A repeater for southern San Benito County, part 1 by Ron Ross KD6ZXG

As described in our last areticle, in 2007 we placed the Hollister repeater in service which provided great repeater coverage throughout the northwest section of the county. While most of the county's population lived in the area served by this new repeater, the majority of the county was still without repeater or cell phone service. Generally when one left Tres Pinos and headed south on Highway 25, communication was pretty much non-existent. Therefore, we started looking into ways to place a repeater in southern San Benito County to extend our coverage over this popular highway that was used by many to travel to the Pinnacles National Park.

There were three problems that needed to resolved before this could happen. First, we needed to find a good location that would provide coverage not only to this area, but also back to Hollister so we could link the two repeaters together. Secondly, we needed to find a willing landowner that would allow us to access their property and to build a repeater site. Third, and probably most important, we needed to find funding as at this time the group not have any money or a bank account like we have now.

The first item on the agenda was to find a suitable site as without a location it would be hard to find support to obtain the needed equipment. One of the first sites that was considered was Call Mountain. Call Mountain is situated in the middle of the county and because of its location and height, this ridgeline would offer very good coverage in areas that were not presented served. The problem with Call Mountain was that it is on private land and the only access is by several miles of private ranch roads that are normally locked and the access is restricted. We were able to track down landowner but he was not agreeable to granting us access to the site for liability reasons (since that time the ownership of the land changed, but that is another story for a future newsletter). Several other sites were considered including a location on BLM land, but either access or coverage issues stopped all progress to find a suitable site.

Finally, we were able to find an agreeable landowner on a site near the Bear Valley fire station that would work fairly well for our needs. Then we moved on to focus on the equipment issue. The location had no commercial power, so we would need solar panels and several deep cycle batteries. There were also no structures on this site that we could use to house our equipment, so we would need to construct an enclosure and make sure it was livestock and pig tight to keep offending animals from damaging our equipment. We also needed radios, a controller, duplexer and other related equipment that if new, would cost thousands of dollars that we didn't have.

That is when the resourcefulness of the ham community stepped in. In the early 1990s, several local hams pooled their resources and constructed a repeater that was in operation for a several years before it eventually went off the air and was placed away in a closet at someone's house. It took a few phone calls, but eventually the old equipment was located and brought out of storage for our use. What was left of the equipment was an old crystal repeater, an early digital controller and a set of duplexers. An internet search found enough information on the components to get everything wired up and working again. The parts where installed in an old indoor repeater cabinet and placed into the back of a utility trailer and then hauled up the proposed site by a 4X4 vehicle. The trailer was parked for a few days being powered by a donated deep cycle battery and transmitting into one of the group's Diamond X-50

antennas on a 10 foot TV-type mast. The repeater was tested during his time period to see what the coverage would be. Considering the “ad hock” type arrangement, the results were promising enough to determine that this site would work for our needs.

With the site confirmed, the emphasis was then placed on getting the rest of the parts to make a permanent repeater. Slowly, used parts were located and donated to the cause. The repeater radio could not be reused as it was crystal controlled to 147.000 MHz and that another repeater had recently been placed in service on this frequency in Watsonville. The unit was old and tired as it was found to only putting out a few watts and it did not have capacities for CTCSS operation. In lieu of buying a new repeater unit, two Motorola mobile radios were purchased on eBay and were interfaced to the old controller. The setup worked, so a search was on for further items. A tower was soon donated but the big break came when one of the local hams located four deep cycle batteries and an outdoor repeater cabinet that we could use to house the equipment. Soon after, a local internet company donated four solar panels with controllers to our group. A local ranch donated fencing materials so we could fence off the cabinet from marauding cattle. A more favorable site on the same ridgeline was found and we started working on the fence. The next step was to put everything together, which turned out to be a lot more difficult task than was thought! But I am getting ahead of the story, which will be continued in the next newsletter. In the meantime, enjoy these two videos of our current Bear Valley site by clicking here: https://sbcara.org/bear-valley-2023-may/











N6SBC Repeaters – Part 3. Ron Ross KD6ZXG

BEAR VALLEY REPEATER



As described in our previous newsletters, in 2007 we placed the Hollister repeater in service which provided great repeater coverage throughout the northwest section of the county. While most of the county's population lived in the area served by this new repeater, the majority of the county's area was still without repeater or cell phone service. Generally, when one left Tres Pinos and headed south on Highway 25, communication was pretty much non-existent.

In the last newsletter, we described the process to find a good location near Bear Valley and to locate all the parts to make this work. While the County Office of Emergency Services was able to fund the Hollister repeater, funds were not available at that time for a repeater at a new location. Our ham radio group was just forming at that time, so we did not have a treasury to purchase the needed equipment. Piece by piece, our local ham community stepped forward and donated parts until we had enough to get started.

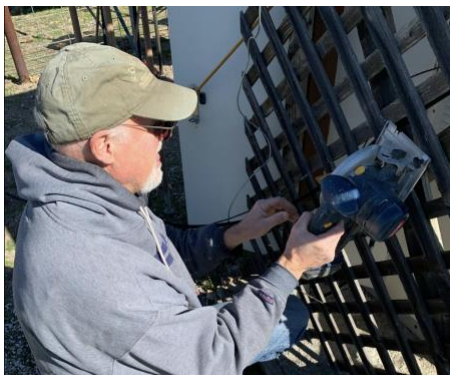


The site for the repeater was on top of a ridgeline and there were no structures to house the equipment so we had to start from scratch. The first order of business was to build a cattle-tight fence to keep marauding cattle from damaging the tower and cabinet. It took three long days of work over a couple of weekends to dig post holes, set fence posts, pour concrete and install fencing and a gate. But by the end of this step, we had a secure enclosure that allowed us to work and to safely leave parts behind until we could get back to the site for another work session.

Since there was no commercial power available, we build a sturdy wooden frame that was mounted above the cabinet that the solar panels were mounted on. All of the donated parts were crammed in the cabinet and somehow everything fit. At that time, the repeater was not linked to our Hollister repeater so we needed a method so that one could contact someone outside the range of this repeater. At the ridgeline, cell phone service came in reasonably well. So we hooked up a cell phone to the autopatch port on the repeater controller and this allowed an operator to make local phone calls by way of their radio's touch tone pad. Surprisingly, everything worked fine and at last we had coverage along Highway 25 to the Pinnacles.







After a while, funding from County OES allowed us to upgrade the components to newer state of the art equipment. The controller and duplexer were from the 1980s and the repeater itself was a pair of Motorola mobile radios hooked back-to-back. This upgrade also allowed us to link this repeater to the Hollister repeater so that we had seamless communications from the Hollister area to this part of the county.

The second batch of upgrades that were finished last year and that included housing the repeater equipment in a small shed type enclosure, new lithium batteries and installing a new linking system that allowed the new Hernandez Valley repeater to be linked to our N6SBC repeater network.



Double click to view video. For this and other drone video views: https://sbcara.org/bear-valley-2023-may/.

But we were far from completing our network. It was not too long after the Bear Valley repeater was placed in service that we were eyeing a third location that would expand our coverage all the way to Panoche Valley and to more areas of central and southern San Benito County. Eventually we found a good site on Call Mountain that would work, but I am getting ahead of the story. Stay tuned for part four which will appear in our next newsletter.

Repeater	Frequency	Offset	PL / Tone / CTCSS
Hollister-VHF (Park Hill)	147.315	+	94.8
Call Mountain	145.410	–	118.8
Bear Valley (formerly known as the South County)	146.625	–	94.8
Hernandez Valley	146.985	–	118.8

https://sbcara.org/freq/