

WD2XSH status report: September 1 - November 30, 2009**Prepared by Fritz Raab, W1FR, Experiment Coordinator****December 26, 2009****1. SUMMARY OF OPERATIONS**

This report provides a summary of WD2XSH activity during the spring of 2009. The key statistics of our operations to date are:

- Number of QSOs: 32 additional, total 368;
- Number of reports via web site: 672 additional, total 9579;
- Operating hours: 3,740 additional, total 41,269; and
- Number of interference complaints: 0.

All statistics are based upon the end of the reporting period (11/30/09).

An analysis by Ralph Wallio W0RPK of the reception reports filed on our web site shows that about 70 percent of the reports have been made by only eleven stations:

KN8AZN (WD2XSH/29)	1, 778
VE3MGY	1, 274
AA5AM	660
WB8I LI	416
W5THT (WD2XSH/6)	308
AA1A (WD2XSH/17)	288
K1CT/6	276
W0TDH	191
EdW SI i del I LA	175
W5GHZ	119
N4QR	104

TOTAL	5, 589

2. ADMINISTRATIVE

There are no administrative issues to report.

3. COMMUNICATIONS

The decreased QRN and generally improved conditions have resulted in an increase in activity.

The following new stations have gotten on the air during this quarter:

WD2XSH/31 WA1ZMS
WD2XSH/36 W5GHZ
WD2XSH/42 K2LRE
WD2XSH/7 W5JGV
WD2XSH/44 AC6QV
WD2XSH/38 KN1H (Dec.)
WD2XSH/35 K0HW (Dec.)

Brian Justin WA1ZMS, who is best known for making amateur microwave records, is also a bit of an antique radio buff. He got on the air initially using a home-brew 1920 MOPA CW transmitter and a Grebe CR-8 time-era receiver (Figure 1). He plans to put a solid-state transverter and PSK-31 on the air later.



Figure 1. WA1ZMS with antique equipment.

WD2XSH/42 (K2LRE) is also using vintage equipment. His Collins ART-13 is shown in Figure 2.



Figure 2. K2LRE working on his ART-13.

In November, WD2XSH/6, WD2XSH/20, and WE2XGR/6 were received in Alaska.

All data from the 2008 ground-wave tests have now been processed. Some graphs have been prepared. Work on the research note is in progress.

An Argo capture from the evening of Christmas day appears in Figure 3. The signals from top to bottom are WD2XSH/7, WD2XSH/6, WE2XGR/2, WE2XGR/3, and WE2XGR/1. Several other stations were also operating at lower frequencies.



Figure 3. Screen capture from Christmas day.

4. INTERFERENCE

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

NDB OF

NDB OF continues to operate on 510 kHz.

NEED

We continue to hear NEED on 505 kHz from time to time.

5. OTHER US EXPERIMENTAL LICENSES

The frequency bands of US and foreign amateur and experimental licenses are shown in Figure 4. The parameters of U.S. experimental licenses are given in Appendix B.

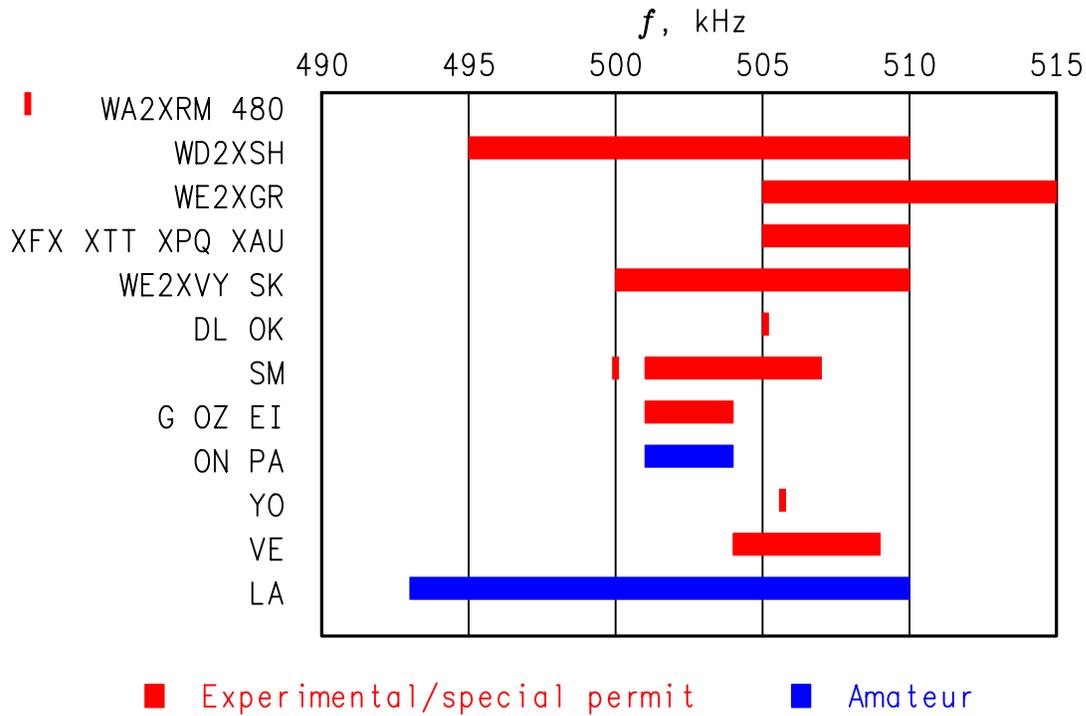


Figure 4. Worldwide amateur activity at 500 kHz.

6. INTERNATIONAL AMATEUR ACTIVITIES

In October, two Canadian amateur-experimental ("Special Developmental") stations were reported active on 500 kHz (<http://www.rac.ca/en/news/bulletins/2008/29>). They are

VE1ZZ	VX9ZZZ	John Leahy	Halifax, Nova Scotia
VO1MRC	VX9MRC	Joe Craig VO1NA	Torbay, Newfoundland (Marconi Radio Club)

VX9MRC is the station of the The Marconi Radio Club of Newfoundland, VO1MRC.

As part of their Developmental Radio Service, the Canadians are not officially permitted to contact amateurs or foreign experimental stations. Industry Canada has said that short exchanges (for example, to identify an unknown station) will not be regarded as a violation of the rules. There has been a bit of a flap within the Canadian amateur community, both because of having developmental (vs. amateur) licenses and because VO1NA/VX9MRC initially was actively trying to work DX.

On November 5, Norwegian amateurs were authorized to use 493 to 510 kHz. This is a general amateur authorization, not special permits or experimental licenses. They are limited to CW only with 100 W, and are on a secondary basis to other services.

Another Swedish station, SM6BGP (Gunnar Ivarsson), has been granted approval to operate from 501 to 507 kHz. He is located near Orby and authorized for CW, digital, and SSB modes with 10 W ERP.

Amateurs in the Netherlands with full licenses will be permitted to operate from 501 to 504 kHz beginning January 1, 2010. The ERP and bandwidth are limited to 5 W and 100 Hz, respectively.

Ofcom (UK) has extended the period for operation under the Notice of Variation (NoV) to February 29, 2012. Operating parameters remain unchanged (e.g., 10 W ERP). There have been no reports of interference.

7. HERITAGE (MUSEUM) OPERATIONS

Steve Russell WA1HUD is still still working on the station for WNE and trying to find an antenna.

The former radio officers (e.g., Seefunker) remain concerned about use of 500 kHz for NAVTEX and other eNav applications.

8. REGULATORY AND WRC-12

KL1X reports that Russian NDBs SL and PI have been heard intermittently on 505 kHz in China. They are located at 46.833333 N, 142.713333 E, and 46.936667 N, 142.716667 E, respectively.

The Greek Amateur Radio Association will be supporting a 500-kHz amateur band at WRC-12.

The IMO COMSAR group has issued the following statement regarding WRC-12 resolution 1.23. While this is not absolutely opposed to an amateur allocation, it is certainly not supportive.

The Group noted that the band 415 to 526.5 kHz was allocated on a primary basis to the maritime mobile service and that Administrations, authorizing the use of frequencies in the band 495 to 505 by services other than the maritime mobile service, should ensure that no harmful interference was caused to the maritime mobile service. It was further noted that, in the draft IMO position under Agenda item 1.10, the future use of the band 415 kHz - 526.5 kHz for safety- and security-related systems was supported, recognizing that this band was allocated on a worldwide basis for the use by the maritime community. It was considered that, due to the technology today, these systems would not be operated manually and that automatic transmissions could be carried out at any time, as required. Interference by transmissions from services with secondary status would prevent reception of information from the primary user. It was further considered that a secondary allocation for the amateur service would increase the probability of harmful interference.

9. PORTABLE STATION

The ARRL 600m Experiment includes the goal of developing a portable 600m ground-wave digital station for regional ARES message handling. Toward this end Fred Temple, KN8AZN (WD2XSH/29), designed 600m modifications to a Small Wonder Labs PSK20/30/40 digital transceiver and to a Communications Concepts EB63 linear amplifier including a low-pass filter. Ralph Wallio, W0RPK (WD2XSH/34), duplicated these developments with Fred's considerable support and completed the station with a portable top-loaded 600m antenna. All of this can be seen via <http://showcase.netins.net/web/wallio/WD2XSH-34.htm>.

This portable station configuration is currently being used to test digital modes allowed by the WD2XSH license via ground-wave propagation to receiving stations at varying distances out to 300 mi (480 km). Received data is analyzed for character error rates to understand and establish reasonable expectations for error free message handling throughput. Recent baseline tests during relatively quiet early winter daytime conditions have been encouraging.

Test participation by Chris Sparks, KC0TKS, 190 mi, Bob Roehrig, K9EUI (WD2XSH/19) 278 mi, Garry Hess, K3SIW, 274 mi, and Mike Reid, WE0H (WD2XSH/16), 273 mi, has found BPSK10 capable of yielding repeated 100% error free test sessions at 190 mi and repeated 99+ percent error free test sessions at 270 mi. Similar testing of BPSK31 has yielded repeated 99+% error free test sessions at 190mi and 98+ percent at 270 mi. Participation by additional stations within 300mi of Des Moines, Iowa is needed for continuing digital error-rate testing.

10. EQUIPMENT

The N3ZI synthesizer appears to be working as promised.

11. PLANS

There are no specific plans for experimentation this winter. A number of the new stations will be trying to get on the air. The author hopes to finish the report on last summer's ground-wave tests.

APPENDIX A. STATISTICS

STATION	CALL	STATUS	08/31/09		11/30/09		LAST LOG
			HOURS	QS0s	HOURS	QS0s	
WD2XSH/1	W1NZR	Inactive	13:36	7	13:36	7	08/09
WD2XSH/2	W5TVW	Inactive	12:31	22	12:31	22	07/07
WD2XSH/5	KW1I	Inactive	24:07	48	24:07	48	02/09
WD2XSH/6	W5THT	ON	5307:27	115	5831:00	134	11/09
WD2XSH/7	W5JGV	ON	-	-	49:50	0	11/09
WD2XSH/8	N4ICK	Inactive	0	0	0	0	-
WD2XSH/9	W2ILA	Inactive	9:37	26	9:37	26	02/09
WD2XSH/10	W4DEX	ON	1246:46	24	1280:15	24	11/09
WD2XSH/11	WS4S	Inactive	809:42	12	809:42	12	08/08
WD2XSH/12	AI8Z	ON	14734:13	23	15865:52	23	11/09
WD2XSH/13	KOJO	SK	997:00	7	997:00	7	08/08
WD2XSH/14	W1FR	ON	233:45	6	253:43	7	11/09
WD2XSH/15	W5OR	ON	4131:33	2	4131:33	2	11/09
WD2XSH/16	WE0H	ON	895:15	11	963:46	11	11/09
WD2XSH/17	AA1A	ON	884:43	23	908:01	23	11/09
WD2XSH/18	N1EA	Inactive	3935:00	0	3935:00	0	04/08
WD2XSH/19	K9EUI	ON	1324:46	3	1343:05	3	11/09
WD2XSH/20	N6LF	ON	1963:12	7	2070:21	7	11/09
WD2XSH/21	WORW	Dropped	652:42	0	652:42	0	11/06
WD2XSH/22	WB2FCN	Inactive	-	-	-	-	-
WD2XSH/23	K2ORS	Inactive	110:11	0	112:11	0	08/09
WD2XSH/29	KN8AZN	ON	226:11	0	1664:21	5	11/09
WD2XSH/31	WA1ZMS	ON	-	-	53:23	1	11/09
WD2XSH/34	WORPK	ON	2:45	0	62:16	1	11/09
WD2XSH/35	K0HW	ON	-	-	1:01	0	11/09
WD2XSH/36	W5GHZ	ON	-	-	47:21	0	11/09
WD2XSH/37	W1XP	ON	12:19	0	158:07	5	11/09
WD2XSH/41	K2LRE	ON	-	-	?	?	-
WD2XSH/44	AC6QV	ON	-	-	18:44	0	11/09
TOTAL	08/31/09	14 ON	37,529	336			
TOTAL	11/30/09	18 ON	41,269	368			

Note:

Operating hours and QS0s are derived from logs through November 30, 2009. The statistics in this appendix were compiled by Rudy Severns N6LF using the Excel logs submitted by the stations. Several stations are subject to a QRT order for not being current in submitting their logs. These stations are required to remain QRT until they

have rectified the situation. Generally, these stations have an equipment problem or some other problem that keeps them from operating.

Two stations moved from the location specified on our original license. They are now authorized to operate at their new QTHs.

Some changes (such as a decrease in the number of QSOs) are the result of corrections to the logs.

APPENDIX B. US EXPERIMENTAL LICENSES

CALL	NUMBER	QTH	f, kHz	ERP, W	DATES
WA2XRM	1	CO	480	100	01/01/09 - 01/01/14
WD2XSH	43	CONUS	495 - 510	20	09/13/06 - 08/01/10
WE2XGR	5	New Engl and	505 - 515	200	09/05/07 - 09/01/12
WE2XFX	1	OK	505 - 510	20	07/27/07 - 10/21/08
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(SK)	1	AZ	500 - 510	200	12/09/08 - 12/01/10
WF2XAU	1	FL	505 - 510	10	06/23/09 - 01/01/10

* RF output to antenna

APPENDIX C. FOREIGN AMATEUR/EXPERIMENTAL BANDS

COUNTRY	TYPE	BAND, kHz	ERP, W
Sweden	NoV	500, 501 - 507	20
Germany	Exp	505.0 - 505.2	9
Czech Republic	Exp	505.60	1
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	Exp	501 - 504	20
Ireland	Exp	501 - 504	10 CW, PSK-31
Netherlands	Amateur	501 - 504	5

APPENDIX D. HERITAGE STATIONS

CATEGORY	CALLSIGN	FREQUENCIES	OPERATOR / QTH
Coastal	KSM	500, 426	MRHS, Bolinas, CA
	KFS		
	KPH	599, 426	MRHS, Bolinas, CA
	KLB	500, 488	Seattle, WA
	WLO	500, 438	Mobile, AL
New	WNE	500, 472	NEHS, Stoneham, MA
	KDR	500, 482	Bellevue, WA
	WFT	500, 486	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		LST325
	NTTH	500, 512	USS Cassin Young, Charleston, MA
Foreign	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	K1RG0