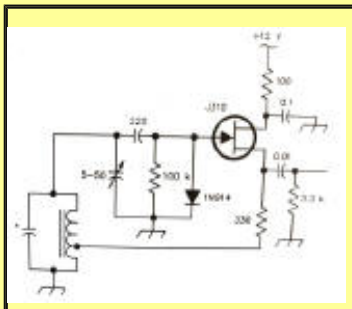
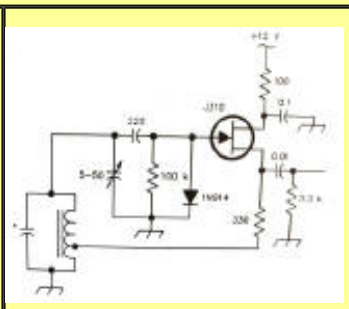


Local Oscillator



2011 | **Mesilla Valley Radio Club** | January

A pdf file of this issue is available. It should print fairly easily. If you do not have the free pdf file reader, go to http://www.adobe.com

Coming Events

Date	Event	Time
M - F	6 m FM net 52.540	6:00AM
T, T	Informal Wal-Mart (E)	10:00AM
M, W, F	Informal Wal-Mart (W)	10:00AM
Mon	WTRA Swap net 146.88	8 PM
Wed	Net 146.64	6:45PM
Jan 4	Builders Group - Club House	7 PM
Jan 8	Breakfast - Club House	8 AM
Jan 8	Business meet - Club House	9 AM
Jan 18	Builders Group - Club House	7 PM
Jan 29	Albuquerque Winter Tailgate Swapfest (Albuquerque, NM)	
	for more events see http://www.n5bl.org/calendar	

Table of Contents

COMING EVENTS
TABLE OF CONTENTS
CHRISTMAS DINNER
FIBER CABLE CUT
QRSS
BUILDER'S GROUP
MONTHLY BUSINESS MEETING
MONTHLY BOARD MEETING
UNCLASSIFIED
BACK PAGE

Christmas Dinner

The space below is used for acknowledgements and maintaining the site.
Send comments, suggestions, and requests to Alex. F. Burr or send e-mail to aburr @ qzxservices.com.
Technical assistance, net access, design, and maintenance provided by **qzxservices.com**

2011	LOCAL OSCILLATOR	January

THE ARTICLES FOR THIS MONTH

CHRISTMAS DINNER

The annual Christmas Dinner was held at 6 PM at Furr's Cafeteria. There were about 20 to 30 hams and their families gathered in the separate room located on the west side of the cafeteria. The club had arranged for the drinks to be included in the usual charge for the meal. We had the entire room to ourselves and had easy access to the wide variety of food. The evening was taken up with rag chewing and food chewing.
Return to Table of Contents

FIBER CABLE CUT
AD5FE

In the late afternoon of Tuesday Dec. 14, 2010, a construction crew working south of Socorro NM cut the main fiber-optic cable connecting Las Cruces to Albuquerque. This cut resulted in the loss of almost all land-line phone service in southern NM. The outage included the service to the 911 call centers in Dona Ana County as well as others, leaving the counties with no 911 service.

When the extent of the outage was realized, the EOC in Las Cruces was activated and Amateur radio support was requested. The EOC ham radio room was brought on line manned by Kevin McNelis, K5KMC,
along with George Kopp, KD5OHA, and with Henry Schotzko, AD5FE, the DEC running the show. Not long after the EOC was brought on line ham support was requested for the Fire Department Mobile Command Van which was stationed by the county 911 dispatch center. John Beakley, WK5C, was contacted and sent to support the FD Van. Shortly after that a request was received from the New Mexico State Police for ham support at their Las Cruces office. Dave Hassel, WA5DJJ, was contacted and sent to the NM-SP office to support them. The FD van was easy to support because of the ham equipment which is already in place in the van. The State Police building was another matter. When built, the building was constructed as a shielded building, this made it very hard to get any radio signals in or out of the building. Dave worked very hard trying to establish communications with any repeaters and ended up reaching the EOC so operators there could relay by way of the Mega-Link to stations up North. Although cumbersome, this worked, and brought the idea that things would be a lot easier with an external antenna.

This idea was presented to the communications specialist for the SP there and he agreed, he even pointed out a good place on a tower for us to place the antenna. It just so happens that we have a dual-band antenna collecting dust in the EOC storage room that will be used for this antenna as well as some coax. We are waiting for all the permissions to install this antenna and run the coax. When we get this antenna installed and coax run we should be in much

better shape to support the NM-SP office here in Las Cruces.

This event was a great way for us, “the Ham community” to show what we can do, and how we can help when other forms of communications have failed. We should also look at other means of moving information, because a lot of the supported agencies also lost their e-mail, and needed a way to move digital data. The event opened some eyes as to how much we depend on our computer networks to get things done, and how “helpless” we are when the “network” goes down.
Return to Table of Contents

QRSS
WA5DJJ

The question is "How much Power does it take to talk to Pensacola, Florida ?"
When I first started out in Amateur Radio, the answer to that question was 1,000 Watts. The year was 1959 and I was a technician class amateur radio operator and on 6 Meters power was the thing you needed to work the distant stations. (At that time it would be California to Florida)

Through the years the number of watts required to contact someone in Pensacola, Florida decreased from 1,000 to 200 to 50 to 20, to 5 watts. A few years ago, I joined a group called the KNIGHTS OF THE QRSS and found out that working Pensacola, Florida as well as other far flung spots on the earth took very much less power than 5 watts. Using 0 .1 watts you could get your call sign using nothing more than a dipole antenna to such places as Tasmania, New Zealand, Australia, and Belgium. It wasn’t magic and I didn’t rewrite the laws of physics. Propagation of radio waves in the atmosphere actually supports such communications. It is just that you have to use some special techniques to see it taking place. The techniques are explained on my webpage:
http://www.zianet.com/dhassall/QRSS_A.html and you can read it there as there isn’t room to explain it here.

On with my story. My friend Bill W4HBK runs a very exceptional internet grabber that has both a 4 hour display and a 10 minute display watching the frequency of 10,139,950 Hz to 10,140,100 Hz. If you were to put a low powered signal on the air in this frequency range, you could log on to his grabber webpage at:
http://www.qsl.net/w4hbk/W4HBKgrabber.html and see your signal in real time. The grabber updates every 10 minutes, so every 10 minutes you get to see what it heard the previous 10 minutes.

So, using Bill’s Grabber, I started at 0.1 watts using the FSKCW mode and watched to see if it heard me. Not only did it hear me, I was very LOUD. So, I cut the signal in half (3 dB) to 0.05 watts and waited. I still saw my signal returned on the internet. But I could not see my signal on his grabber at much less than .05 watts using FSKCW.

(Using FSKCW mode, I was transmitting at a speed of 6 second dits and 18 second dahs with a constant carrier and shifting the frequency up 5Hz for a dit or dah character.) One of the theories of Very Slow Speed CW (QRSS) is that the slower you key your transmitter, the lower the power you have to use to transmit it. So, to test the theory, I built a new straight CW keyer that would allow my transmitter to transmit 80 second dits and 240 second dahs. At that rate it took about 37 minutes to send the DJJ of my call sign. I then resumed the test to see how much power it took to talk to Pensacola, Florida.

With the new keyer sending the 80 second dit rate, I started with .05 watts and using Bill's 4 hour grabber display to see my signal. I was amazed to see it at .05 watts, and .025 Watts, and .01 Watts, and .005 Watts, and .001 Watts. It was getting down to the ESP level by this time and propagation was only giving me very small sections of my transmitted signal. The propagation windows turned out to be about 30 minutes around sunrise at Pensacola, Florida. My final power output to be detected in Pensacola, Florida was 0.000065 Watts or 65 micro Watts.
This adventure took almost four months to complete. More time was spent on transmitter modifications and measurements than in actual operations. It was done with a homebrewed transmitter that uses a Direct Digital Synthesis oscillator card being commanded by an ARDUNIO processor. The DDS oscillator was being frequency stabilized by a GPS Disciplined Oscillator locked up to 8 satellites for frequency stability of 1 Hz in 1 GHz. The power output was measured on a calibrated M cubed frequency/power meter. The antenna was nothing more exotic than a simple dipole cut to 10,140,000 Hz.
I learned about using the ARDUNIO Processor in the MVRC Builders group and had some valuable help from that group in getting my transmitter built and programmed. There is a small group of us here in Las Cruces that operate on the QRSS Mode. They are Robert, KE5OFK, Perry, KC7VHS, Tim, KD5SSF, Evan, KE5ZRZ and me. We have been nicknamed the Las Cruces Mafia by Bill, W4HBK,
because there are more QRSS transmitters on the air within 100 miles of Las Cruces, New Mexico than anyplace else on earth.

Further reading on this fascinating niche of Amateur Radio can be found by Goggling QRSS.
Local Elmering is available from me or other members of the group.
Return to Table of Contents

BUILDER'S GROUP
KD5SSJ

The builders group has decided to take the month of December 2010 off and meet again starting in January 2011. At that time the project will be a RF Probe that was featured in the December issue of Nuts and Volts. I did the prototype using a knife and removing copper, as needed, but most of the guys thought that it best that we do a printed circuit board.
The basic qualities of the RF Probe are that it has a high input impedance and has a low output impedance with a bandwidth of approximately 100KHz to 500MHz. Typically used with an oscilloscope, it can also be used with a receiver to make measurements on other radio circuits.
Return to Table of Contents

MONTHLY BUSINESS MEETING
KD5UZF

No December Business meeting
Return to Table of Contents

MONTHLY BOARD MEETING
KD5UZF

No December Board Meeting
Return to Table of Contents

UNCLASSIFIED
FOR SALE
1. A Kaito KA1130 dual conversion portable radio covering AM, shortwave, and FM. AM coverage from 520-1710 kHz and shortwave covering 10 bands. SSB on shortwave. Radio less than a year old and slightly used.

2. MFJ-1046 Passive Pre-selector with coaxial jumper cable. Less than a year old and slightly used. Unit covers 1.6 to 33 MHz in 6 bands.

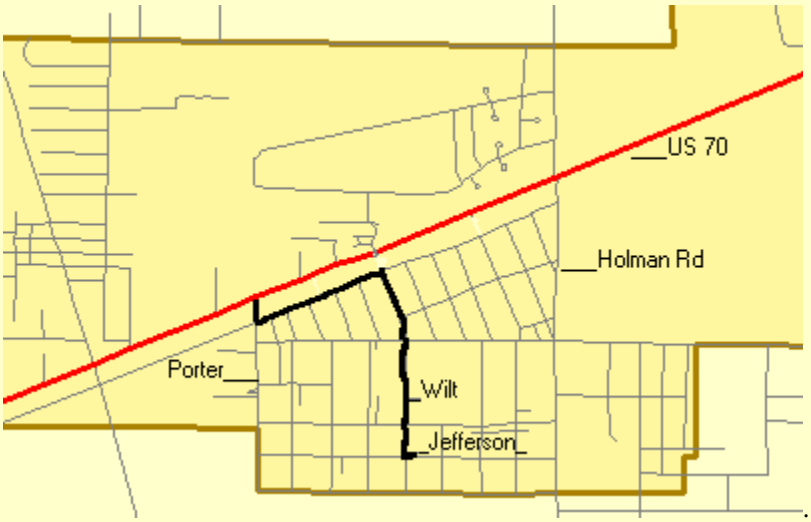
3. Icom IC-PCR1500-25 wideband computer receiver. Reception from 10 kHz to 3300 MHz, less cellular frequencies. Modes include AM, FM-wide, FM-narrow, SSB and CW (up to 1300 MHz). Radio less than a year old and slightly used.

4. Yaesu handheld transceiver VX-8DR with APRS Enhanced. Comes with a GPS unit and special antenna. HT Go-Bag included. Radio less than a year old and slightly used.
Evans Ralston
evans@kf5dni.net
Return to Table of Contents

2010	LOCAL OSCILLATOR	January

CLUB INFORMATION

The MVRC Clubhouse is located at the intersection of Wilt and Jefferson in Hacienda Heights. To find the clubhouse, set your destination on your GPS receiver as 32 degrees 22.961 minutes and -106 degrees 41.44 minutes. If you don't own a gps, take the Porter exit on US 70. It is about 5 miles from the I 25 interchange, near the firehouse. Almost immediately south of the south frontage road on the south side of US 70, turn left toward the mountains until you come to Wilt. Turn right. There is a jog in the road, but at 0.35 miles you should come to Jefferson. If you can't see the tower and beam, you shouldn't be driving. The treasurer would be delighted to receive your contribution for landscaping and furnishing.



Officers

Office	Name	Call	Phone	E-Mail
President	Robert Truitt	KE5OFK	649-4173	robhtruitt@zianet.com
Secretary	Melanie Jack	KD5UZF	202-3363	thedragon@melaniestonejack.com
Treasurer	Fred Atkinson	WB4AEJ	526-2541	fred@wb4aej.com
Board Members				
	Terry Angle	KF5DNS	640-9669	kf5dns@gmail.com
	Bob Bennett	AD5LJ	382-0148	: rpbennett1@comcast.net
	Alex. Burr	K5XY	522-2528	k5xy@arrl.net
	Cash Olsen	KD5SSJ	382-1917	kd5ssj@arrl.net
	Henry Schotzko	AD5FE	526-1922	schotzko@comcast.net

The newsletter is always looking for articles and notes of interest to the members of the Mesilla Valley Radio Club. Please send them to Alex. F. Burr, K5XY, Editor, MVRC Local Oscillator, 695 Stone Canyon Drive, Las Cruces, NM 88011. Small personal ads from members will also be published. It would be helpful if submissions would be made in a machine readable form. Windows readable disks are welcome. Files can also be sent to the Internet address k5xy@arrl.net. The club maintains a web site at http://www.n5bl.org

JOIN THE CLUB

To join the Mesilla Valley Radio Club, renew your membership, or to support the repeaters, please print, cut out, and complete the form below. Send it with dues ($35 single, $45 family per year, add $10 to receive the newsletter by US mail instead of e-mail) to: Treasurer, MVRC, Box 1443, Las Cruces, NM 88004.

MESILLA VALLEY RADIO CLUB
CALL SIGN(S) _____FAMILY _____
_____
LIC CLASS (E, A, G, T, N) _____ _____ _____
ARRL (Y/N) _____ _____ _____
ARRL VE (Y/N) _____ _____ _____
Would you like to be added to the MVRC reflector? _____
NAME
_____
EMAIL
_____
STREET ADDRESS
_____
CITY & ZIP _____ PHONE _____
(OPTIONAL)
INTERESTS – Computer __ Contests __ Digital __ Elmer __ Emergency Communications __ Field Day __
Packet __ Programs __ Public Service __ Publicity __ RFI __ Repeater __ Social __ Take License Classes __
Teach License Classes __ Volunteer Examiner __ Other _____
SINGLE $35 FAMILY $45

Return to home page
Return to Local Oscillator first page
Return to N5BL home page