

WD2XSH status report: September 1 - November 30, 2012**Prepared by Fritz Raab, W1FR, Experiment Coordinator****December 26, 2012****1. SUMMARY OF OPERATIONS**

This report provides a summary of WD2XSH activity during the Fall 2012. The key statistics of our operations during this period are:

- Number of QSOs: 11 additional, total 503;
- Number of reports via web site: 312 additional, total 15,529;
- Operating hours: 4,073 additional, total 138,954; and
- Number of interference complaints: 0.

All statistics are based upon the end of the reporting period (11/30/12). Only transmitting hours are included.

2. ADMINISTRATIVE

Nothing to report.

3. COMMUNICATIONS

Activity increased during the fall, as expected. Several other experimental stations including WF2XIQ, WF2XXQ, WG2XJM, and WG2XKA have joined us on the air and been especially active.

In October, WD2XSH/42 operated "portable" and ran a CW beacon on 509.1 kHz from the museum ship, L/S AMBROSE. Ambrose is docked in New York's East River. The ITT transmitter produced only 20 W and the antenna is somewhat small. No reception reports were filed.

On December 24, Brian Justin WA1ZMS used his WG2XFQ experimental license to make a special transmission commemorating the anniversary of Fessenden's first voice broadcast on December 24, 1906. He transmitted AM on 486 kHz and ran a loop that included a female voice, the violin piece used by Fessenden, a Bible verse, and a male voice.

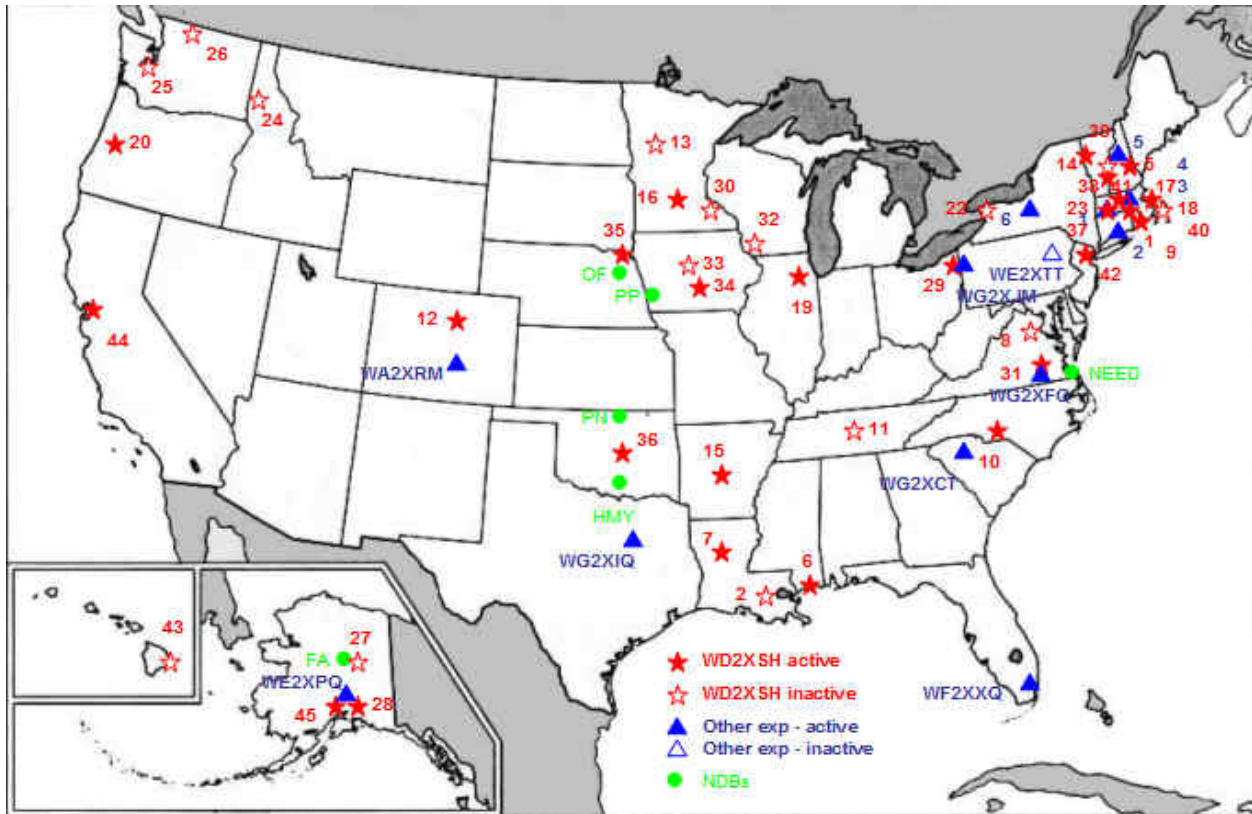


Figure 1. Locations and status of US 500-kHz experimental stations.

4. ACTIVITIES

Nothing to report.

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.

On the evening of Saturday, December 22, Eric NO3M/WG2XJM in Pennsylvania made two QSOs with a station identifying itself as WD2XSH/P. The operator identified himself as "Jay". He closed the first QSO with a Christmas greetings from the Heart of Dixie. In the second QSO, he gave his QTH as Birmingham, AL, at grid coordinate EM63. He gave XJM a report of 599+30. He said he was using a 160-meter inverted L with 100 W from the transmitter. He was operating on 473.7 and 474.7 kHz. WG2XJM's antennas suggested he is located to the south.

There was no QSB and the pirate was about 20 dB above the noise level. XJM was able to hear key clicks and suspected that the pirate was closer.

W1VD / WE2XGR/2 in Connecticut heard both XJM and the pirate. He reported that the pirate was to the southwest and only a few dB lower than XJM, which also suggests a closer location.

6. OTHER US EXPERIMENTAL LICENSES

The frequency bands of US and foreign amateur and experimental licenses are shown in Figure 2. Some of the foreign allocations have been terminated as national regulators approve amateur operation in the 630-meter band. The parameters of U.S. experimental licenses are given in Appendix B, and the known unlicensed (part-15) operators are given in Appendix E.

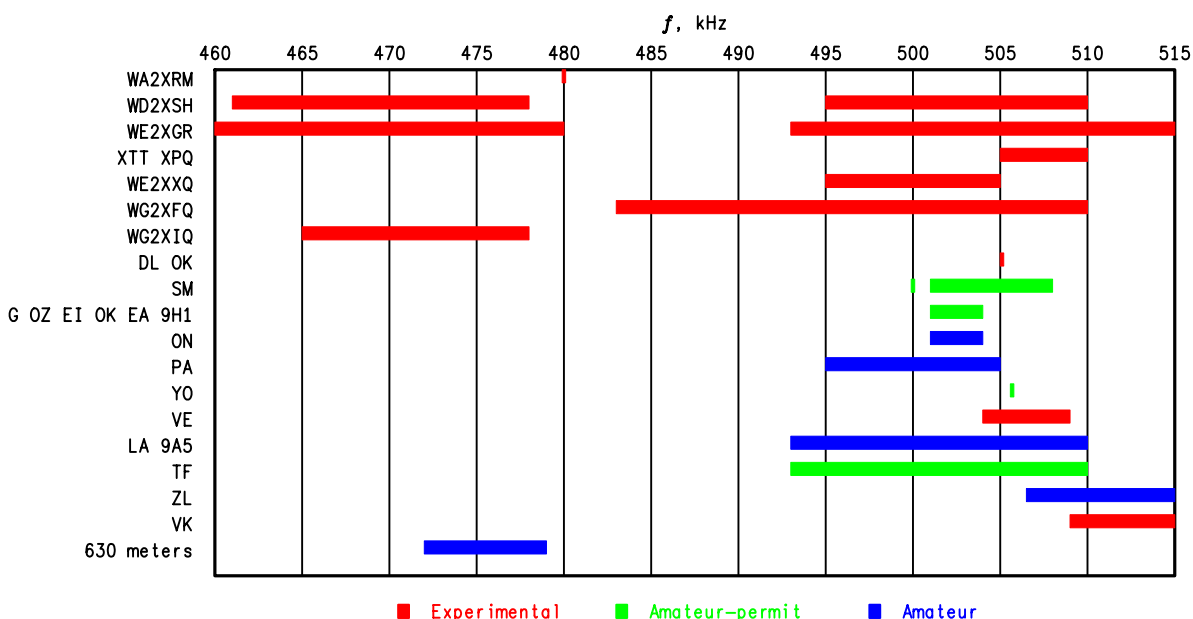


Figure 4. Worldwide amateur activity near 500 kHz.

Juan Granados K4LCD reports that his experimental station WF2XXQ went on the air in September. He operates from Miami, FL (EL95) with a 43-foot vertical with three top hat wires, each 43 feet long. He estimates an ERP of 0.325 W.

John Langridge KB5NJD reports that his experimental license WG2XIQ was approved in September. He is authorized to operate between 465 and 478 KHz.

Eric Tichansky NO3M received approval of experimental license WG2XJM on October 24. He is located in Saegertown, PA, and formerly operated as WD2XSH/46 through coordination with nearby WD2XSH/29. His license is valid through November 2014 and allows operation in both 460 - 480 kHz and 495 - 515 kHz with 100 W ERP.

John Molnar WA3ETD received approval of experimental license WG2XKA on October 24. He is located in Benson, Vermont (near Rutland). His license is valid through November 2014 and allows operation from 460 to 490 kHz with 1 W ERP.

7. INTERNATIONAL AMATEUR ACTIVITIES

A number of regulators have approved amateur use of the 630-meter band.

Permission to use 472 - 479 kHz has been approved for Germany, Greece, Malta, Monaco, Norway, the Phillipines, and the Czech Republic. DL, OM, and SV stations are already permitted to use the band. Norwegian hams are no longer allowed to use 493 to 510 kHz.

On Dec. 20, New Zealand amateurs were able to operate on 472 to 478 kHz with an EIRP of 25 W. Their access to 505 - 510 kHz ends at this time. Australian hams also gain access to 472 to 479 kHz effective January 1, with 5 W EIRP.

Swiss Regulator BAKOM says that from January 1, 2013 radio amateurs will be allowed to operate on 472 to 479 kHz with 5 Watts EIRP.

8. HERITAGE (MUSEUM) OPERATIONS

Appendix D identifies the known heritage stations in the USA. WNE has been on the air on 472 kHz. The MRHS is encouraging others to apply for maritime licenses.

9. REGULATORY

On November 29, the ARRL filed a petition for rulemaking to allow US amateurs to use the 472 - 479 kHz. Footnote (23) refers to our experiment and states:

ARRL has sponsored an extensive course of experimentation in the MR spectrum near 500 kHz since 2006. In September of 2006, a group of 23 amateur stations scattered throughout the United States were permitted to operate in the band 505-510 kHz for a course of experimentation and interference testing. See, Experimental License WD2XSH, File No. 0105-EX-PL-2005. During the course of this experiment, the number of participating Amateur stations increased to 42 and include all geographic of the United States including Alaska and Hawaii. The frequency bands utilized were modified to include the entirety of 461-478 kHz and 495-510 kHz. Emissions, at power levels up to 20 Watts ERP, include 150HA1A, 62H0J2B, 62H0F1B, and 62HOG1D. This experiment is scheduled to continue through the current license term, which is August 1, 2015. No reports of interference have been received. This is a disciplined program of experimentation with regular reports and analyses of interference potential to other services (including PLC systems) and experimentation with equipment and antennas.

10. MISCELLANEOUS

Tony Parks KB9YIG of Softrock fame is working on a new transceiver kit that will be configurable for 137/475 use. The kit is in the test phase right now. The Softrock radios have LOs with phase noise and stability good enough for most digital modes.

11. PLANS

We expect that activity will increase during the winter months.

APPENDIX A. WD2XSH STATISTICS

STATION	CALL	STATUS	08/31/12		11/30/12		LAST LOG
			HOURS	QSOs	HOURS	QSOs	
WD2XSH/1	W1NZR	Inactive	4	3	4	3	04/12
WD2XSH/2	W5TVW	Inactive	13	22	13	22	08/07
WD2XSH/5	KW1I	ON	64	57	73	57	11/12
WD2XSH/6	W5THT	ON	10234	180	10650	180	11/12
WD2XSH/7	W5JGV	ON	19830	1	20737	1	11/12
WD2XSH/8	N4ICK	Inactive	0	0	0	0	-
WD2XSH/9	W2ILA	Inactive	10	27	10	24	05/10
WD2XSH/10	W4DEX	ON	2029	30	2303	30	11/12
WD2XSH/11	WS4S	Inactive	810	12	810	12	11/10
WD2XSH/12	AI8Z	ON	31733	25	31759	26	11/12
WD2XSH/13	K0JO	SK	997	7	997	7	08/08
WD2XSH/14	W1FR	ON	517	10	541	10	11/12
WD2XSH/15	W5OR	OFF	14140	2	14140	2	08/12
WD2XSH/16	WE0H	Inactive	1186	16	1186	16	08/12
WD2XSH/17	AA1A	Inactive	11802	23	11802	31	03/12
WD2XSH/18	N1EA	Inactive	3959	0	3959	0	04/08
WD2XSH/19	K9EUI	Inactive	1351	3	1361	3	11/12
WD2XSH/20	N6LF	Moving	2402	7	2402	7	03/12
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	63	6	63	6	10/12
WD2XSH/29	KN8AZN	ON	493	5	499	5	10/12
WD2XSH/31	WA1ZMS	ON	20795	8	22822	8	11/12
WD2XSH/34	WORPK	OFF (Moved)	153	1	153	1	04/11
WD2XSH/35	K0HW	Inactive	11	0	11	1	11/12
WD2XSH/36	W5GHZ	Inactive	1180	0	1180	0	08/10
WD2XSH/37	W1XP	ON	6493	7	6521	16	11/12

WD2XSH/38	KN1H	ON	2064	2	2157	2	11/12
WD2XSH/41	W1HK	ON	18	13	18	13	04/12
WD2XSH/42	K2LRE	ON	100	0	105	0	11/12
WD2XSH/44	AC6QV	QRT (Moved)	72	0	72	0	08/12
WD2XSH/45	KL7UW	ON	175	6	175	6	11/12
WD2XSH/46	NO3M	Now WG2XJM	1344	0	1612	5	10/12
TOTAL 11/30/11			16 ON	114,172	451		
TOTAL 02/29/12			13 ON	121,743	490		
TOTAL 05/31/12			18 ON	129,081	492		
TOTAL 08/31/12			18 ON	134,811	492		
TOTAL 11/30/12			10 ON	138,954	503		

Notes:

Operating hours and QSOs are derived from logs through November 30, 2012. 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	8	New England	493 - 515	1000	09/05/07 - 04/15/15	
			460 - 480			
WE2XFX	1	OK	505 - 510	20	07/27/07 - 07/26/12	Exp.
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.
WF2XXQ	1	FL	495 - 505	500	10/14/11 - 10/01/16	
WG2XCT	1	SC	495 - 510	5	03/14/12 - 03/01/14	
WG2XFQ	1	VA	483 - 510	20	06/08/12 - 06/01/14	
WG2XIQ	1	TX	465 - 478	1	09/12/12 - 09/01/14	
WG2XJM	1	PA	460 - 480	100	10/24/12 - 11/01/14	
			495 - 515	100		
WG2XKA	1	VT	460 - 490	1	10/24/12 - 11/01/14	

* RF output to antenna

APPENDIX C. FOREIGN AMATEUR/EXPERIMENTAL BANDS

The following table gives the amateur/experimental authorizations that were in force at some time prior to approval for amateur operation in the 630-meter band. Some of these allocations have been or will be phased-out concurrent with approval of amateur operation.

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
Italy	NoV	501	One station

The following countries have approved amateur operation in the international 630-meter band (472 - 479 kHz):

Germany, Greece, Malta, Monaco, Norway, the Phillipines, Czech Republic, New Zealand, Australia, Switzerland.

This list has been changing nearly daily and is no doubt incomplete.

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
	NWKJ		USS Yorktown, Charleston, SC
Foreign	LGQ	493 - 510	Rogaland, Norway
	LM500LGN	493 - 510	Bergen, Norway

APPENDIX E. US PART-15 OPERATORS

<i>f</i> , kHz	ID	QTH	OPERATOR
510.1	HI	Monroe, CT	
510.903	EH	East Haven, CT	K1RG0
515.15	U	Magdalena, NM	Mike Mideke

APPENDIX F. CANADIAN 500-kHz STATIONS

CALL	OP	QTH	STATUS
VX9BDQ	VE7BDQ	Delta, BC (near Vancouver)	Active
VX9MRC	VO1NA	Toronto, ON	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	AUTO*	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	1,448	--	--	--	--	--
WD2XSH/45	96	--	--	2,893	--	91
WD2XSH/46	1,396	--	26	3,697	--	1,116
WE2XGR/1	2,293	473	473	--	1,286	975
WE2XGR/2	3,771	4,137	1,407	4,735	1,209	3,379
WE2XGR/3	1,094	3,700	1,476	4,650	671	670
3LOG.htm						
WE2XGR/5	174	527	--	--	--	174
WE2XGR/6	4,253	1,205	--	4,870	3,139	3,713
WE2XGR/8	238	--	--	--	--	238
WA2XRM	623	2,441	--	--	--	--
WE2XPQ	96	1,335	--	--	--	--
WF2XXQ	--	--	--	1,404	--	--
WF9XIH	--	--	--	--	922/	--
WG2XCT	--	790	--	--	--	--
WG2XFQ	--	--	--	--	16/	--
WG2XIQ	1,116	--	--	1,991	--	1,116
WG2XJM	1,116	--	--	3,638	465	1,116
WG2XKA	373	--	--	2,228	--	--
VX9BDQ	2,695	2,461	--	2,112	--	--

VX9MRC	2,532	3,106	--	1,071	--	2,532
VX9ZZZ	2,505	--	--	--	--	2,505

*NOTE: AUTO includes PC-based beacon modes WSPR/WOLF/OPERA/ROS/JT65, etc., which are not being used for QSOs.