BUT
  - One does not need to formally submit a log if one's goal is simply to pick up needed states or DXCC entities.
  - WAS. ARRL November Sweepstakes (CW and SSB). ARRL RTTY Roundup.
  - DXCC, ARRL DX Contest. CQWW and CQ WPX (all have a CW and SSB weekend).
- If just getting started:
  - Read the contest announcements in QST for date, time, rules and exchange.
    - CQ sponsored contests? See web page.
  - New to contesting?
    - Use Search and Pounce e.g. select spots or tune up-down band for stations.
    - Begin with SSB.
    - Listen to be sure of the other station's exchange and then jump in.
  - Hesitant on CW?
    - Wait until day two when the "big gun" contesters become desperate.
    - Make sure you know his exchange and the next serial number. Then jump in.
    - They will be more than willing to slow down for you because by now your single QSO could be worth 60 or more points due to the multiplier effect.



### Ports (What's Connected?)



Provides complete capability for rig control, SO2R, antenna control.





## Messages



Can run an entire contest using "F" keys to send CW, Voice or RTTY messages and exchanges. See user manual at <a href="https://www.writelog.com">www.writelog.com</a> for more information.

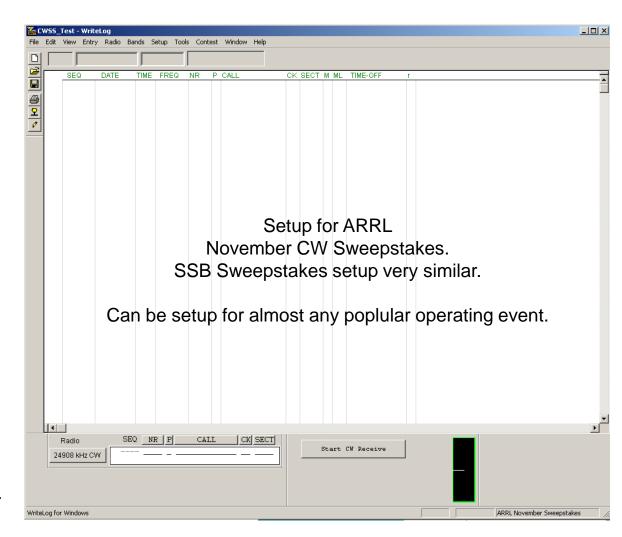
CW/RTTY/SSB Memory Setup								
		D						
F2:	CQ CQ CQ TEST DE K5NOF K	Browse						
F3:	%C NR % U K5NOF 75 STX K	OK						
F4:	TU QRZ SS de K5NOF K							
F5:	%C de K5NOF K	Cancel						
F6:	K5NOF	Help						
F7:	%C NR % U K5NOF 75 STX K							
F8:	TU	Normal keys						
F9:		C Shifted keys						
F10		C SSB						
F14F11:	CQ SS de K5NOF K	C Shifted SSB						



# Writelog log window, QSO entry window & CW decoder



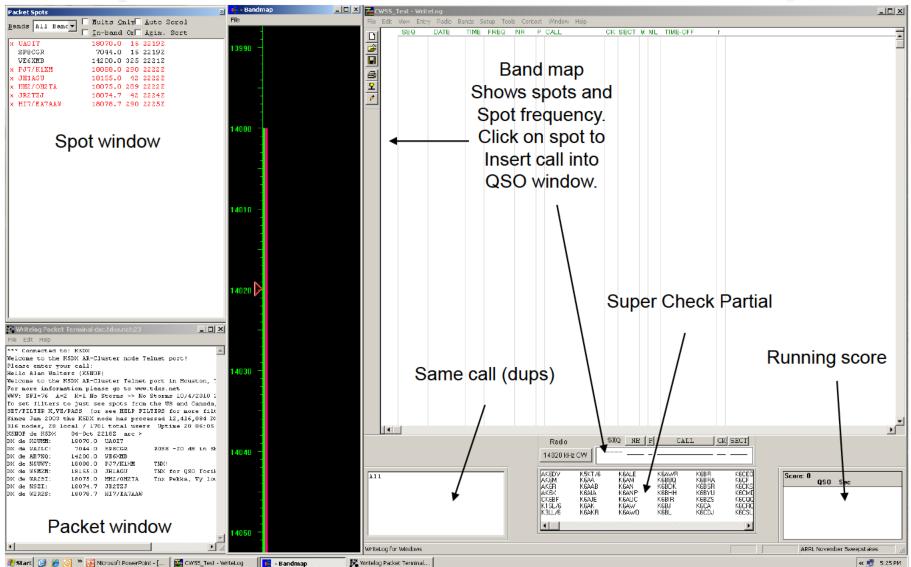
- Log can be converted to ADIF to input to master log and to upload to LoTW.
- Can also be converted to Cabrillo format to submit to contest sponsor for score.
- If running S&P, take your time filling in the exchange window (lower left) until you are sure. Then hit the "F" key with your call and take it from there.
- Use CW decoder to be sure of what you "think" you are hearing.
- You will be surprised by your increase in proficiency at the end of the contest whether you are going for score or not.





# WriteLog Set up for November Sweepstakes

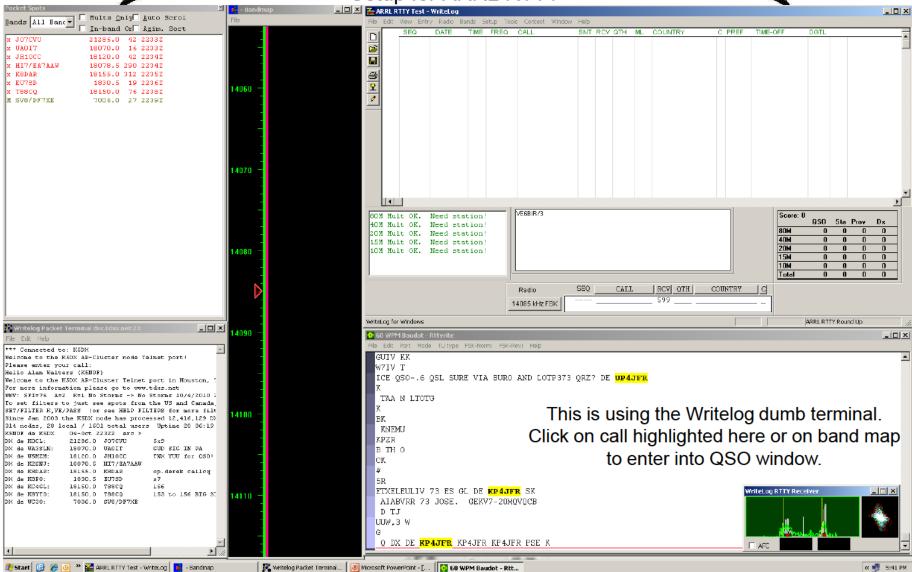




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# Writelog Setup for ARRL RTTY

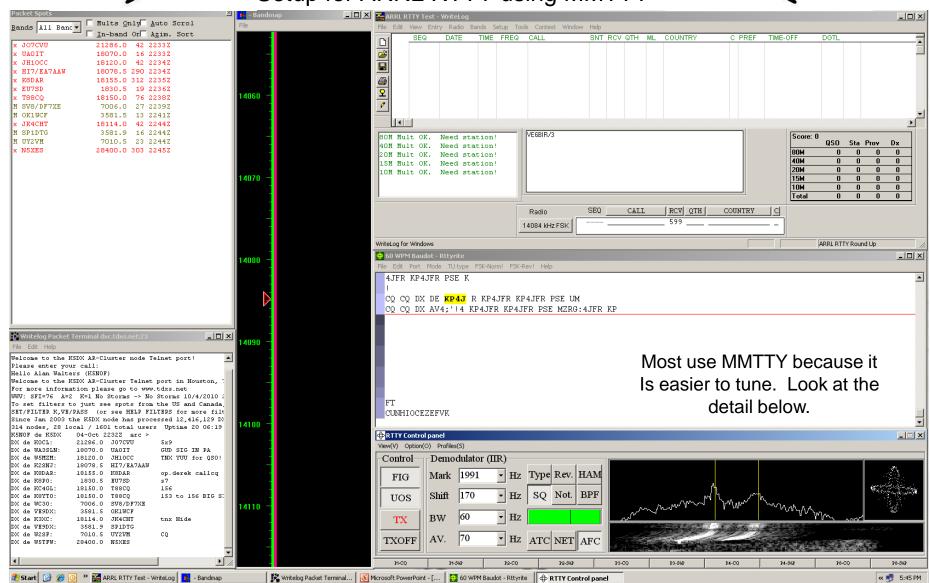






# Writelog Setup for ARRL RTTY using MMTTY







#### Conclusion



- We have talked about how to convert paper logs to digital format and how to use Basic Log to do this.
  - Why? To be able to upload your QSO's to LOTW and into logging software.
- We have been to the LOTW webpage to show how to get started and we have talked about using Logbook of the World and eQsl in addition to QSL cards.
  - Why? Obtain confirmations for your QSO's without the need to mail cards (except for cards needed for IOTA confirmations).
- We have talked about logging software.
  - Why? Operating aids such as packet cluster, spot announcements, gray line depiction. An electronic log to manage LoTW and eQSL uploads. Utilities to easily track your progress toward various operating awards.
- We have talked about contesting and contesting software.
  - Why? Operator proficiency, award entities, and to have fun!
- Disclaimer:
  - There is an entire universe of opinion on these subjects.
  - Many different logging and contesting programs (such as TRLog, N1MM, N3FPJ). All are good in their way.
  - Not here to advocate specific software; a matter of personal preference.
  - I have simply described what I do, what I use and why.



#### Some Editorial Comments



If low ERP, you will have a huge advantage with CW

- Contrary to popular belief, CW is alive, well and growing.
  - Rare DX with modest stations seem to favor CW.
    - CW will have more punch at any given power level due to less bandwidth.
    - 100W to a 6dB gain antenna (without calculating feed line loss) sounds like 400W.
    - Relatively easy and not too expensive to become competitive on 14 mHz and above.
    - On any given day, you will hear as many DX on CW as SSB.
  - CW uses a modest, English based vocabulary, almost universally understood.
    - No struggle to understand the DX's accent.
- So the rewards seem well worth the effort to learn CW.
- How?
  - Key and some type of sender to learn the alphabet by sending.
  - Listen to code practice sessions on W1AW.
  - Get a "code buddy" to practice with.
- Finally, when working DX, there is a DX Code of Etiquette to adhere to:



### **DX** Etiquette



- Listen, listen, listen, listen, listen, and then listen some more
  - 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 finished 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.
  - Don't trust the call on the DX cluster, listen to what the DX says.
  - Never tune up on the DX's frequency.
- 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 knows who you are!

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