

WD2XSH status report: June 1 - August 31, 2011**Prepared by Fritz Raab, W1FR, Experiment Coordinator****September 21, 2011****1. SUMMARY OF OPERATIONS**

This report provides a summary of WD2XSH activity during the Summer 2011. The key statistics of our operations during this period are:

- Number of QSOs: 1 additional, total 451;
- Number of reports via web site: 212 additional, total 13,457;
- Operating hours: 6,750 additional, total 106,158; and
- Number of interference complaints: 0.

All statistics are based upon the end of the reporting period (08/31/11). The logs now show only transmitting hours.

2. ADMINISTRATIVE

There are no administrative issues to report.

3. COMMUNICATIONS

The locations and status of 500-kHz amateur/experimental stations in the USA are shown in Figure 1.

As expected, activity declined along with the decrease in night-time hours and increase in QRN during the summer. Nonetheless, several of our operators (especially /6, /7, /12, /17, /29, /31, /37, and /38) kept their transmitters on the air during the summer months. On occasion, conditions were reasonable. Over 200 new reports were filed. A QRSS signal from /7 may have been received in Australia (8900-mi path). Unfortunately, only the "H" was clearly visible on the waterfall display.

Data from three ground-wave tests organized by Ralph Wallio W0RPK were processed and the report is ready in draft form. These results show that ordinary amateur-radio type stations can communicate reliably over distances of 100 - 200 mi using modern digital techniques such as PSK-31 and MSK-31. Ralph's station (/34) used an antenna that can be transported and set-up easily where needed.

During the X7 solar flare on August 9, strong signal enhancements were observed by KL1X in Alaska. The signal from /7 appeared abruptly, coincident with the flare.

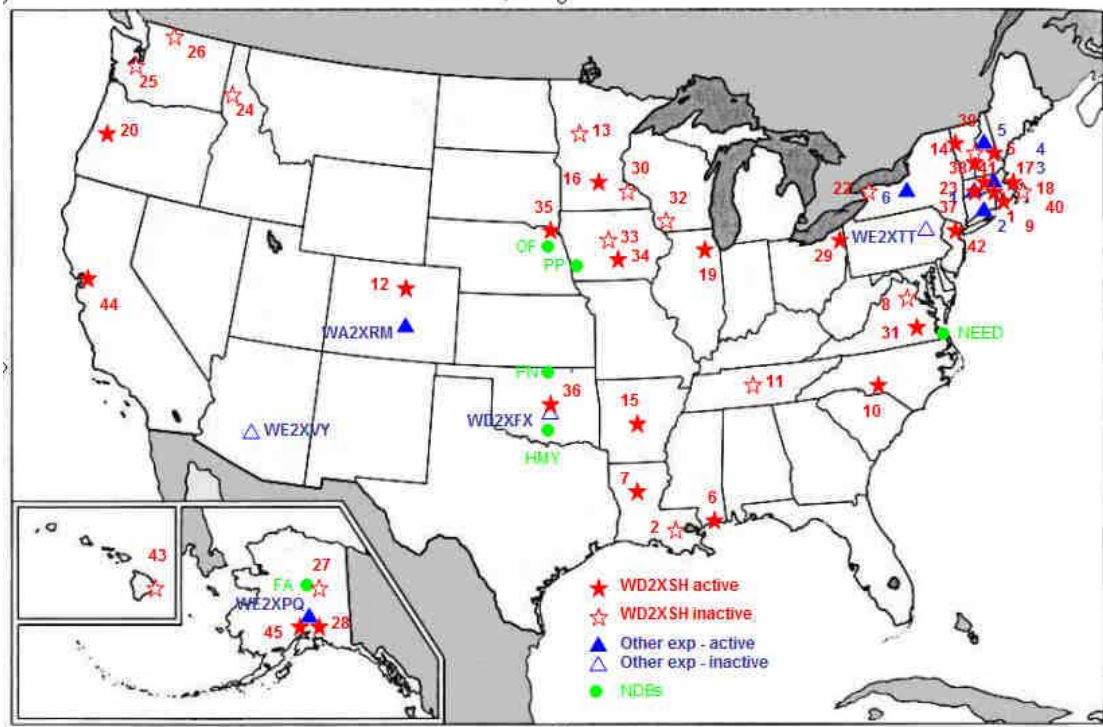


Figure 1. Locations and status of US 500-kHz experimental stations.

4. ACTIVITIES

Michael Laronda, WA1OMI - WD2XSH/40 passed away on July 24.

5. INTERFERENCE

There have been no reports of interference, however, we are continuing to monitor three potential interference problems:

- NDB OF continues to operate on 510 kHz.
- We continue to hear NEED on 505 kHz from time to time.
- NDB FA continues to operate on 510 kHz.

To date, we have not identified any communication signals in the band from 461 to 479 kHz.

6. OTHER US EXPERIMENTAL LICENSES

The frequency bands of US and foreign amateur and experimental licenses are shown in Figure 2. The parameters of U.S. experimental licenses are given in Appendix B, and the known unlicensed (part-15) operators are given in Appendix E.

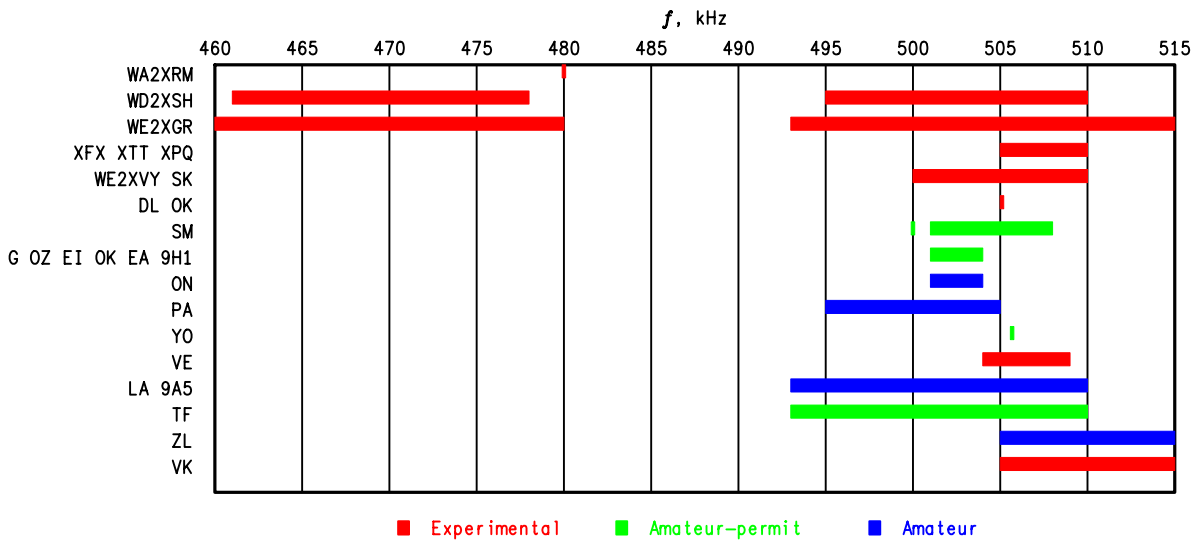


Figure 4. Worldwide amateur activity at 500 kHz.

Juan Granados, K4LCD, has applied for an experimental license for 495 - 505 kHz. He is located in Miami, Florida.

7. INTERNATIONAL AMATEUR ACTIVITIES

As of July, Dutch radio amateurs are permitted to operate from 495 to 505 kHz. This authority lasts through January 1, 2014.

Malta (9H1) is permitting operation on 501 - 504 kHz through December 31, 2011.

8. HERITAGE (MUSEUM) OPERATIONS

Appendix D identifies the known heritage stations in the USA.

The Maritime Radio Historical Society organized another "Night of Nights" on July 6. Several heritage stations operated on HF and MF.

9. REGULATORY AND WRC-12

South Africa

South Africa is supporting method A for WRC-12.

U.S. Federal Radionavigation Plan

The 2010 Federal Radionavigation Plan was released in June. It contains nothing that is really new, but two aspects are worth noting:

High-Accuracy Differential GPS: Section 4.4.2.3 notes that railroads require the capability to resolve position on tracks with a 3.5-m separation. There are also some sub-meter possible requirements for automatic vehicle monitoring. These are justifications for a HA-DGPS system.

The plans for the HA-DGPS are given in Section 5.2.4.2.3. The FRP notes that accuracies of 2 to 15 cm have been demonstrated, with a 1-s time to alarm. The HA-DGPS stations need to be within 150 mi of the user (which implies a lot of stations). The system has been in experimental testing since 2001 and currently three stations are active.

Nondirectional Beacons: Nondirectional Beacons (NDBs) are discussed in Section 5.6. Currently the US has 1300 NDBs, of which 300 are federally operated. Decommissioning of the federal NDBs is underway. NDBs used to define low-traffic routes in Alaska and off-shore will likely be retained. What happens with the nonfederal NDBs is of course up to their operators. The FAA has no further need of these frequencies once the NDBs are decommissioned. This suggests that the band from 510 to 526 kHz will become largely vacant except for NAVTEX. The bands from 190 to 270 kHz and 330 to 435 kHz will also become largely vacant. They would provide a suitable home for HA-DGPS (vs. 435 - 495 kHz now planned), or might make possible another new ham band.

10. PLANS

There are no specific plans for the next quarter. We anticipate that many stations will return to the air and that a number of them will become capable of operating in the "low band".

APPENDIX A. WD2XSH STATISTICS

STATION	CALL	STATUS	02/28/11		05/31/11		LAST LOG
			HOURS	QSOs	HOURS	QSOs	
WD2XSH/1	W1NZR	Inactive	14	3	4	3	04/11
WD2XSH/2	W5TVW	Inactive	13	22	13	22	08/07
WD2XSH/5	KW1I	ON	49	54	49	55	08/11
WD2XSH/6	W5THT	ON	8541	159	8865	159	08/11
WD2XSH/7	W5JGV	ON	10226	1	12342	1	08/11
WD2XSH/8	N4ICK	Inactive	0	0	0	0	-
WD2XSH/9	W2ILA	Inactive	10	26	10	27	05/10
WD2XSH/10	W4DEX	ON	1744	25	1746	25	08/11
WD2XSH/11	WS4S	Inactive	810	12	810	12	11/10
WD2XSH/12	AI8Z	ON	25247	25	26858	25	08/11
WD2XSH/13	KOJO	SK	997	7	997	7	08/08

WD2XSH/14	W1FR	ON	386	8	386	8	08/11
WD2XSH/15	W5OR	OFF	10161	2	10161	2	08/11
WD2XSH/16	WEOH	ON	1186	16	1186	16	08/11
WD2XSH/17	AA1A	ON	11715	23	11802	23	08/11
WD2XSH/18	N1EA	Inactive	3959	0	3959	0	04/08
WD2XSH/19	K9EUI	Inactive	1339	3	1339	3	05/11
WD2XSH/20	N6LF	ON	2296	7	2296	7	03/11
WD2XSH/21	WORW	Dropped	652	0	652	0	02/11
WD2XSH/22	WB2FCN	Inactive	-	-	-	-	-
WD2XSH/23	K2ORS	Inactive	112	1	112	1	08/09
WD2XSH/28	KL7Q	ON	52	6	54	6	08/11
WD2XSH/29	KN8AZN	ON	392	5	403	5	08/11
WD2XSH/31	WA1ZMS	ON	10710	7	12196	7	08/11
WD2XSH/34	WORPK	OFF (Moved)	153	1	153	1	04/11
WD2XSH/35	KOHW	Inactive	11	0	11	1	05/11
WD2XSH/36	W5GHZ	Inactive	1180	0	1180	0	08/10
WD2XSH/37	W1XP	ON	5680	17	5965	17	08/11
WD2XSH/38	KN1H	ON	1551	2	1657	2	08/11
WD2XSH/41	W1HK	ON	15	0	15	10	08/11
WD2XSH/42	K2LRE	ON	10	2	16	0	07/11
WD2XSH/44	AC6QV	ON	33	0	33	0	08/11
WD2XSH/45	KL7UW	ON	173	6	173	6	08/11
TOTAL 08/31/10		22 ON	72,844	434			
TOTAL 11/30/10		22 ON	83,073	441			
TOTAL 02/28/11		22 ON	90,024	441			
TOTAL 05/31/11		19 ON	99,408	450			
TOTAL 08/31/11		19 ON	106,158	451			

Notes:

Operating hours and QSOs are derived from logs through February 28, 2011. The statistics in this appendix were compiled by Ralph Wallio WORPK using the Excel logs submitted by the stations. Decreases in the number of operating hours or QSOs from the previous total indicate correction of errors. Several stations are off the air because of health or equipment problems. "ON" means operation within the past year. Stations who do not submit logs each month are subject to an automatic QRT order and must remain off the air until their log has been brought up to date.

APPENDIX B. US EXPERIMENTAL LICENSES

CALL	NUMBER	QTH	f, kHz	ERP, W	DATES	NOTES
WA2XRM	1	CO	480	100	01/01/09 - 01/01/14	
WD2XSH	43	USA	495 - 510	20	09/13/06 - 08/01/15	

			461 - 478				
WE2XGR	5	New Engl and	493 - 515	1000	09/05/07 - 09/01/12		
			460 - 480				
WE2XFX	1	OK	505 - 510	20	07/27/07 - 07/26/12		
WE2XTT	1	PA	505 - 510	1500*	09/08/08 - 09/01/13		
WE2XPQ	1	AK	505 - 510	50	06/05/08 - 06/01/13		
WE2XVY	1	AZ	500 - 510	200	12/09/08 - 12/01/10	SK	
WF2XAU	1	FL	505 - 510	10	06/23/09 - 01/01/10	Exp.	

* RF output to antenna

APPENDIX C. FOREIGN AMATEUR/EXPERIMENTAL BANDS

COUNTRY	TYPE	BAND, kHz	ERP, W
Sweden	NoV	500, 501 - 508	20 CW, SSB, data
Germany	Exp	505.0 - 505.2	9
Czech Republic	Exp	501-504, 505.60	10
UK	NoV	501 - 504	10
Belgium	Amateur	501 - 504	5
Canada	Exp	504 - 509	20
Norway	Am/Herit	493 - 510	100 (RF) CW only
Romania	NoV	505.68	100 (RF)
Denmark	NoV	501 - 504	20
Ireland	NoV	501 - 504	10 CW, PSK-31
Netherlands	Amateur	495 - 505	5
Iceland	NoV	493 - 510	100 CW
New Zealand	Amateur	505 - 515	20 200 Hz
Croatia	Exp	493 - 510	
Australia	Exp	505 - 515	
Spain	NoV	501 - 504	5 100 Hz
Malta 9H1	Amateur	501 - 504	10

APPENDIX D. HERITAGE STATIONS

CATEGORY	CALLSIGN	FREQUENCIES	OPERATOR / QTH
Coastal	KSM	500, 426	MRHS, Bolinas, CA
	KFS		
	KPH	500, 426	MRHS, Bolinas, CA
	KLB	500, 488	Seattle, WA
	WLO	500, 438	Mobile, AL
New	WNE	500, 472	NEHRS, Stoneham, MA
	KDR	500, 482	Bellevue, WA

	WFT	500, 486	KZ4RV, Palmeto, FL
USCG	NMC	500, 448, 472	Bolinas, CA
	NMN	500, 448, 468	Chesapeake, VA
	NOJ	500, 416, 470	Kodiak, AK
Ships	KKUI		SS American Victory
	KYVM		SS Red Oak Victory
	KECW		SS Lane Victory
	KXCH		SS Jeremiah O'Brien
	KHRC		SS Matsonia
	NWVC	500, 512	LST325, Evansville, IN
	NTTH	500, 512	USS Cassin Young, Charleston, MA
	NEPL		USS Massachusetts, Fall River, MA
Foreign	NWKJ		USS Yorktown, Charleston, SC
	LGQ	493 - 510	Rogaland, Norway
	LM500LGN	493 - 510	Bergen, Norway

APPENDIX E. US PART-15 OPERATORS

f , kHz	ID	QTH	OPERATOR
510.1	HI	Monroe, CT	
510.903	EH	East Haven, CT	K1RGO

APPENDIX F. CANADIAN 500-kHz STATIONS

CALL	OP	QTH	STATUS
VX9BDQ	VE7BDQ	Delta, BC (near Vancouver)	Active
VX9MRC	V01NA	Toronto, ONT	Active
VX9ZZZ	VE1ZZ	Nova Scotia	Active
VX90HH	VE30HH	Richmond Hill, Ontario	Inactive

APPENDIX G. COMMUNICATION RECORDS

The reception and QSO distances (in miles) below have been compiled by Ralph Walio WØRPK.

STATION	CW	QRSS	DIGIT	WSPR	WOLF	SSB	QSO
WD2XSH/1	56	--	--	--	--	--	56
WD2XSH/2	778	--	--	--	--	--	775

WD2XSH/5	1,508	1,508	--	--	--	--	1,315
WD2XSH/6	3,434	6,679	--	--	--	--	2,079
WD2XSH/7	3,212	8,903	1,951	4,866	--	--	266
WD2XSH/9	1,155	--	--	--	--	--	649
WD2XSH/10	3,767	4,369	701	5,305	--	--	747
WD2XSH/11	1,039	4,515	--	--	--	--	884
WD2XSH/12	1,811	1,811	1,306	2,357	--	--	1,696
WD2XSH/14	1,467	1,467	--	--	--	--	747
WD2XSH/15	930	1,432	--	1,420	--	--	377
WD2XSH/16	1,535	854	1,074	718	--	--	1,089
WD2XSH/17	3,668	4,032	--	4,611	--	--	1,308
WD2XSH/18	3	--	--	--	--	--	--
WD2XSH/19	1,814	465	392	--	--	--	782
WD2XSH/20	4,737	--	--	--	--	--	2,301
WD2XSH/23	1,185	--	--	--	--	--	690
WD2XSH/28	91	--	--	--	--	--	91
WD2XSH/29	687	1,048	669	1,090	--	--	669
WD2XSH/31	2,057	3,348	--	--	--	--	751
WD2XSH/34	1,060	--	669	273	--	--	669
WD2XSH/35	1,321	--	--	--	--	--	1,209
WD2XSH/36	--	--	--	--	--	--	--
WD2XSH/37	1,098	--	--	3,489	--	--	467
WD2XSH/38	1,468	1,468	--	524	--	--	238
WD2XSH/41	14	--	--	--	--	--	14
WD2XSH/42	731	--	--	--	--	--	357
WD2XSH/44	2	--	--	--	--	--	--
WD2XSH/45	96	--	--	2,893	--	--	91
WE2XGR/1	2,293	473	473	--	--	1,286	975
WE2XGR/2	3,771	4,137	1,407	4,735	3,747	1,209	3,379
WE2XGR/3	686	3,700	1,476	4,650	670	671	670
WE2XGR/5	174	527	--	--	--	--	174
WE2XGR/6	4,253	1,205	--	4,870	--	994	3,713
WE2XGR/8	31	--	--	--	--	--	31
WA2XRM	623	2,441	--	--	--	--	--
WE2XPQ	96	1,335	--	--	--	--	--
VX9BDQ	2,695	2,461	--	2,086	--	--	--
VX9MRC	2,325	--	--	--	--	--	1,986
VX9ZZZ	2,505	--	--	--	--	--	2,505