

**REPORT ON FINDINGS
OF
FIELD INVESTIGATION
OF RADIO FACILITIES
XHBCE-FM, XESS(AM), XESDD(AM) & XEKTT(AM)
ALL LOCATED IN
BAJA CALIFORNIA NORTH, MEXICO**

MAY 2005

**BY:
JOEL T. SAXBERG,
CONSULTING RADIO ENGINEER
ARCADIA, CA**

**ENGINEERING STATEMENT OF JOEL T. SAXBERG, CONSULTING
RADIO ENGINEER**

This report has been prepared for Lazer Broadcasting Corporation, licensee of KXRS(FM), 105.7 MHz, Hemet, California, by Joel T. Saxberg of Broadcast Engineering and Equipment Maintenance Company of Arcadia, California. KXRS has reportedly been receiving considerable interference from co-channel XHBCE-FM, a relatively new station that operates from a site somewhat south of Tecate, Baja California North, Mexico. The purpose of this report is to document the findings of my field investigation on XHBCE (105.7 MHz), as well as my findings on XESS (620 kHz), XESDD (1030 kHz) and XEKTT (1700 kHz) that I understand are related to XHBCE by common ownership.

During the first two weeks of May 2005, I conducted an aerial inspection of the transmitter sites of the aforementioned stations using coordinate data available in the FCC's AM and FM Query programs, and in the case of Cerro Bola, the coordinates on file with the FCC (see Appendix 2). I flew to the various sites by using the standard GPS navigation equipment provided on the aircraft and verified critical readings with my own Garmin 45XL GPS receiver. In addition, I was able to monitor relative incoming signal strengths on a Yaesu VR-500 receiver linked to its antenna through a switch-type thru-line RF attenuator and a short length of coaxial cable and in this way could determine which stations were being transmitted from which sites.

A total of five sites were surveyed and photographed. XHBCE holds authorizations for two of the sites, XEKTT holds authorizations for another two sites, and XESS and XESDD are said to share a fifth site, apparently with a common three-tower directional antenna array. The sites are identified in the following table by name and coordinates

expressed in degrees-minutes-seconds (NAD-27 datum). In addition, the frequencies that I monitored at each site are given:

<u>Site Name</u>	<u>Coordinates (NAD-27)</u>	<u>Frequencies Monitored</u>
Site 1: Matamoros Jaramillo	32-26-50 116-43-55	105.7 MHz
Site 2: Cerro Bola	32-18-51 116-39-54	95.3, 105.7, 685.75 MHz
Site 3: Tijuana Airport Site	32-32-16 116-59-23	620/1030/1700 kHz
Site 4: Cerro Jaramillo	32-31-36 116-49-04	620/1030/1700 kHz
Site 5: Puerto Nuevo	32-14-57 116-56-49	620/1030/1700 kHz

RESULTS OF THE FIELD SURVEY

SITE 1 - MATAMOROS JARAMILLO

This site is located about 11 miles southwest of Tecate, Mexico and is situated far down the northwest flank of a mountain. From FM Query (see Appendix 1), I had expected to find XHBCE's 50,000 watt Class B transmitter installation complete with a directional antenna. In reality, there was nothing at the coordinates but wild brush and grass. There were no power lines, no roads, no trails. An aeronautical search of the area for XHBCE's transmitter came up empty handed and my receiver failed to pick up any meaningful signal on 105.7 MHz.

In short, there is nothing built at XHBCE's authorized transmitter site, and there is no physical evidence to suggest that a transmitter was ever built there, see photo below.



SITE 1 - MATAMOROS JARAMILLO

105.7 MHz Authorized Class "B" location is in foreground of this ravine

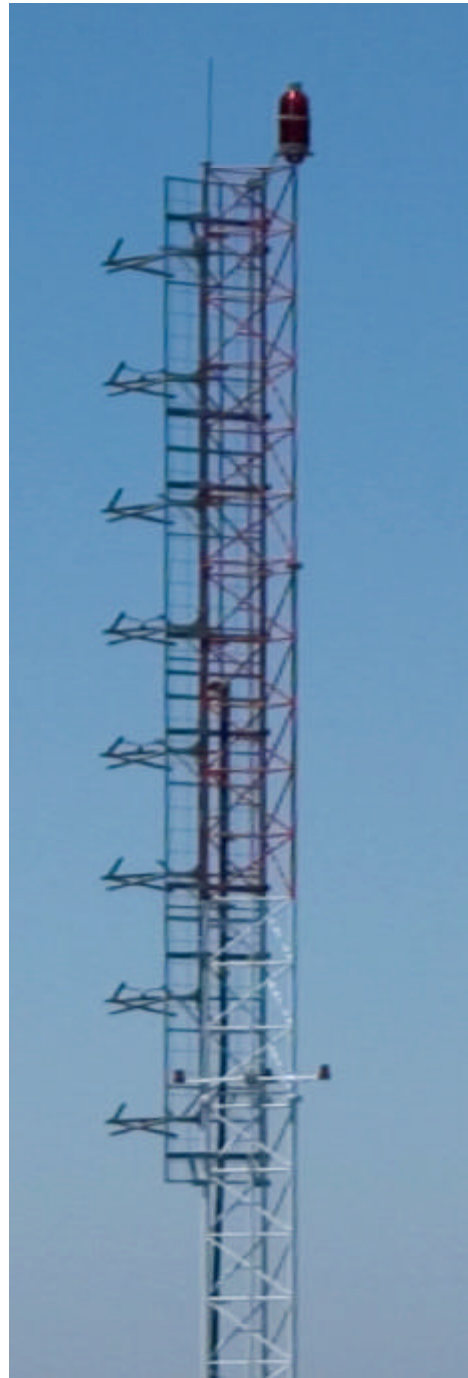
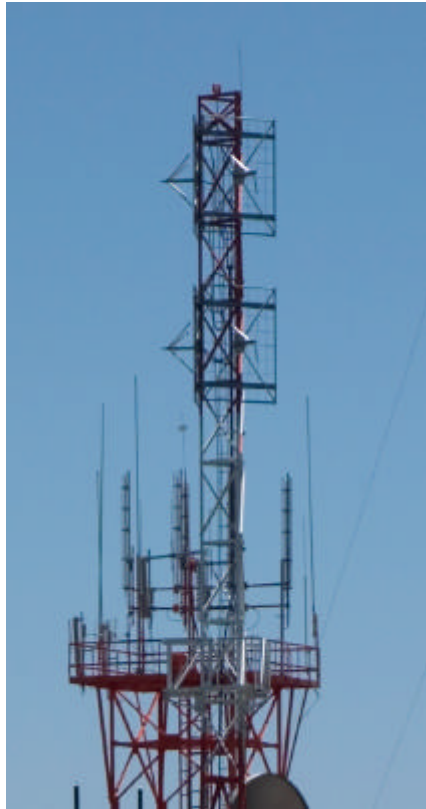
SITE 2 - CERRO BOLA

This site is located on a commanding mountaintop about 18 miles SSW of Tecate, Mexico and serves as a microwave hub as well as a broadcast site. From an FCC letter dated March 1, 2005 provided to me by Lazer Broadcasting the first page of which is included in Appendix 2, I had expected to find XHBCE's Class C1 directional facility under construction at Cerro Bola if work on that newly authorized plant had even begun.

Instead of finding no station or a station under construction, I was surprised to find a complete operating XHBCE transmitter plant as confirmed by signal strength readings in fly-by measurements. To review, XHBCE's transmitter should have been built in a ravine on the side of a mountain about 10 miles from Cerro Bola (see the Matamoros Jaramillo write up above), but was operating from the much higher Cerro Bola instead.

In addition to XHBCE on 105.7 MHz, I determined that signals from XHATE-FM, 95.3 MHz, and a Channel 49 television station were also coming from the Cerro Bola site. The XHATE signal is noteworthy because, like the XHBCE plant authorized for construction, XHATE is a Class C1 facility. Class C1 facilities at the height of Cerro Bola should be permitted to run about 8 kW ERP maximum based on XHBCE's SCT authorization. What caught my eye were two FM antennas at Cerro, an eight bay one-half wavelength spaced directional and a panel antenna consisting of two panels per level with two levels. Both antennas (the panel type and the eight bay backed by a reflector panel) are pictured below.

Based on these findings, a field investigation of the antenna installation - - and the transmitters connected to them -- is highly recommended. Furthermore, XHBCE should be called upon to provide (if it has not done so already) the horizontal antenna pattern of its directional antenna to ensure that the entire arc of KXRS' 60 dBu contour is protected from interference. This information must be provided to the U.S. per Article 8, Section 8.3 of the U.S./Mexican FM Broadcasting Agreement signed August 11, 1992. KXRS should then inspect the antenna to ensure that it was installed properly and oriented correctly.



**Panel Antenna (2 per level) & one-half wavelength spaced directional
SITE 2 - CERRO BOLA**

SITE 3 – TIJUANA AIRPORT SITE

This site is immediately south of Tijuana International Airport and is one of two sites authorized as a 1700 kHz transmitter location. AM Query indicates that if this site is in use, I should find two 90 degree tall towers spaced by 90 degrees and oriented toward 92 degrees true. In fact, no towers were erected. A few painted tower sections could be seen laying on the ground suggesting that towers would soon be built, or that towers had recently been dismantled. It is suggested that an eye be kept on tower construction if construction lies ahead. Two towers must be built on this property – not one -- if XEKT is to operate from this site at night, see Appendix 3.



SITE 3 - TIJUANA AIRPORT SITE

SITE 4 - CERRO JARAMILLO

This site is located on a graded-off mountaintop about midway between the Mexican border towns of Tijuana and Tecate, Mexico. AM Query data indicate that this is one of two sites authorized for XEKT on 1700 kHz. According to the data in Appendix 4, I should find two towers 184 degrees tall and separated by 90 degrees.

Signal strength readings showed that this was in fact XEKT's active transmitter site. However, the two towers found on the site were of grossly unequal height reflecting unauthorized tower construction and therefore unauthorized operation of XEKT, see photo below.

I was surprised to find by signal strength readings that Cerro Jaramillo -- XEKT's transmitter site -- also being used to radiate XESS' signal on 620 kHz. By international agreement, XESS should be located about 21 miles SSW of Cerro Jaramillo, see the coordinate data for XESS in Appendix 5. Further, XESS is required to use a three tower pattern on a fulltime basis (Appendix 5), but Cerro Jaramillo only supports two towers, so there is yet another apparent rule violation.



SITE 4 - CERRO JARAMILLO

SITE 5 - PUERTO NUEVO

This site is on virtual beachfront property on the Pacific Ocean and about 20 miles due south of Tijuana, Mexico. AM Query data in Appendix 5 indicate that I should expect to find both 620 and 1030 kHz transmitters at this site sharing a common three-tower directional antenna array. These stations are required to use three towers on a fulltime basis; they are not authorized for non-directional operation.

What I found at Puerto Nuevo was a single tower radiating the signal of XESDD alone (1030 kHz). Thus, the radiation from this site would be non-directional and in gross violation of the terms agreed upon internationally. See Appendix 5 and the photo below.



SITE 5 - PUERTO NUEVO

APPENDIX 2
(CERRO BOLA)



Federal Communications Commission
Washington, DC 20554

International Bureau

Jorge Rodriguez Castaneda, Director General
de Normas y Sistemas de Difusion
Av. Eugenia No, 197 1-Piso
Col. Vertiz Narvarte
Del. Benito Juarez
03600 Mexico, Mexico, D.F.

March 1, 2005

Dear Mr. Castaneda:

The following is in response to your Administration's letter dated 18 February 2005, file #119.305.402/016/2005-947, proposing to amend Table A of the 1992 USA-Mexico FM Broadcasting Agreement as follows:

<u>Location</u>	<u>Channel</u> <u>Delete</u>	<u>Add</u>
Matamoros Jaramillo, B.C. L.N.: 32°26'50" L.W.: 116°43'55"	289B*(L1)	---
Tecate, B.C. L.N.: 32°18'51" L.W.: 116°39'54"	---	289C1*(L2)

*(L1) Restricted allotment limited to 10 kW ERP and 246.38m HAAT or the equivalent along the 352.6° azimuth in the direction of channel 289A in Hemet, CA.

*(L2) Restricted allotment limited to 16 kW ERP and 300m HAAT or the equivalent along the 351.03° azimuth in the direction of channel 289A in Hemet, CA, and limited to 96 kW ERP and 300m HAAT or the equivalent along the 8.88° azimuth in the direction of channel 289B in Ludlow, CA.

In reference to your 18 February 2005 letter, it is stated that Mexican broadcast station XHBCE-FM has the obligation to provide service, apart from the city of Tijuana, B.C., to the city of Ensenada. It is also stated that, to provide service to Ensenada, a directional antenna system was authorized. However, we find that the directional antenna authorized to XHBCE-FM, Matamoros Jaramillo is not designed to serve Ensenada, which is some 65 kilometers away from the Matamoros Jaramillo site.

It is stated in your 18 February 2005 letter that the Commission was not notified of XHBCE-FM's changes to serve Ensenada due to the fact that the signal radiation is present within Mexican territory, thus avoiding causing potential interferences to US stations. However, article 8.1.1 of the agreement between our governments states that

APPENDIX 3

XEKTJ BN TIJUANA Mexico
Daytime
 1700 kHz
Domestic Station Class: B Region 2 Station Class (corresponds to W. Hemisphere): B

Coordination Status: Canada: - Mexico: Accepted Region 2: -

File No: --- Facility ID No.: 104044

CDBS Application ID No.: 1036430

32° 32' 16.00" N Latitude Power: 10.0 kilowatts (kW) Daytime

116° 59' 23.00" W Longitude (NAD 27)

DAN - Directional Antenna: Nighttime only

Number of Augmentations to standard directional pattern: 0

RMS Standard: 0.00 mV/m at 1 kilometer

RMS Theoretical: 306.95 mV/m at 1 kilometer

1 tower CDBS Ant. System ID: 88656

TOWER INFORMATION:

Tower No.	Field Ratio	Phase (deg)	Spacing (deg)	Orientation (degrees)	Electrical Height (deg)	Twr Ref. (#0)	-No Top Loaded or Sectionalized				Antenna Structure Registration Number
							A	B	C	D	
1	1.000	0.00	0.00	0.00	90.000	0	0.00	0.00	0.00	0.00	0.00

XEKTJ BN TIJUANA Mexico

Nighttime
 1700 kHz
Domestic Station Class: B Region 2 Station Class (corresponds to W. Hemisphere): B

Coordination Status: Canada: - Mexico: Accepted Region 2: -

File No: --- Facility ID No.: 104044

CDBS Application ID No.: 1036430

32° 32' 16.00" N Latitude Power: 10.0 kilowatts (kW) Nighttime

116° 59' 23.00" W Longitude (NAD 27)

DAN - Directional Antenna: Nighttime only

Number of Augmentations to standard directional pattern: 0

RMS Standard: 0.00 mV/m at 1 kilometer

RMS Theoretical: 984.50 mV/m at 1 kilometer

2 towers in the directional array CDBS Ant. System ID: 88657

Tower information:

Tower No.	Field Ratio	Phase (deg)	Spacing (deg)	Orientation (degrees)	Electrical Height (deg)	Twr Ref. (#0)	-No Top Loaded or Sectionalized				Antenna Structure Registration Number
							A	B	C	D	
1	0.800	0.00	0.00	0.00	90.000	0	0.00	0.00	0.00	0.00	
2	0.500	100.00	90.00	91.60	90.000	0	0.00	0.00	0.00	0.00	

APPENDIX 4

XEKT T BN CERRO JARAMILLO Mexico

Daytime

1700 kHz

Domestic Station Class: B Region 2 Station Class (corresponds to W. Hemisphere): B

Coordination Status: Canada: - Mexico: - Region 2: -

File No: --- Facility ID No.: 104044

CDBS Application ID No.: 1000313

32° 31' 36.00" N Latitude Power: 10.0 kilowatts (kW) Daytime

116° 49' 4.00 " W Longitude (NAD 27)

DAN - Directional Antenna: Nighttime only

Number of Augmentations to standard directional pattern: 0

RMS Standard: 0.00 mV/m at 1 kilometer

RMS Theoretical: 386.45 mV/m at 1 kilometer

1 tower CDBS Ant. System ID: 86585

Tower Information:

Tower No.	Field Ratio	Phase (deg)	Spacing (deg)	Orientation (degrees)	Electrical Height (deg)	Twr Ref. (#0)	-No Top Loaded or Sectionalized				Antenna Structure Registration Number
							A	B	C	D	
1	1.000	0.00	0.00	0.00	183.730	0	0.00	0.00	0.00	0.00	

XEKT T BN CERRO JARAMILLO Mexico

Nighttime

1700 kHz

Domestic Station Class: B Region 2 Station Class (corresponds to W. Hemisphere): B

Coordination Status: Canada: - Mexico: - Region 2: -

File No: --- Facility ID No.: 104044

CDBS Application ID No.: 1000313

32° 31' 36.00" N Latitude Power: 10.0 kilowatts (kW) Nighttime

116° 49' 4.00 " W Longitude (NAD 27)

DAN - Directional Antenna: Nighttime only

Number of Augmentations to standard directional pattern: 0

RMS Standard: 0.00 mV/m at 1 kilometer

RMS Theoretical: 1226.73 mV/m at 1 kilometer

2 towers in the directional array CDBS Ant. System ID: 86586

Tower information:

Tower No.	Field Ratio	Phase (deg)	Spacing (deg)	Orientation (degrees)	Electrical Height (deg)	Twr Ref. (#0)	-No Top Loaded or Sectionalized				Antenna Structure Registration Number
							A	B	C	D	
1	0.800	0.00	0.00	0.00	183.730	0	0.00	0.00	0.00	0.00	
2	0.500	100.00	90.00	91.60	183.730	0	0.00	0.00	0.00	0.00	

APPENDIX 5

XESDD BN PUERTO NUEVO Mexico
Unlimited

1030 kHz
 Domestic Station Class: B Region 2 Station Class (corresponds to W. Hemisphere): B
 Coordination Status: Canada: - Mexico: Accepted Region 2: -
 File No: --- Facility ID No.: 162100

CDBS Application ID No.: 1000302

32° 14' 57.00" N Latitude Power: 5.0 kilowatts (kW) Unlimited
 116° 56' 49.00" W Longitude (NAD 27)

DA1 - Directional Antenna: Same constants day and night
Number of Augmentations to standard directional pattern: 0
Q Factor: 22.360000

RMS Standard: 0.00 mV/m at 1 kilometer
RMS Theoretical: 685.19 mV/m at 1 kilometer
 3 towers in the directional array CDBS Ant. System ID: 86579
Tower information:

Tower No.	Field Ratio	Phase (deg)	Spacing (deg)	Orientation (degrees)	Electrical Height (deg)	Twr Ref. (#0)	-No Top Loaded or Sectionalized Tower(s)-	A	B	C	D	
1	1.000	0.00	0.00	0.00	118.740	0		0.00	0.00	0.00	0.00	0.00
2	0.550	-70.00	167.37	190.00	118.740	0		0.00	0.00	0.00	0.00	0.00
3	0.550	70.00	167.37	10.00	118.740	0		0.00	0.00	0.00	0.00	0.00

XESS BN ENSENADA Mexico
Unlimited

620 kHz
 Domestic Station Class: B Region 2 Station Class (corresponds to W. Hemisphere): B
 Coordination Status: Canada: - Mexico: Accepted Region 2: -
 File No: --- Facility ID No.: 103522

CDBS Application ID No.: 1000423

32° 14' 57.00" N Latitude Power: 5.0 kilowatts (kW) Unlimited
 116° 56' 49.00" W Longitude (NAD 27)

DA1 - Directional Antenna: Same constants day and night
Number of Augmentations to standard directional pattern: 0
RMS Standard: 0.00 mV/m at 1 kilometer
RMS Theoretical: 709.99 mV/m at 1 kilometer

3 towers in the directional array CDBS Ant. System ID: 86591

Tower information:

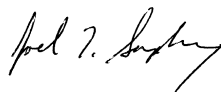
Tower No.	Field Ratio	Phase (deg)	Spacing (deg)	Orientation (degrees)	Electrical Height (deg)	Twr Ref. (#0)	-No Top Loaded or Sectionalized Tower(s)-	A	B	C	D	Antenna Structure Registration Number
1	1.000	0.00	0.00	0.00	71.470	0		0.00	0.00	0.00	0.00	0.00
2	0.520	-125.00	100.75	190.00	71.470	0		0.00	0.00	0.00	0.00	0.00
3	0.520	125.00	100.75	10.00	71.470	0		0.00	0.00	0.00	0.00	0.00

ENGINEERING CERTIFICATION

JOEL T. SAXBERG deposes and says:

1. That he is President of Broadcast Engineering and Equipment Maintenance Company, "BEEM CO.", radio engineering consultants. BEEM CO. maintains offices at: 2322 S. Second Avenue, Arcadia, CA 91006. Telephone (626) 446-3468
2. That he was graduated from California State University at Los Angeles, February 1966, with a Bachelor of Science degree in Electronic Engineering. He received a MS degree in Electronic Engineering Technology in August 1996.
3. That he has submitted many applications to the Federal Communications Commission for broadcast and auxiliary broadcast construction permits and licenses.
4. That his experience in broadcast engineering is a matter of record and he has spent over forty years working in the field of radio engineering.
5. That the attached report was prepared by him or under his direction and supervision. That he believes the facts stated therein to be both true and accurate. Statements that are based on information supplied by others are also believed to be true and accurate.
6. That he has performed field work on AM and FM broadcast transmitting systems throughout this country and continues to provide technical consulting services on a daily basis to broadcasters.
7. That he declares under penalty of perjury the foregoing is true and correct.

Executed on May 13, 2005



Joel T. Saxberg