

DXpedition Report

OBX-DX II

March 3-5, 2005

Bodie Island, North Carolina

John H. Bryant and Harold N. Cones

Antennas: Beverages, Northeast @ 500', East @ 500', Southeast @ 1000'

Receivers: NRD-525, NRD-535, pair of Ten Tec 320s

For the second spring in a row, we were able to gain access to seasonally restricted areas of the Outer Banks (OBX) of North Carolina to study propagation at long, medium and lower short wave frequencies. As last year, our listening sessions were planned for Thursday, Friday and Saturday nights. This year, the weather was much less cooperative with our efforts, but the propagation was much improved, especially during the first night, March 3-4. The pattern of medium wave DX reception was quite similar to that of last year, with signals from Europe peaking during the first two hours after local sunset on the beach and then, with a few notable exceptions, declining.

As last year, the listening post was a large 16-passenger van with the all but the front two seats removed and folding tables and chairs deployed. Electrical power was supplied by deep-cycle 12 volt batteries. This year, a small 6-volt motorcycle battery was placed in series with the main deep-cycle battery to supply 18 VDC for powering modern laptop computers. For maps of the area, photographs of the participants, etc., please refer to our report of the 2004 OBX DXpedition on [dxing.info](http://dxing.info/dxpeditions/bodie2004report.dx) at <http://dxing.info/dxpeditions/bodie2004report.dx>

The three nights varied tremendously, propagationally. Intuitively, the first night seemed about “average” on medium wave, in the sense that we heard nothing that has not been heard on a fairly regular basis from areas of coastal New England, though we did hear more than the previous year on the OBX. Both short and long wave propagation seemed to be far above average. The second night was a pale repeat of the first night on medium wave, with both short and long wave remaining very good to excellent. Early on the third evening, we experienced forty knot winds and record cold. Those conditions combined with dismal propagation and nearby thunderstorms to drive us from the beach after only two hours of fruitless listening. Hot showers and warm motel beds were much more attractive than yet another night wrapped in winter sleeping bags in the back of a truck.

Thursday Evening, March 3-4

Trans-Atlantic signals began to fade simultaneously with local sunset at 2300 UTC. Within the first hour, signals had peaked and seemed to maintain that level until about 0100. By 0300, most Trans-Atlantic signals had faded away. Local sunrise at the West African MW transmitters was checked around 0500 with no results. This may have been due to poor propagation to our due east toward West Africa. Conditions seemed to favor signals coming from our Northeast: central and northern Europe, with NRK, Kitsvov, Norway-1314 kHz providing true arm-chair listening, at times. Multiple stations were heard from Great Britain and the always-listenable Switzerland-765 was also a treat. Stations in Spain and Portugal were noticeable by their absence.

Long wave propagation was outstanding, with very listenable signals on virtually every channel from 153 kHz to 234 kHz. The most interesting station received was the probable Icelandic Radio, Rikisutparvid Ras 1+2 on 189 kHz. Shortwave propagation was also outstanding, with reception from the Indian Sub-Continent being particularly favored. Probably the most prized station heard was 4760 kHz, AIR Leh which, due to the co-channel AIR Port Blair outlet, is virtually impossible to hear from North America, except briefly each year on the East and West Coasts. Other interesting stations noted included 2310-ABC Alice Springs, Australia and 4053-Radio Verdad, Guatemala.

Friday Evening , March 4-5

From a medium wave point of view, Friday evening was primarily a pale repeat of the previous evening. Propagation still tended to be from the Northeast, but with poorer levels and fewer stations present. A few stations from Spain and Portugal were noted at near threshold levels. Probably the most interesting reception was the Egyptian station from El Arish, Northern Sinai, noted *very* tentatively on 1503 kHz.

The long wave dial was again full of broadcast signals, most at very listenable levels. The more interesting signals included TRT Turkey on 225 kHz. and RTE-1 Ireland on 252 kHz.

Shortwave conditions were excellent for a second evening in a row, with many of the All India Radio outlets being logged at sign-on or soon after along with a threshold-level reception of ABC Katherine, Australia on 2485 kHz..

LOGGINGS

Long Wave

153 ALGERIA Alger Chaîne 1, Bechar, Mar 4 0220 - Heard here at generally good level throughout the DXpedition. AA music and talk. (Bryant-OBX DX) Mar 4 0350 (Cones-OBX DX)

153 GERMANY Deutschlandfunk, Mar 4 0325 - Mixed music (Latin, flute and pop). (Cones-OBX DX)

162 FRANCE France Inter, Allouis, Mar 4 0225 - Heard here throughout the DXpedition with excellent signal and FF programming. (Bryant-OBX DX) (Cones-OBX DX)

171 MOROCCO Radio Med. Int'l, Nador , Mar 4 0230 - Noted in passing with excellent signal throughout the DXpedition with usual AA programming. (Bryant-OBX DX)

177 GERMANY Deutschlandradio Berlin, Oranienburg, Mar 4 0233 - Heard here throughout the DXpedition. Usually with excellent signal and often with classical music. (Bryant-OBX DX) Mar 5 0405 (Cones-OBX DX)

183 GERMANY Europe 1, Mar 5 0308 - Commentary between two males. (Cones-OBX DX) (Bryant-OBX DX)

189 ICELAND Ríkisutvarpid Ras 1+2, Gufuskalar, Mar 4 0235 - Presume this in unknown but seemingly Scandanavian language. Pop music show at fair level. (Bryant-OBX DX) Mar 4 0350 - Pop songs in English. (Cones-OBX DX)

198 UNITED KINGDOM BBC Radio 4 Synchronos, Mar 4 0245 - Noted here throughout the DXpedition at good to excellent level. (Bryant-OBX DX)

207 SAUDIA ARABIA L-Mamnlaka al Maghribiyya, Mar 4 2335 - Arabic music. (Cones-OBX DX)

225 TURKEY TRT-GAP, Van, Mar 5 0238 - Presume this in clearly Middle-East traditional music program at time when published schedule says is off air. (Bryant-OBX DX)

234 LUXEMBOURG RTL Junglinster, Mar 5 0125 - Europop programming at good level, noted for about 30 minutes at listenable level. (Bryant-OBX DX)

252 IRELAND RTE 1, Clarkestown, Mar 5 0120 - Noted here at good level with classical piano programming. Hosted by a quiet male announcer in EE. (Bryant-OBX DX)

Medium Wave

530 TURKS & CAICOS Radio Christiana, Mar 3 2300 - Noted throughout the DXpedition at above S-9 levels. (Bryant-OBX DX)

535 GRENADA G.B.N. Radio Klassic, St. Georges, Mar 5 0143 - Fair only. Peaked briefly at 0200 with BBC News. Signal dropped like a rock at 0208; sign off??. (Bryant-OBX DX)

555 ST. KITTS & NEVIS ZIZ, St. Kitts, Mar 3 2310 - Heard periodically throughout the DXpedition, with moderate to good levels, mostly. Usual island programming with BBC news noted in late evening. (Bryant-OBX DX)

684 SPAIN Radio Nacional 1, Sevilla, Mar 4 0015 - Presume this. Heard briefly in probable SS. Poor level. (Bryant-OBX DX)

693 UNITED KINGDOM BBC Radio 5 Synchros (pres.), Mar 4 0013 - Presume this. EE programming at fair level noted in passing. (Bryant-OBX DX)

765 SWITZERLAND R. Suisse Romande, Sottens, Mar 4 0010 - Heard throughout the DXpedition, sometimes at good levels with continuous quiet music, sometimes quiet Euro-pops, sometimes semi-classical. (Bryant-OBX DX)

774 SPAIN Radio Nacional 1 Synchros, Mar 4 0010 - Heard briefly with poor level SS programming. Noted all evening with a strong het. (Bryant-OBX DX)

864 FRANCE France Bleu, Paris (pres.), Mar 4 2325 - Presume this. Heard at poor level with FF pops music program. (Bryant-OBX DX)

882 UNITED KINGDOM BBC Radio Wales (pres.), Mar 3 2355 - Presume this with seeming radio play: informal talk in EE fading fast. Not heard at numerous rechecks. (Bryant-OBX DX)

895 ST. KITTS & NEVIS Radio Nevis, Charlestown, Nevis, Mar 4 0014 - Noted here at good strength in later evenings throughout the DXpedition. Carries BBC news 0000 to 0015. (Bryant-OBX DX)

909 UNITED KINGDOM BBC Radio 5 Synchros, Mar 3 2350 - Primarily EE talk noted several times during evening at fair to good level. (Bryant-OBX DX)

1053 UNITED KINGDOM TalkSPORT, Droitwich+, Mar 3 2345 - Presume this with low-level EE talk in seeming sports talk format. (Bryant-OBX DX)

1089 UNITED KINGDOM TalkSPORT Synchros, Mar 3 2340 - Fair to good throughout evening with sports talk programming. Excellent level by 0200. (Bryant-OBX DX)

1125 CROATIA Hrvatski Radio, Deanovec, Mar 5 0431 - Noted here with pops program at fair to poor level, parallel 1134 Zadar. (Bryant-OBX DX)

1134 CROATIA Hrvatski Radio, Zadar, Mar 4 0040 - Noted throughout the DXpedition as a het or as audio. Sometimes signal at excellent levels. (Bryant-OBX DX)

1143 SPAIN COPE Synchros, Mar 3 2318 - Noted here in passing with moderate to poor signal. Spanish talk and music. (Bryant-OBX DX)

1197 MOROCCO RTM B, Agadir (pres.) , Mar 4 2340 - Presume this. Heard only on the due east wire with FF programming at fair/poor level. (Bryant-OBX DX)

1314 NORWAY NRK Kitsvøy , Mar 3 2320 - Heard throughout the DXpedition, often at very strong levels. Many of the pop tunes in EE. (Bryant-OBX DX)

1503 EGYPT North Sinai Radio, El Arish (tent.) , Mar 4 2353 - Tentative this. Arabic programming at fair to poor level. Primarily popular Arabic songs. Heard only this date/time, despite numerous rechecks. (Bryant-OBX DX)

Shortwave

2310 AUSTRALIA ABC Alice Springs, Mar 4 1131 - Sporting event at easy listening level until lost in sunrise noise. // to 2325 ABC Tennant Creek. Very weak Katherine on 2485 in the mix. (Cones-OBX DX)

2390 MEXICO R. Huayacocotalo, Mar 5 0045 - Frequent IDs in the middle of brass marching band style music. Signoff announcements starting at 0056 with trumpets, IDs and children singing. (Cones-OBX DX)

2485 AUSTRALIA ABC Katherine, Mar 5 1145 - Very weak signal (no movement of S-meter needle delivering interview commentary and musical selection. Lost at 1204 in sunrise noise and Bryant's getting up noises. (Cones-OBX DX)

3320 SOUTH AFRICA R. Songer Greuse, Mar 5 1659 - Armchair level all evenings with pop music. Best on SW antenna. (Cones-OBX DX)

4053 GUATEMALA R. Verdad, Mar 4 0420 - Religious programming with strong (4) signal on NE antenna. (Cones-OBX DX)

4760 INDIA AIR Port Blair, Mar 5 0024 - Heard the following at sign on: Leh (4760), Jammu (4830), Mumbai (4840), Delhi (4860), Jaipur (4910), Srinagar (4950), Chennai (7270). (Cones-OBX DX)

4760 INDIA-KASHMIR AIR Leh, Mar 4 0115 - Lots of talking and musical breakers. ID at 0130. (Cones-OBX DX)

4780 GUATEMALA R. Cultural Coition, Mar 4 0010 - Talk and music, ID at 0025 and 0030. (Cones-OBX DX)

4830 INDIA-KASHMIR AIR Jammu, Mar 4 0050 - Music and commentary. Heavy CODAR interference. (Cones-OBX DX)

4950 INDIA-KASHMIR Radio Kashmir, Srinagar, Mar 4 0030 – Very listenable signal with typical AIR time pips at the half hour and into presumed news. (Bryant-OBX DX)

4965 ZAMBIA Christian Voice, Mar 4 0202 - 33333 signal with religious vocals and commentary. (Cones-OBX DX)

5990 BRAZIL R. Senado, Mar 4 1002 - Armchair level Brazilian music. (Cones-OBX DX)

6040 COSTA RICA R. Exterior de Espana, Mar 5 0200 - Sign on at 0200 with announcements and time pips. Strong signal with music and talk. Time pips and ID at 0230. (Cones-OBX DX)

7270 INDIA AIR Chennai, Mar 4 1105 - Mixed programming with heavy fades, static and HAM interference. (Cones-OBX DX)

9645 BRAZIL R. Andeirantes, Mar 3 2330 - Strong every evening. (Cones-OBX DX)

9840 INDIA AIR Mumbai, Mar 4 0000 - Many Indians strong at sunset. Music and talk. (Cones-OBX DX)

10330 INDIA AIR Bangalore, Mar 4 0152 - Movie soundtrack or radio drama. Weak. (Cones-OBX DX)

Appendix

COMMENTARY ON PROPAGATION: OBX DXII

Advances in technology and the quantum improvements in communication between radio enthusiasts have combined to allow us some comparisons between reception conditions on the Outer Banks and those elsewhere during our three day expedition. Our experience on the Banks could be characterized as follows:

Time/Date	L Wave	M Wave	S Wave
2300-0500 UTC March 3-4	Excellent	Good	Excellent
2300-0500 UTC March 4-5	Excellent	Fair	Excellent
2300-0100 UTC March 5-6	Poor	Very Poor	Poor

The relationship between reception conditions and the Sun-Earth electromagnetic environment is highly complex and a continual source of speculation, discussion and too little research for the past century. Probably the only generally agreed statement concerning these interactions at the frequencies we address are that successful long distance reception, particularly on routes which approach the polar auroral rings, are *somewhat dependant on experiencing a period of quiet "space weather" conditions*. In these discussions, "quiet conditions" are usually equated to Planetary K indices of zero to two for some hours or days. There has also been a long-held view that there is often a *heightened period of trans-equatorial reception that occurs in the first hours of a transition from "quiet" conditions to a much more disturbed ionosphere*.

Solar and Geomagnetic Data: Feb 28 thru March 09, 2005

Date	Solar flux	Sunspot number		Planetary A index			K indices (3-hour intervals)		Min-max solar wind speed (km/sec)	Number of flares (events)		
		STAR	SEC	STAR	SEC	Daily low - high	Planetary	Boulder		C	M	X
20050309	99.9	60	77	19.9	20	12-32	34433344	34433444	593-778	2		
20050308	93.5	57	52	26.5	26	12-56	45533334	45433334	622-845			
20050307	87.0	47	43	42.3	42	22-94	55644454	54644444	580-817			
20050306	83.6	28	22	35.5	36	15-48	53543545	44543534	364-708			
20050305	81.2	18	22	9.6	10	4-18	13222233	13322223	352-422	1		
20050304	78.9	12	13	2.9	3	2-5	10001110	10101111	360-465			
20050303	77.0	11	24	4.0	4	0-6	11011221	11112112	452-582			
20050302	74.6	11	11	11.9	12	4-15	33333311	33333311	564-749			
20050301	73.7	11	11	11.5	11	5-22	21332224	22332313	577-732			
20050228	75.0	0	11	12.5	12	4-22	13333314	13333313	559-712			

As can be seen in these data, our experience on the Outer Banks equates quite well with the traditional wisdom concerning distant reception. The sudden shift in conditions at about 2100-2400 UT on March 6 was almost certainly due to matter impacting the ionosphere from a C-class solar flare. Given that the relationship between measured ionospheric conditions and successful distance reception is so complex, it is unusual to see so perfect a fit.

During these same three days, three radio enthusiasts were monitoring Trans-Pacific medium wave signals in the Pacific Northwest of North America; also, several British medium wave enthusiasts were monitoring Trans-Atlantic signals during the period.

Examining the British experience on March 4-6 first: The British had been experiencing good to excellent receiving conditions for 10 days or more prior to our DXpedition. Though these varied somewhat, day to day, they were generally all a significant improvement on the band conditions experienced at mid-winter. March 1st and 2nd seemed to be better than the morning of March 3rd (18 hours before we began to listen on the Outer Banks.) March 4th saw a return to good conditions. Martin Hall, using a similar receiver and antenna set-up to our own, but located on the west coast of Scotland, noted March 5th as “*Some strong signals coming in from Florida and Newfoundland at the start of listening at 0600, but only a few logs of interest. Unstable [reception conditions] with stations up and down in strength....*” Martin formally logged only two stations in Miami, FL, one each in the Bahamas, Cuba and New Jersey. This experience corresponds nicely to our second evening of listening which was characterized as “a pale reflection of the previous night.”

Martin’s comments reporting his session of March 6 are very interesting:

‘Jan Alvestad writes: ‘Early on March 6 it is obvious that more significant effects from CH149 [the solar flare] have arrived’.

‘Yup, obvious here in Clashmore[Scotland, Martin Hall’s location] too, with propagation having moved south; several South American and only a few North American stations audible at start of listening at 0600. By 0645 nearly every 10 kHz channel was occupied a Brazilian or other stations from the southern half of South America, but this was the peak, and stations became weaker thereafter; by 0835 only a few were left, along with half a dozen Newfoundland stations and a handful from the Caribbean. Quite a bit of static noise noticeable today.’

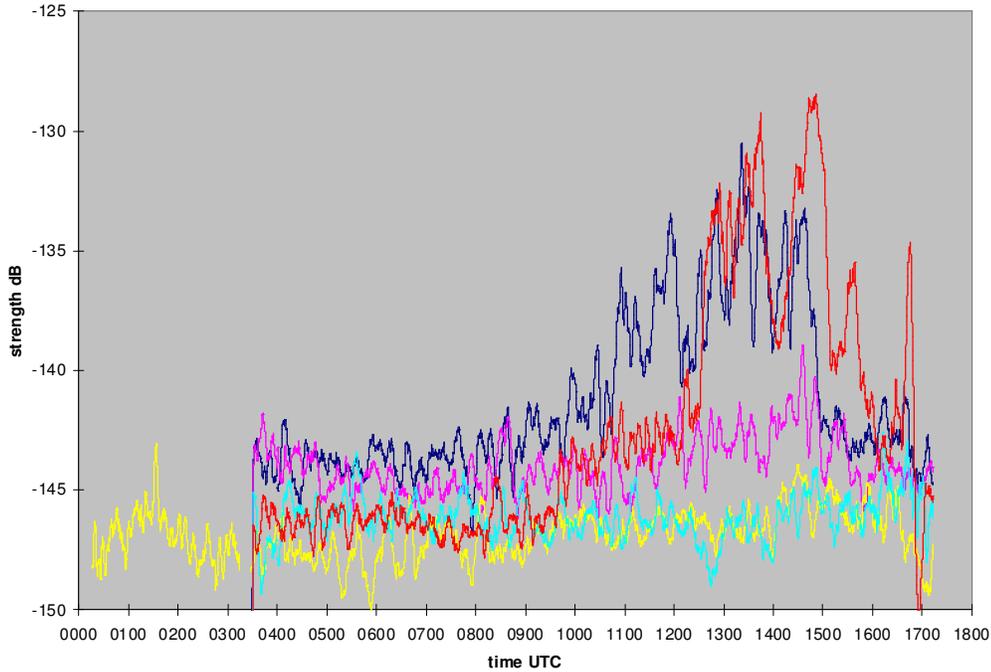
Martin went on to report a Brazilian station, an Uruguayan, a Chilean and three stations from the Argentine, almost certainly a reception via a classic trans-equatorial enhancement at the onset of an ionospheric storm. His loggings were from around 0600 on Sunday morning, some 5 hours after we noted near “wipeout” conditions on the Outer Banks. Had there not been severe thunderstorms in our area and record cold that evening, would we have noted similarly enhanced reception to our South??? There were certainly no signals coming from Africa (on 9 kHz. splits.) as we tuned across the dial. We only noted a weak het on 1215 (presumed Virgin Radio in Britain) and on 1314 (presumed Norway.) Possibly the northerly reception had been wiped out but the southerly enhancement had not yet begun, when we abandoned the Outer Banks DX site at 0130 on March 6th. We certainly know where the thunderstorms were located that Martin heard so clearly in Scotland.... Just to our South!

During this same time period, Walt Salmaniw and Nick Hall-Patch were monitoring Trans-Pacific medium wave conditions from Victoria, British Columbia and Guy Atkins was at the dials in suburban Seattle, WA. They too had experienced quite good reception conditions for the ten days or so prior to the DXpedition, especially on March 1st. Guy Atkins also reported especially good reception conditions on March 4th, about 6 to 8 hours after we experienced our best reception on the OBX; though Walt experienced more mediocre conditions that morning. On March 5th they reported good-but-not-great conditions. March 6th was reported as very poor, with no southerly enhancement noted. These conditions parallel those experienced a continent away on the Outer Banks quite closely.

For a number of years, Nick Hall-Patch has maintained an automated propagation monitoring program. Daily, his equipment follows the signal strength of two MW signals from Japan/Korea (594 and 1566 kHz.) and two from Australia (612 and 1548 kHz.) The program also tracks 1314 kHz., largely to record the very rare trans-polar propagation of NRK, Kitsvov, Norway. Nick has allowed us to reproduce his grafts for the three days in

question. The charts for March 4th and March 5th are quite similar, so the former was eliminated for brevity. As you can see, on March 5th, both of the Japan/Korea signals were quite active from transmitter sunset until well after 1445 UT sunrise at the receiver. Signals with a strength of just above -140 dB deliver audio, so this morning was quite listenable to East Asia. March 6th shows quite a different pattern, with 594-Japan (dark blue) being almost completely suppressed and 1566-Korea (red) delivering audio only briefly just before dawn at the receiver. Note also that 612-Australia shows some elevation of activity on March 6th, so some small amount of southerly enhancement may have been present.

Mar 5/05 with loops



Mar 6/05 with loops

