

Radio on the Rio

**Amateur Radio in Socorro, New Mexico
And the Socorro Amateur Radio Association**

By Dave Finley, N1IRZ

Preface

It now has been nearly a year and a half since, in a moment of weakness, I accepted the task of compiling a history of the Socorro Amateur Radio Association and of ham-radio activity in Socorro. The task brought numerous surprises as I learned new aspects of our city's amateur-radio heritage. The first surprise came upon learning how far back that heritage goes -- to the year 1930. Though it was not a surprise, I was once again reminded during the compilation of this history just how active Socorro's hams have been and the notice that our city has received in the amateur-radio world.

This history is, however, certainly incomplete. There are long periods of time for which I could find no records and in which there undoubtedly were local hams and local ham activity. Thus, as with any history, this must remain a work in progress. I hope that new sources of information come to light and help fill in the gaps in this record. I also urge the officers and members of SARA to preserve documents, minutes, newsletters and other original sources of information for future hams. As new information surfaces, I hope to be able to revise this work and fill in some of the gaps.

My deepest appreciation goes to those who responded to my emails, answered my questions, and provided documents for this project. Most of these sources are cited in the references. Anyone with additional information is urged to contact the author so that future revisions may be more complete.

Ham radio in Socorro has, you will see, a proud history and we all can be proud of the accomplishments of those who have been part of our ham-radio community over the years. I think it appropriate that this account is completed during the 75th anniversary year of amateur radio in Socorro. As we celebrate our past, let us look forward to even greater accomplishments in the future.

73,

Dave Finley, N1IRZ
March 2005

Note on Sources

This history is based on a variety of sources, including SARA documents, personal recollections conveyed to the author, newspaper articles, books, magazine articles and World Wide Web sites. In many cases, the sources are cited in the text and detailed in the "References and Bibliography" section. Much information has come from the SARA Newsletter, published intermittently over the years. Information gleaned from the newsletter has not been cited specifically within the text, because there is so much of it that citation would unduly burden the reader. Finally, the author has been a member of SARA since 1992, and has drawn extensively upon his own memory in recounting events since then.

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Introduction

Over more than four hundred years of recorded history, Socorro, New Mexico, has distinguished itself far beyond the normal expectations of such a small town in a remote part of the Southwestern desert. At various times, Socorro has been famous as a mining center, a transportation hub, and the host of world-class research in the geological sciences, atmospheric sciences and astronomy. It thus should come as no surprise that Socorro also has made a name for itself in the realm of Amateur Radio, a world-wide technical and public-service hobby now pursued by millions of enthusiasts.

Prior to the arrival of radio in Socorro, the town passed a number of technological milestones, including the arrival of the Atcheson, Topeka and Santa Fe railroad on 12 August 1880, the installation of its first telephone system in 1902, and the establishment of the Socorro Electric Company in March of 1908 (Ashcroft 1988).

When Guglielmo Marconi spanned the Atlantic with his wireless telegraph on 12 December 1901, his stunning achievement spurred thousands of amateur experimenters to build their own equipment and venture onto the airwaves. Though it would be nearly three more decades before Amateur Radio would debut in Socorro, the town's hams would ultimately put their town prominently on the ham-radio map to such an extent that Socorro would be dubbed "Ham City, USA" by a national magazine. Here is the story of Amateur Radio in Socorro.

Broadcasting Comes to New Mexico

New Mexico's first broadcasting station went on the air as an experimental station founded by Dean Ralph Willis Goddard, an engineering and physics professor at New Mexico State University (then the New Mexico College of Agriculture and Mechanic Arts) in Las Cruces. Putting out 50 watts of power in June 1920, this station predates Pittsburgh's famous KDKA, which is generally considered to have become the nation's first broadcasting station when it aired the results of the Harding-Cox presidential election in November 1920. The Las Cruces station raised its power to 1,000 watts in 1921 and on 4 May 1922 received a

broadcasting license with the callsign KOB. (RadioDX 2003, KRWG-FM 2003)

Another station, KNJ in Roswell, received a broadcasting license the same day as KOB, but the Roswell station was gone from the licensee list the following year. However, KOB became a permanent fixture in the state, moving to Albuquerque about 1933. Today (as KKOB since 1986) KOB covers New Mexico and neighboring states with a 50-kilowatt signal.

KOB joined more than 200 other licensed broadcast stations in May of 1922, in a year that would see 100,000 radio receivers sold to consumers (Head & Sterling 1987). For the rest of the 1920s, radio saw amazing growth. By the end of that decade, the home receiver had evolved from a crude crystal set to a crisply-tuning vacuum-tube superhet and the main activity of radio listeners had switched from fascinated DXing -- collecting callsigns of distant stations heard -- to making sure one was home in time to listen to a favorite program. Major radio milestones came when batteryless, plug-in-the-wall receivers became affordable in 1927 and when NBC and CBS began coast-to-coast network broadcasts in 1926 and 1927, respectively (McMahon 1973 and Head & Sterling 1987). Radio also had become a major part of popular culture, perhaps symbolized best by NBC's *Amos 'N Andy* show that started its network run in August of 1929, and, by 1931, was the highest-rated show in the country (Douglas 1999).

In Socorro, merchant William D. Crabtree began selling radio receivers in the mid-1920s and by the 1930s, several local businesses sold radios (Harden 2004).

While New Mexico shared in the radio boom of the 1920s, it lagged in numbers, undoubtedly because of its largely rural population. In 1930, the year Socorro got its first ham operators, some of the more heavily-populated and more-urban states boasted radio-set ownership as high as 63 percent of their families. In New Mexico, only 10 to 20 percent of families owned radio sets (Census 1930). Socorro County, with a total population of 9,611 that year, thus would have had at most a few hundred radio sets. Of the 18,994 U.S. hams in 1930, 56 were in New Mexico (DeSoto 1936 and Melachrinis 2003). Nationally, hams accounted for 0.346 percent of the population, but in New Mexico, hams made up only 0.295 percent of the population. By 1940, Socorro County, with a

population of 11,422, had 881 dwellings with a radio set (Univ. of Virginia 2003).

Socorro's first broadcast station was KSRC, an AM station on 1290 KHz. Bob Martin, KC5LHL, a longtime news reporter and helicopter pilot for Albuquerque's KRQE-TV, worked for KSRC from 1969 to 1971, while he still was in high school. He recalls that the station ran 250 watts before sunrise and after sunset, with 1,000 watts during the day. The studio then was next door to the Loma Theater on Manzanares Street. The station's format varied during the day, including middle-of-the-road, easy listening, rock, and Spanish programming.

At KSRC in those days, Martin said, "We had no bathroom, so we'd have to go to the Loma Theater next door to relieve ourselves. We played the long version of *Ina-Godda-da-Vida* a lot." (Martin 2003)

At some point, possibly around 1986, KSRC was supplanted by KMXQ-FM (92.9 MHz), the station that currently serves Socorro. The call sign KSRC now is held by an FM station in Kansas City, Missouri.

Socorro's First Hams

The first hams in Socorro to appear on U.S. Government lists were Donald M. Cook, W5AQA, and Clark E. Rodenberg, W5BSP. They appear in the 1931 Department of Commerce callbook (Melachrinos 2003). Both gave their addresses as "School of Mines," and were students at what is now New Mexico Tech. Both graduated in 1934, Cook with a B.S. in geological engineering with petroleum option and Rodenberg with a B.S. in mining engineering (Hedges 2003). Rodenberg had come to Socorro from East St. Louis, Illinois; Cook's hometown is unknown.

Though they first appeared on the list of licensees in 1931, their graduation dates suggest that they arrived in town in the autumn of 1930. No record of their on-air activities has been found, but that does not mean they were not active. New Mexico's hams in the early 1930s may have been too busy experimenting and working DX to send in reports to the ARRL. The September 1931 issue of *QST* reports that two New Mexico hams had worked England and one South Africa in a recent month. In the June 1932 *QST*, the state's Section Communication Manager, Jerry Quinn, W5AUW, exasperatedly wrote, "You who crab about the

length of our reports, why not get the rest of the gang to send in their cards? Out of 42 stations in New Mexico, we get only 5 to report!"

Cook and Rodenberg were in Socorro at a time when ham radio was making great technical strides, and commercially-built equipment was becoming more prevalent, relieving many hams of the need to build their gear. In 1931, Leeds "The Home of Radio" in New York advertised National shortwave receivers with list prices of \$85 and \$89.50; hams were told to "write for extra special price." Uncle Dave's Radio Shack in Albany, N.Y., advertised a "National A.C. Short-Wave 5 with power pack wired" for \$70. Vibroplex sold their Lightning Bug for \$17 and the Eighth Edition of the *ARRL Handbook* went for \$1.00 softcover or \$2.00 hardback. ARRL membership cost \$2.50 per year. Those receiver prices, however, represented nearly a month's salary for the typical American, and that salary would dwindle in the coming years as the Great Depression deepened (Kennedy 1999).

Cook wrote a letter to NM Tech in 1962, reporting that he was then a consulting geologist in Bakersfield, California. By 1995, the school's records listed him as deceased. There is no further information available on Rodenberg (Hedges 2003).

The Pre-SARA Years (1934-1975)

When Cook and Rodenberg left Socorro, they almost certainly left the town devoid of hams. The record of ham activity in Socorro prior to SARA's formation in 1976 is quite spotty. However, the lack of a record does not mean there was no activity. While there undoubtedly were periods when Socorro had no hams, these certainly were broken by times when ham activity returned to the town.

Bob Stanley, W0ITB, helped put Socorro on the ham bands during two stints as a New Mexico Tech student in 1958 and 1960. Stanley, a former airborne radio operator in the U.S. Marine Corps, arrived in Socorro as K2CIQ, a call he received in 1953. He soon found Hank Harges, an employee of White Sands Missile Range, who also was licensed. The two became fast friends. While they did get on the air, they did not enter contests or operate Field Day stations.

"Our thing was building," Stanley explained. The two spent much time building and testing

various items of radio equipment. Harges' wife also was licensed, Stanley said. Stanley also recalled that, during this period, the manager of the local AM broadcasting station (KSRC) was a ham, and that a local TV repairman may have had a license, too.

Stanley met a fellow NM Tech student who became his wife and later got her own ham license. Stanley's stays in Socorro were brief. (Stanley 2004)

Stanley's recollections are in line with those of Luis Aguilar, WB5JMD, who says that, during the 1950s and 1960s, "there had always been one or two ham operators in town." When Aguilar decided he wanted to become a ham during that period, he was able to arrange to take a Novice exam from Dave Shortess, W5PQL, an active local ham (Aguilar 2004).

New Mexico Tech and, later, White Sands Missile Range proved to be institutions that effectively drew technically-minded people to Socorro, and developments were taking place elsewhere that eventually would bring a fresh influx of hams and potential hams to the town. While Cook and Rodenberg pursued their studies at NM Tech, a young engineer at Bell Telephone Laboratories in New Jersey made a discovery that would have a major impact on Socorro. In 1932, Karl Jansky, who was seeking to identify the sources of static that bedeviled transatlantic shortwave telephone links, found that some radio noise was coming from beyond the Earth (Jansky 1933). The first person to follow up on Jansky's discovery was an Illinois ham, Grote Reber, W9GFZ, who built a parabolic-dish antenna in his back yard in 1937, then made a series of systematic observations that formed the foundation of radio astronomy (Reber 1958). As the science of radio astronomy progressed through the next decades, its practitioners sought to improve their ability to make images of celestial bodies by collecting and processing the naturally-emitted radio waves from those bodies. The National Radio Astronomy Observatory (NRAO) was founded in 1956, and by the 1960s, its astronomers and engineers were working relentlessly to design an extremely capable radio-telescope system for high-resolution imaging. This project would produce the Very Large Array (VLA).

In January, 1966, NRAO staffers made an overflight of the Plains of San Agustin, west of Socorro, to evaluate that site's suitability for the

VLA. The following month, four NRAO staffers made another air inspection of the site, then made a ground reconnaissance. On 16 February 1967, the NRAO director, Dr. Dave Heeschen, AB4IE, reported to the National Science Foundation that the VLA Design Group had selected the Plains of San Agustin for the VLA.

The VLA project was approved by Congress in 1972, and by 1975, the NRAO staff in Socorro was permanent and growing. Licensed hams were among the earliest arrivals.

Socorro Gets a Radio Club (1976)

By 1975, there were enough licensed hams in town to ensure Socorro's continuous presence in the callbook. Jim Oty, WB5GWH, arrived in the Fall of 1975 to work on the VLA. He recalled that there were several hams who had been in town for some time then, including: John Browne, W5SBT, the local Presbyterian minister; Dave Shortess, W5PQL, a professor at NM Tech; Tom Sefranek, WA1RHP, who worked for MIT's Lincoln Laboratories; Ralph Stetson, K1RGD, who worked for AT&T; and Luis Aguilar, WB5JMD. In addition, NRAO already had brought Bill Dumke, WB5TCO, Chuck Broadwell, W5UXH, and Gary Bonebreak, all licensed, to Socorro (Oty 2003).

The 1970s saw the explosion of VHF hand-talkies and repeaters that now are a ubiquitous trademark of amateur radio. This was the decade that saw many amateurs turn their experimenting and operating focus from the HF bands to the higher frequencies. In its March 1972 issue, *CQ* magazine listed 310 2-meter repeaters in the U.S. and 52 in Canada. A 5-channel HT sold for \$450 and a complete 2-meter repeater for \$640 (Orr 1995). Operation with the mobile and hand-held VHF gear got easier when, in 1976, the FCC removed a requirement for signing "mobile" or "portable." (Lynch 1995) As the HT on the belt increasingly became the badge of the radio amateur, Socorro's hams wanted in on this new action.

Ham organization in Socorro began quite informally, with operators and their wives getting together at someone's house. "We started having meetings and somebody said we should formalize the organization," Aguilar said. That came on 1 May 1976, when nine amateurs adopted a Constitution and By-Laws for the "Socorro Amateur Radio Association." The Constitution and

By-Laws together comprised a mere two pages. The charter members were: William Dumke, Tom Sefranek, John Browne, Dick Bickers, Sammy Bickers, Jim Oty, Gerald Schmitt, Luis Aguilar, and David Shortess. Meetings were set for the first Saturday of each month, and dues were \$6.00 per year. The association, henceforth known as SARA, became formally affiliated with the American Radio Relay League (ARRL) on 19 July 1978.

The new club's first project was to build a 2-meter repeater to be placed on Socorro Peak (M Mountain). Dumke and Sefranek led this effort. Dumke built the RF portion of the repeater, largely from parts he had saved while working for Motorola. Sefranek designed and built the controller, allegedly using numerous parts "donated" by his employer, Lincoln Labs. The association purchased a cabinet and a set of Sinclair cavities to round out the equipment suite. With a collinear antenna donated to the organization, the equipment was ready for installation on the "front peak" of the mountain, in a building owned by the Socorro Electric Co-Op (Oty 2003).

Sometime in mid-1976, the intrepid SARA crew headed up the mountain, with the repeater loaded into the back of Sefranek's pickup truck. The last portion of the road, however, proved to be too steep a grade for the truck to make it. The hams had to wrestle the equipment out of the truck and into Shortess' jeep to ascend the final stretch of road. After the repeater was installed and on the air, there were numerous subsequent trips to make repairs as the system was debugged (Oty 2003, 2004).

By 1977, SARA was able to mount a very respectable Field Day effort, when members began a longstanding tradition of operating from Catron County's Datil Well Campground, some 60 miles west of Socorro. *El Defensor Chieftain* reported on that effort in its edition of 14 July 1977. The *Chieftain* article was accompanied by five photographs. Those appearing in the photos were Broadwell, George MacLeod, WB5TGR, Oty and his son Alan (who later became licensed), Sefranic, Dumke and Sam Armijo, WB5VIM.

That same *Chieftain* article also reported that SARA had held a licensing class, which had added six new hams to the 32 already present in town. Other activities in those early years of SARA

included club picnics and teaching classes for Boy Scouts (Oty 2003).

By July of 1979, SARA boasted 37 members, 23 from Socorro and 14 from out of town. There were an additional 12 hams in the area who were not members (Barreras 1994). In 1980, members gathered at El Camino restaurant to honor Bob Mitchell, K5WXR, on marking 50 years as a ham. Mitchell, who had been licensed in 1930 as W9FPO, had moved to Socorro during the early stages of the VLA's construction (Harden 1980).

In the early 1980s, SARA "hit the doldrums for several years," according to Oty. While some organized activity continued, almost no meetings were held. During this hiatus, Oty nonetheless continued to renew SARA's affiliation with ARRL, thus keeping the association officially "on the books" continuously until activity resumed.

Rebirth (1989)

SARA's "doldrums" came to an end in the summer of 1989. Luis Aguilar, WB5JMD, led a re-organization meeting at Jerry's Restaurant on California Street in August of 1989. About a dozen hams attended this meeting. The group kept the \$6.00 annual dues from the 1976 bylaws, and elected Aguilar the new president. Clarence Seagraves, AA5RH, was elected vice president. Meetings were set for the last Saturday of every month, at Jerry's Restaurant. The meetings were breakfast meetings, which, according to Felix Barreras, W5BX (then WB5LXA), "meant you got there at 8:00 and left about 11:30." (Barreras 1994)

That same year -- 1989 -- also saw the beginning of two long-lasting SARA traditions: the Socorro Hamfest and the annual Christmas Dinner. In November, the hamfest began as a modest tailgating event in the parking lot of New Mexico Tech's Macey Center. There was no raffle, no program of speakers, and no fee for the tailgating. The event drew about 30 out-of-town hams. Later, at Barreras' suggestion, SARA members decided to have a Christmas dinner. Kalman Oravec, AJ5B, a New Mexico Tech professor, arranged for the group to dine at the university's Student Union Building. (Barreras 1994)

By August of 1990, when the next SARA election was held, the organization boasted 26 members. That month, Seagraves became the

SARA Presidents

1977: Bill Dumke, WB5TCO

August 1989: Luis Aguilar, WB5JMD

August 1990: Clarence Seagraves, AA5RH

August 1991: Felix Barreras, WB5LXA
(later W5BX)

May 1993: Dave Finley, N1IRZ

May 1995: Monte Bateman, WB5RZX

May 1996: Howard Peavey, K9PV

May 1997: Al Braun, AC5BX

May 2000: Glenn Mauger, WB5OAF

May 2003: Ed Wood, KD5MFS

new president, Barreras the new vice-president, and Aguilar became secretary-treasurer. During the term of these officers, SARA members began a number of activities that marked the group as a full-service radio club and have proven long-lasting. These include establishment of the local Amateur Radio Emergency Service (ARES) and the weekly ARES net, the first Field Day under the revitalized organization, and the formation of a local Volunteer Examiner (VE) license testing team.

Also during the period 1990-1991, SARA outgrew the small meeting room at Jerry's Restaurant. Aguilar, along with Tom Rehnert, N5PLX, and Neal Hase, KI5HG, worked out a deal with the Socorro Electric Co-Op that allowed SARA to use a house owned by the Co-Op on Fifth Street, not only for meetings, but also as a permanent home for a club station and storing SARA equipment. With the switch to the "club house," meetings were moved from Saturday mornings to weekday evenings, and the second Wednesday of the month has been the standard meeting date for years.

On 17 November 1990, the second "Socorro, New Mexico, Swapfest" was held, again outside NM Tech's Macey Center. There still was no fee for tailgating or even for using tables provided by SARA, although the advertising flyer noted that "donations will be accepted." Among the attractions cited in the Swapfest flyer was "a scenic duck pond."

By the time the rejuvenated SARA had finished its first two years, the organization had blossomed into a robust, effective group that was supported by hams and respected by the local community. Over the next decade, SARA and individual Socorro hams would compile a distinguished record of achievement in numerous areas of Amateur Radio and public service.

In the late 1980s, the Tech Amateur Radio Association (TARA) was formed as a student organization at New Mexico Tech. This organization had its first home in South Hall, then, in 1992, got a room of its own in Presidents Hall on campus. A 1993 donation by former NMT President Larry Lattman, ex-K3OKE, financed the purchase of a new HF transceiver. (Oravec 2004) That same year, when Socorro hams decided to augment the Datil Field Day site with a second operation in town, the in-town station was designated as the TARA station. Since then, the tradition has continued that the remote Field Day station formally is the SARA station and the in-town one is the TARA station, though operators associated with both organizations freely help with either station.

TARA also has contributed as a partner to the Socorro Hamfest and other events, because, as a sanctioned University organization, it has access to Tech's facilities that otherwise would not be available.

As SARA grew and its activities expanded, officers and members recognized that it would be beneficial to incorporate and seek tax-exempt status. With that purpose in mind, a committee drafted a new set of bylaws, which were adopted by the membership in 1997.

SARA activities have been wide-ranging, providing Socorro hams with many ways to participate in on-the-air events, help their fellow amateurs, serve the community, and simply socialize among themselves. Let us now examine the variety of SARA's activities and accomplishments.

Repeaters in Socorro

Since the first expedition up M Mountain to install the repeater built by Bill Dumke and Tom Sefranek in 1976, the SARA repeater has been the most constant aspect of the organization's efforts. Even during the "doldrums" of the 1980s, when SARA was not holding meetings, local hams

SARA Repeater Callsigns

WR5xxx	1976
WB5TCO/RPT	1979
WB5TGR	
AA5RH	
KC5OLJ	1995
W5AQA	2004

still kept the repeater going. The modest dues paid by SARA members were not intended to support a repeater, so the machine was financed through most of the first two decades by donations. Over the years, dedicated members have given large amounts of their personal time and efforts to install, maintain and upgrade SARA's 2-meter repeater, now operating on 146.68/08 MHz.

The original frequency pair was 146.67/07 MHz. In addition to the RF section built by Dumke and the controller built by Sefranek, the system included a set of Sinclair duplexers and a cabinet. This system served continuously until 1994, but required many repair trips, particularly in its early days (Oty 2004).

The original repeater soon had the added feature of a direction-finding receiver system for detecting signals from aircraft Emergency Locator Transmitters (ELT). This came at the instigation of George McLeod, WB5TGR, who was heavily involved in search-and-rescue work at that time. That system only detected an ELT transmission once, and it turned out to be coming from an airplane parked in a hanger in Albuquerque. The ELT had been turned on by accident (Oty 2004).

SARA's repeater system has evolved through several generations of hardware. During the winter of 1991-92, the original antenna was replaced. Around the same time, the original homebrew controller was replaced with a commercial version. Also around 1992, the repeater was moved from the east peak to the west peak on M Mountain, to take advantage of free building space offered by NM Tech, in addition to free telephone service for the autopatch (Barreras 1994).

In 1992, SARA bought a used GE Mastr II mobile transceiver, and over the course of many months, worked on converting it into a repeater, a process successfully completed by numerous other clubs. Despite the success of others, the conversion proved tricky, and SARA members devoted many "work nights" to making the required changes in the Mastr II. During the conversion process, the older system was brought down from the mountain for repairs a time or two and continued to operate sporadically. In the spring of 1994, Monte (WB5RZX) and Jean (N5HZV) Bateman took the Mastr II to Roswell, where Ken Letcher, W5FYN, of Southwest Communications put the final tweaks on it and brought it up to specifications. After considerably more work on such items as battery backup systems, duplexers, etc., the Mastr II was installed on M Mountain as the main repeater on 10 November 1994.

The Mastr II system was initially well-received, but soon proved to have its weaknesses, particularly in receiving. By July of 1995, Bob Sparks, WB5QZD, had rejuvenated the original repeater, and it was taken up the mountain to replace the Mastr II. Jim Oty worked on the Mastr II, and discovered that its receiver board was bad. The repair was made, and Felix Barreras then integrated the Mastr II, the controller, the cavities and other equipment into a new rack. On 30 March 1996, the Mastr II system went back up the mountain.

The Mastr II system never gave reliable service for lengthy periods of time, so in 1997, SARA used funds raised by several successful hamfests to buy an all-new turnkey repeater system. In 2004, the 2-meter machine moved back to the east peak of M Mountain, providing better coverage to the center and south of the city.

The first 70 cm repeater for Socorro went on the air early in 1994. That machine was lent to the organization by George McLeod. Bob Sparks later worked on this machine, then put his own 70 cm repeater on the mountain, after first trying it out at his house. Sparks' machine went on the mountain on 10 November 1995, and there has been nearly-continuous 70 cm repeater service for Socorro since that date.

During the early 1990s, a digipeater on M Mountain provided packet service to Socorro hams, with links to Albuquerque, and from there to the rest of the world. Unfortunately, the digipeater

signal kept leaking into the 2-meter repeater's receiver. That, coupled with a lack of much enthusiasm for VHF packet operations, led to its removal after a short period of service.

Since Dumke and Sefranek built SARA's first repeater in 1976, many hams have made significant contributions to keeping Socorro's repeaters on the air. Several have taken a leadership role in this effort, devoting countless hours. These include, in addition to Dumke and Sefranek: Jim Oty, Felix Barreras, Bob Sparks, Luis Aguilar, and Dave Johnson, KB5YIW, who has served as principal coordinator for SARA's repeaters for more than a decade. Johnson served as coordinator during the battles with the Mastr II's gremlins and from that point on as changes and improvements were made to the SARA system. His position on the NM Tech faculty proved to be a valuable asset in gaining access to the Tech-controlled mountain for repeater work.

The SARA 2-meter repeater now has operated under several different callsigns. These callsigns, with their effective dates, are shown in the box on the facing page.

Field Days

Field Day, sponsored by the ARRL, began modestly in 1933 and has evolved into probably the most popular Amateur Radio event in the U.S. That year, the station with the top score logged 62 contacts. Today, stations at the top of the lists routinely log thousands of contacts during the event (Anders 1999). In 2004, more than 33,000 people participated in a Field Day that involved more than 2,200 stations (Henderson 2004).

As noted earlier, SARA first participated in Field Day in 1977, with a station set up at the Datil Well Campground in Catron County. The photos and story about SARA's Field Day station that appeared in *El Defensor Chieftain* probably were provided by SARA members eager to get the bonus points awarded for gaining publicity for the Field Day effort. The photos indicate an enthusiastic bunch of hams, and show that SARA's first Field Day station included both phone and CW transmitters. Jim Oty is shown running the phone rig, and Chuck Broadwell is pictured at the CW rig, sending code with one of the keyboards he designed for that purpose. Over the following decades, Socorro hams would see Broadwell build and test numerous electronic

keyboards and keyers for Morse Code as something of a "hobby within a hobby."

Datil Well Campground has been a mainstay of SARA's Field Day effort since that first year, though other sites have been used. Two of those other sites have become legendary over the years. One year, the group set up in an old railroad boxcar in Socorro's Sedillo Park. Those who participated in that Field Day have regaled listeners for years with stories of operating in the "sweatbox" that the boxcar resembled under the hot sun. In 1990, the first Field Day after SARA's reorganization, the group set up atop Mount Withington, a 10,000-foot-plus peak west of town. About eight SARA members braved the long, winding drive and very high winds. The winds turned the expedition into a near-disaster and SARA never has gone to Withington again (Barreras 1994, Oty 2003).

Since at least 1993, and probably since the Withington episode, SARA always has had a Field Day station at Datil Well. Beginning in 1993, a second station, closer to town, has been a standard feature. That year, in conjunction with TARA, the second station was operated in the yard north of NM Tech's Macey Center. This location was convenient both to members who could devote only limited time to Field Day and also to the public. In addition to the Field Day operations, the in-town SARA-TARA station also hosted a barbecue. In 1993, the two Field Day stations -- Datil Well and Macey Center -- attracted 34 licensed participants and numerous spectators. The June 1993 SARA Newsletter reported that the two stations together made nearly 1,000 contacts, including 49 states, four Canadian provinces and the Virgin Islands.

Having an in-town Field Day station in addition to the Datil Well operation proved popular with members, and the SARA-TARA team has run at least two Field Day stations since 1993. The barbecue also has become a regular feature, and has been extended to the Datil Well operation, too.

The north yard of Macey Center served as the in-town Field Day site from 1993 until 2001. The site offered the advantages of a convenient location, nearby bathrooms (when arrangements were made with NM Tech), and the reassurance of nighttime visits by NM Tech's Campus Police, who often joined the hams for the barbecue dinner. One problem that never seemed to be solved, however, was the automated sprinkler system.

Nearly every year, sometime after midnight, the hams on duty would hear the dreaded sound of industrial-strength sprinklers. What followed often resembled pandemonium, as the desperate operators threw whatever was available, including their own bodies, over the radio equipment to shield it from the spray. Equipment, tables, chairs, batteries and other gear got moved in record time to areas deemed safe. Afterwards, with the gear safe, those present could enjoy the humor in the situation, and cast around for whomever had assured them that year that NM Tech personnel would turn off the sprinklers.

In one memorable scene, Al Braun, AC5BX, attempted to stifle a large sprinkler, first by challenging it with an umbrella. The first direct hit from the powerful sprinkler destroyed his umbrella. Undeterred, Braun next tried to neutralize the sprinkler by putting a wooden box over it, then standing on the box. As the rest of the crew watched, the force of the sprinkler lifted the box and Al, casually throwing them aside.

In 2002, the Macey yard was torn up for a construction project, and the in-town Field Day operation was moved to Clarke Field, at the south end of Socorro. Clarke Field offered sheltered picnic tables and ample room for erecting antennas. It also lacks sprinklers. SARA members have been happy to keep the operation at Clarke Field since.

For at least two years -- 1995 and 1996 -- SARA members operated not two, but three Field Day stations. The third station was operated by QRPers, who set up low- power stations in the hills east of Socorro.

Both the in-town and the Datil Well Field Day operations typically have racked up several hundred contacts each. At Datil Well, the operation usually has been a single- transmitter entry, running phone only. In town, the station always has been a two-transmitter entry, running both phone and CW. From time to time, other modes, such as packet and satellite, have been used to make a limited number of Field Day contacts. The Socorro Field Day operations also receive publicity in the local newspapers, and have been visited by officials such as the city's Mayor and our State Representative.

The SARA-TARA Field Day stations have used a variety of callsigns over the years, including those of individual members. In 1995,

with the revival of the club-station licenses, the stations could use club callsigns. In 2004, the SARA station at Datil Well used W5AQA, putting Donald Cook's 1930s call back on the HF bands.

The Socorro Hamfest

The Socorro Hamfest began as an informal tailgating event held in the Macey Center parking lot on the NM Tech campus in November of 1989, shortly after the association's reorganization. There were no lectures, no commercial vendors, and no fees for tailgating. The event drew about 30 out-of-town hams (Barreras 1994). The second hamfest, on 17 November 1990, was advertised in a flyer as the "Socorro, New Mexico Swapfest," and also was held in the Macey Center parking lot.

In 1991, Felix Barreras was elected SARA President and made expansion of the hamfest one of his top priorities. His first item of business was to secure an indoor venue. Barreras doggedly pursued the City's permission to use its facility at Finley Gym. It took him several meetings with Socorro's Mayor Ravi Bhasker and City Clerk Pat Salome, but Barreras finally won permission for SARA to hold its hamfest at the gym.

With the location secured, Barreras next worked on putting together an event with all the features hams expect. The local VE team agreed to hold a testing session at the hamfest. SARA's members agreed to buy two handheld radios for raffle prizes. Barreras invited the state ARRL Emergency Coordinator and Section Manager to speak at the meeting, and they agreed. Three commercial vendors attended and a major manufacturer sent a representative to display their latest rigs. A talk-in station directed incoming out-of-towners to the site. Jim Oty set up and operated an HF station during the hamfest. (Barreras 1994)

Everyone's efforts paid off. The 1991 Socorro Hamfest, on 23 November of that year, drew about 350 hams from New Mexico and surrounding states. To Barreras' delight, the Mayor showed up just when the crowd was at its height and clearly was impressed with the event. From that time, the City government has supported SARA's hamfest in various ways, from providing Finley Gym for several years, to putting up banners on California Street, and most importantly, underwriting the cost of printing and mailing hamfest flyers to every ham in New Mexico.

On 21 November 1992, the Socorro Hamfest again was held in Finley Gym. The event featured the same attractions as the year before. The flyer was more elaborate this time and included artwork. Unfortunately, attendance was hurt by a factor that would recur in later years -- the weather. Socorro's weather was nothing that would impede travel, but elsewhere in the state, heavy snows closed roads and certainly discouraged out-of-town hams from heading for Socorro. Nonetheless, the event came out with a small profit.

The following year, the weather cooperated. On 20 November 1993, the hamfest, again held in Finley Gym, drew more than 500 hams. Once again, there was a raffle, a talk-in station, an HF station, and a VE session. The lecture program featured talks on ARRL news, ARES, safety in the hamshack, and learning Morse Code. The commercial vendors returned and did a good business. Mayor Bhasker visited this event and once again arrived just when the crowd was at its peak. SARA's treasurer also was happy, as the raffle and table rentals netted a \$931 profit for the association.

The next year was even better. In the Spring of 1994, SARA applied for ARRL sanctioning of the hamfest and the League approved the request. With ARRL sanctioning came listing in League publications, including *QST*, free use of the ARRL database for mailing labels, and free books for door prizes. In addition to a full lineup of speakers and forums, the event featured a display of vintage radio equipment and a giveaway table. Commercial vendors added to the prizes bought by the association and donated by ARRL, so that during the peak attendance period, prizes were given out every half hour. The 1994 event set a new record for attendance, number of vendors, and, importantly for SARA, raffle-ticket sales. Between November and December of 1994, the treasury jumped by \$2,120, almost all of which came from the hamfest.

Despite the success of the hamfests at Finley Gym, SARA members began looking for a new venue. Out-of-town attendees were complaining about the lack of parking at the gym, and an unfortunate breakdown in the plumbing in 1994 had tainted the building's reputation among some hams. In early 1995, SARA members started inquiring around town about holding the event elsewhere. Various locations were considered,

and each had its pros and cons. Over the next eight years, the Socorro Hamfest would be held in four different locations.

Socorro High School was the site of the 1995 hamfest, which included as new features a demonstration of amateur-satellite communications and a QRP forum and building contest. The hamfest once again was an ARRL-sanctioned event, as have been all subsequent Socorro hamfests. The high school provided food concessions. Attendance was good and the SARA treasury once again was bolstered by hamfest profits.

While the high school facilities were good, and parking was adequate, the school administration had moved the hamfest at the last minute from the gym to the smaller cafeteria to accommodate a basketball game. In discussions after the hamfest, the school officials could not assure SARA that such a room switch would not occur again. SARA's members decided to look for another site.

The 1996 hamfest moved to the NM Tech gym. The primary complaints heard about this site centered around the distance of the parking lots from the gym and the need to walk to nearby classrooms for the lectures and VE session. Because of these complaints, the 1997 and 1998 hamfests moved to the gym at Sarracino Middle School.

The 1996 and 1997 events were successful, with good attendance and more profits for the SARA treasury. In 1998, however, the weather once again turned against Socorro's hams. A major winter storm blanketed the northern half of the state with snow, and virtually no hams from Albuquerque or points north even left their houses. Some called in their regrets via the SARA repeater. SARA members put in long hours staffing the raffle desk, holding the prize drawings, lecturing, and running the VE session, all for a very meager crowd. At the end of the day, after paying for the raffle prizes and the school's janitorial fees, SARA had lost money on the hamfest.

The discouraging experience of 1998 spurred a determination among SARA members to make the 1999 event better than ever. First, in an attempt to improve the odds with the weather, members decided to try moving the hamfest earlier in the year, toward the end of October

rather than late November as in the past. Conflicts with other events only allowed moving to mid-November (13 Nov) for 1999. Next, members decided to pay expenses to bring in a nationally-known speaker. Two events were scheduled on the Friday before the Saturday hamfest -- a guided tour of the VLA and an evening Hamfest Banquet.

With these changes decided, SARA members once again cast about for a hamfest location. At Sarracino, the school had been unable to commit to a date before the Fall, because of uncertainty about the basketball schedule. SARA needed to set a date and start advertising it early, This problem took the 1999 hamfest back to the NM Tech gym.

The featured speaker was Riley Hollingsworth, K4ZDH, from the FCC. A staff attorney for the commission, Hollingsworth had recently begun vigorously enforcing FCC regulations on the ham bands. This brought him near-hero status among the majority of hams, tired of years of official neglect of flagrant violations and poor operating by a few "bad apples." He had readily accepted SARA's invitation to speak.

Hollingsworth headed up a full program of lectures, and the usual ARRL Forum attracted not only the NM Section Manager, Joe Knight, W5PDY, but also the Rocky Mountain Division Director, Walt Stinson, W0CP. The Friday VLA tour and the Friday evening banquet both were well attended. The weather cooperated, and total attendance was more than 500 hams, and possibly more than 600.

The 2000 hamfest was held at the NM Tech gym and was successful, though, lacking a nationally-known speaker, was not as well attended as the 1999 event. Once again, visitors complained about the parking situation, so SARA members searched for still another site. In 2001, the association negotiated with the local National Guard detachment for the use of their armory on U.S. 60, west of town. The armory seemed to fill the bill, with the rooms needed for the indoor events and convenient parking for tailgating. The date was set and planning got underway.

Then came the terrorist attacks of September 11, 2001. The National Guard quickly surrounded their armory's property with barbed wire and dirt barricades. Holding the hamfest there was impossible under the tightened security conditions. SARA had to scramble on short notice and

rescheduled the hamfest for the NM Tech gym once again.

SARA found a new home for the hamfest in 2002. That year, the event was held at the NM State Fire Fighters Academy. This venue offered a large garage area for the swapfest and ample classrooms for the lectures and the VE session. In addition, tailgating could be accommodated. The state ARRL Emergency Coordinator held a statewide ARES meeting in conjunction with the Socorro Hamfest in 2002 and has repeated this practice the next two years.

Socorro's central location in the state makes it an ideal place for a hamfest that serves all of New Mexico's hams. The Socorro Hamfest typically draws hams from all regions of New Mexico as well as from all the adjoining states. The commercial vendors who return year after year, particularly Radcomm Radio from Texas, always do a good business. The success of the hamfest depends on huge amounts of volunteer work by SARA's members. Planning and arrangements must begin months before the event. The day before the hamfest is busy, as members set up the facilities and help vendors set up their concessions. During the day, SARA members fill many vital roles, from directing traffic to running the raffle. It is a tribute to the dedication of SARA's members that the hamfest has grown from an informal morning of tailgating to an annual event looked forward to by hundreds of hams in the Southwest, and has been held continuously for a decade and a half.

Public Service

From SARA's inception, its members were prepared to use their ham equipment and expertise in the public interest. The SARA repeater always has been available for search-and-rescue training and operations, and, as mentioned in the section on the repeater, that machine once was equipped to locate emergency transmissions from downed aircraft.

Socorro's formal Amateur Radio Emergency Service (ARES) organization was formed in 1990. The first Emergency Coordinator was Tim Younts, KS5H, a student at NM Tech. With a formal organization, the weekly ARES net on Wednesday night began, and gave local hams training and practice in emergency communication techniques (Barreras 1994).

In September of 1990, Younts moved out of town, and Bill Brundage, K8HUUH, replaced him as Emergency Coordinator. Younts had gotten Socorro County's ARES group off to a good start, with 11 members enrolled, and Brundage took over an ambitious agenda.

In addition to serving as Net Control Station for the weekly ARES net and arranging for other hams to get practice in that position, Brundage made contact with the city's fire chief to begin working out a formal arrangement with local government for ARES participation in emergency communications. On 4 November 1990, four ARES hams put up a 75/40 meter dipole antenna at the city's Emergency Operations Center at the main fire house. Later that month, Brundage and two other ARES members met with Fire Chief Bob Brunson to plan the formal agreement with the City and discuss drills, meetings, call-in procedures, and other aspects of cooperation between ARES and the City. (Brundage 1990)

By mid-December 1990, Socorro County ARES had a calling tree for activating its members, and began planning for a major statewide Simulated Emergency Test. This test was based on a hypothetical earthquake registering 9.2 on the Richter scale occurring just north of Socorro. The scenario included destruction of all shelter in Socorro, a train derailment in Albuquerque with a radioactive leak, and the dam at Elephant Butte cracked and expected to fail soon, sending the entire lake downstream. The test came on 29 December, and six Socorro ARES members participated. All participants handled simulated emergency messages. Message traffic was handled on 2 meters locally, and communication was maintained with the rest of the state on 40 meters.

Throughout 1991, the ARES net was active, and contact continued with the City. Members kept 2-meter capability available at the Emergency Operations Center. On 2 December 1991, the Memo of Understanding between the Socorro Fire Department and Socorro County ARES was signed.

Brundage continued with training and organizing activities, including running a transmitter hunt for local hams, until he turned over the Emergency Coordinator duties to Paul Rhodes, N5YGC, in July of 1992. Rhodes served in that capacity for several years.

Through the remainder of the 1990s, the ARES net continued as a regular feature of Socorro amateur activity, with several hams serving as net control. The most stalwart net-control operator through the 1990s and into the following decade has been Sandy Braun, KB5YIX. Participation in the ARES net remained steady, with check-ins numbering from a handful of hams to more than a dozen. While some time was devoted to message-handling practice and other formal training, the net for the most part was a rather informal information-exchange medium in which local hams passed along meeting dates, news about club members, and arranged details of other ham activities.

In August 1996, several local hams participated in another statewide disaster drill, this one also based on a scenario of a major earthquake north of Socorro.

Following the terrorist attacks of September 11, 2001, hams across the nation began to take their role as emergency communicators much more seriously. The events of that day spurred Socorro's hams to re-assess their emergency capabilities and update their plans and organization for helping the community in case of a disaster, either natural or man-made. In 2002, Jon Spargo, KC5NTW, NRAO's Safety Officer, became SARA's Emergency Coordinator. Spargo re-instituted formal contact with the statewide ARES organization, inventoried the emergency capabilities of local hams, and coordinated the adoption of a set of priority actions needed to make the local ARES group more effective.

Spargo also began prodding local government agencies to lay the groundwork for better emergency response. He spurred the formation of a Local Emergency Planning Committee for the City and County, and became vice-chair of that committee. In this role, he was able to actively promote a prominent role for ARES and ham radio in local emergency planning. An important landmark in his efforts came when he was able to arrange for NRAO to donate, and the County to accept, a surplus travel trailer in 2004. SARA members then began the process of repairing, adapting and equipping the trailer for use as a mobile emergency communications command post.

SARA members became highly visible to the community in the role of support communicators for local athletic and recreational events. Socorro's

Fat Tire Fiesta, a mountain-biking event drawing participants from throughout the Southwest, began in 1992, and local hams provided communications for that first event and all subsequent ones. The Fat Tire Fiesta includes numerous bike rides around Socorro County, some in remote areas where communication is an important element of safety. Over the years, the hams supporting this event have helped the organizers in accounting for participants and even by locating lost riders. The event's organizers have consistently and publicly recognized the contributions of SARA's members.

Socorro hams also provided similar support for the M Mountain Duathlon (now defunct), and a very popular triathlon, first named the Socorro Sprint Triathlon and now dubbed the Socorro Chile Harvest Triathlon. The Triathlon, which has increased in participation every year and now is a major feature among Southwest athletic events, has relied heavily on the ham communicators. One year, the hams were able to detect, then alert organizers to the fact that the leading pack of participants had cut short the course, resulting in time penalties for those participants.

In 1993, at the urging of Doug West, AB5WT, SARA joined the state's "Adopt-a-Highway" program, agreeing to pick up trash along a mile of I-25 north of town. In June of that year, 15 hams labored for nearly five hours to pick up 144 bags of trash plus an assortment of large items such as parts of tires, hubcaps, and an entire car hood. In return for the volunteer labor, the state erected signs at both ends of "our" mile that included both the name of the organization and the frequency of the 2-meter repeater. This program continued, with semi-annual cleanup sessions, until the state discontinued the program on the Interstate in 2004.

In addition to ham-related service in other areas, such as helping Scouts with Jamboree on the Air stations, Socorro's hams have participated as individuals in numerous community activities and organizations, making ham radio highly visible to the community. All these contributions have paid off for ham radio. SARA was recognized as the 1995 Organization of the Year by the Socorro County Chamber of Commerce. Later, when both the City and the County adopted ordinances regulating radio towers, hams were specifically exempted from the regulations.

Classes, Exam Sessions, and Services to Members

A licensing class for prospective hams apparently was one of SARA's first activities after its organization. The 1977 *El Defensor Chieftain* story about that year's Field Day operation reported that a licensing class that Spring had produced six new hams, and that another class was planned for the following Spring. Members from the 1970s recall classes as a regular feature of the "pre-doldrums" SARA.

At that time, amateur examinations were administered by Federal Communications Commission (FCC) employees. The nearest FCC offices to Socorro were Denver and Dallas, where exams were offered twice each month. FCC staffers from the Denver office came to Albuquerque twice a year to offer exams there (Clift 1983).

In the early 1980s, the FCC, along with many other Federal agencies, was forced to look for ways to operate more efficiently. One of the FCC's early cost-cutting measures was to reduce its amateur-license testing program. In 1982, a bill sponsored by Sen. Barry Goldwater, K7UGA, authorized the Commission to use volunteer hams to administer amateur exams. The following year, Goldwater sponsored another bill that allowed volunteer examiners to recoup their costs through exam fees. With both bills enacted into law, the FCC got out of the testing business in 1984, and the current Volunteer Examiner (VE) program took over all ham testing that year (Jahnke & Irwin 2000).

After SARA's reorganization, Kalman Oravec, AJ5B, led the formation of a local VE team, accredited by the ARRL VE Coordinator. The first Socorro VE testing session was held on 23 November 1991, in conjunction with the hamfest in Finley Gym. This was the year in which the Morse Code requirement had been removed from the Technician Class license, and that first VE session produced 10 new Technicians, one Technician with code (Tech Plus), and five upgrades to Amateur Extra Class (Oravec 2004). A ham from Bosque Farms, Les Lines, K5SDF, brought code-testing equipment to this session (Barreras 1994).

The next Socorro VE session came on 16 April 1992, and from that time, a local VE session has been offered at least once, and often twice,

every year. The Socorro Hamfest has included a VE session since 1991. Through 2003, the Socorro VE team administered 781 test elements to 482 candidates, 259 of whom received either a new license or an upgrade. Exam candidates at Socorro test sessions came from New Mexico, Texas, Washington, California, Missouri, and Arizona. The team has included 22 Volunteer Examiners (Oravec 2004). The youngest new ham to come out of a Socorro VE session was David Best, 10, son of Michael Best, NE7H.

In 1993, Barreras constructed a code-testing apparatus that could be connected to a tape recorder and provided headphones and an individual volume control for each applicant (Barreras 1994).

The year 1991 saw the first licensing class provided by the reorganized SARA. Art Sittler, KF5HQ, taught that class, and Aguilar assisted. Sittler and Aguilar taught another class in 1992. (Barreras 1994)

Monte Bateman, WB5RZX, a postdoctoral researcher at NM Tech, taught the next class, starting in January of 1994. Doug West, then KB5SZZ, and Chuck Broadwell, W5UXH, assisted in this class, which produced 12 new hams. In January 1995, Bateman led another class. The VE session at the end of March produced nine new hams.

At the end of 1994, through classes and local exam sessions, Socorro achieved the milestone of having a full one percent of the city's population licensed as hams. The national rate was only one-quarter of one percent. Later efforts would bring Socorro's ham percentage to 1.2 percent, nearly five times the national average.

In February of 1996, SARA offered another class, this time aimed at already-licensed hams wanting to upgrade their licenses. This class also was led by Bateman, with assistance from Broadwell, West, and this author (N1IRZ).

Bateman, in addition to working as an atmospheric-physics researcher, also taught at NM Tech and was popular among students. He brought a natural knack for teaching as well as an enthusiasm for ham radio to his licensing classes. When he finished his postdoctoral work and left town, he proved to be a hard act to follow, and there was a hiatus of several years in local licensing classes.

One obstacle to both prospective instructors and students was the need to commit one night a week for eight weeks to the class, as had been done in the past. As the codeless Technician license exploded in popularity throughout the 1990s and became the normal entry point to ham radio, clubs around the country began to experiment with licensing classes that lasted for a single weekend.

SARA members discussed holding a one-weekend licensing class for several years, but the plans didn't come together until 2004. The spur came when a local Boy Scout troop inquired about lessons. SARA picked the weekend of 23-25 April 2004, and planned a grueling schedule starting on Friday night and ending with a VE session on Sunday night. Five SARA members volunteered to instruct -- Dave Finley, Glenn Mauger, Dave Johnson, Jon Spargo and Bill Brundage. The instructors divided up the curriculum and broke up the lectures with demonstrations. On the Sunday night, 10 new hams, eight of them Boy Scouts, emerged from the VE session.

When SARA got its room in the Socorro Electric Co-Op house, members soon began assembling a club station. By 1991, the clubhouse station boasted a 2-meter transceiver loaned by Jim Oty, a vacuum-tube HF transceiver loaned by Tom Rehnert, N5PLX, a receiver, transmitter and linear amplifier donated by George MacLeod, and a variety of accessories. The Co-Op put up a pole for mounting antennas, and the station was in business (Barreras 1994).

Over the next few years, however, this equipment found little use, probably because most members either had forgotten or never learned how to tune up vacuum-tube transmitting equipment. With proceeds from successful hamfests, SARA bought an all-new HF station, including transceiver, antenna tuner and power supply, in 1995. That station saw some use at the clubhouse by members participating in contests or just informal operating, but the principal use for this equipment has been for Field Days.

For just plain fun and socializing, SARA has continued the tradition of Christmas dinners begun in 1989. In the early 1990s, several SARA picnics were held, usually in the Spring. Possibly as a vestige of the old Saturday meetings, SARA members have gathered informally on Saturday mornings for years -- first at a local doughnut

shop, then after that establishment folded, at the Socorro McDonalds.

Special Events, Publicity, and Fame

In the efforts to recruit new hams, SARA members have generally ensured that activities such as licensing classes, VE sessions, and Field Day were publicized in the local community, through the newspapers, the local radio station, and the NM Tech campus calendars. As the hamfest became a statewide event, it has been advertised through flyers mailed to every amateur licensee in New Mexico. In addition, SARA efforts also have brought both local and statewide news-media coverage for the hamfest.

Socorro's ham-radio fame, however, has not been limited to New Mexico. The area's hams have, through a variety of highly-visible activities, put Socorro, and SARA, in a national, and even world-wide limelight. Socorro hams have received prominent attention for special-event stations, for leadership in specialty areas of amateur radio, and for writing and lecturing to audiences around the nation.

In 1993, the National Radio Astronomy Observatory held a formal dedication for the Very Long Baseline Array (VLBA), a continent-wide system of radio telescopes headquartered at NRAO's Socorro operations center. Because of the long and close association between ham radio and radio astronomy, local hams decided to mark the occasion with a special-event station. Using the callsign of Paul Harden, NA5N, the station was on the air on 20 and 21 August, 1993. Harden, who also lent his callsign for several Field Day operations, contributed the resources of his print shop to produce a unique QSL card for this event.

The VLBA special event received publicity in national ham publications and through ham-related Internet services. The station was set up on the top floor of NRAO's Array Operations Center on the NM Tech campus. Antennas of various types were placed on the AOC's roof. The VLBA dedication ceremony was held on the AOC's ground floor, and following the festivities, numerous out-of-town visitors stopped by the ham station to watch. Radio astronomy, as might be expected, is well populated with hams, so many of the visitors took a special interest in the event.

QSL cards from around the country flowed into Socorro for months after this event.

1995 was the 50th anniversary of the end of World War II, and throughout the year, ceremonies around the globe marked the anniversaries of landmark events such as city liberations, the end of the war in Europe, and other milestones. News media worldwide carried feature stories about the war and the reminiscences of veterans and survivors of the conflict. Socorro County has its own special place in the history of that conflict, for it was a mere 36 miles southeast of town that the world's first atomic bomb was tested on 16 July 1945. Even at the time of this writing (2005), there still are residents of Socorro who remember seeing the bomb's predawn flash.

The site of the explosion, Trinity Site, now lies within the U.S. Army's White Sands Missile Range, and Army officials prepared for a special open house on 16 July. Socorro hams decided to operate a special-event station during the open house, and quickly won approval from missile-range officials. By March, planning for the ham operation was underway, and SARA began publicizing the event. Eventually, advance publicity about the ham operation at Trinity would spread around the world via the Internet, *QST* magazine, and even general newspapers.

SARA's special-event station was one of many aspects to the anniversary, which brought people from around the world to Socorro. There were historical displays, open houses, and lectures marking the event. Socorro's motels were booked solid for the anniversary weekend.

On Saturday, 15 July, SARA members were met at the missile range's Stallion Gate and escorted to Trinity Site's Ground Zero late in the afternoon. They set up antennas and tents, then returned to town. The next day, the hams were let in the gate at 3:00 a.m., then proceeded to hook up their rigs and get on the air. In addition to the on-air operation, SARA members also set up a display of World War II-vintage radio equipment, including transmitters, telegraph keys and "bugs." Once again, the operation was using Harden's NA5N callsign. For this event, Harden had printed not only QSL certificates for hams who worked the station but also "I was there" certificates to hand out to all visitors. Both documents were quite impressive, with a distinctive Trinity mushroom-cloud background. Harden also brought a unique memento -- a telegraph key his father, a Navy

radioman, had used to put the Navy station on Guam back on the air after the island was recaptured from the Japanese in 1944.

At 5:00 a.m. on 16 July, the gates opened to the public, so that early birds could be on site for the exact moment of the anniversary, at 5:29:45. When the gates opened, the SARA station went on the air. Soon, the site was filled with people. News crews from around the world had arrived, and many found the radio operation and the vintage-equipment display very interesting. Several SARA members were interviewed by reporters, and video of the ham operation got widespread air time.

When the day was over, 5,800 visitors had come to the site. The SARA area was popular, and Socorro hams got to talk and explain ham radio to thousands of people. Many of the members found it particularly rewarding to hear WWII veterans exclaim "I used to use one of those" at the vintage-equipment display. White Sands officials were favorably impressed, and remarked that the SARA effort had significantly improved the day's experience for the tourists.

The on-air operation went well, with the operators working hams from across the U.S. and around the world, including even a couple of Japanese hams. The only downside came in midmorning, when a large military communications van drove onsite and, staffed by some hams from Alamogordo, began creating considerable interference. The Alamogordo group had only thought of operating onsite after reading the *QST* notice of SARA's operation. Despite their intrusion, the SARA station continued to operate and, with its certificate handouts and equipment display, remained a magnet for tourists.

Socorro hams managed to get some of the publicity for another special event in 2000, even though it was held in West Virginia. NRAO again was dedicating a new telescope, this time the Robert C. Byrd Green Bank Telescope, a giant single dish with more than two acres of collecting area. The ham special event used the callsign of Grote Reber, W9GFZ. This historic callsign had been obtained in 1997, when Dave Finley and Bill Brundage formed the "NRAO Amateur Radio Club," got a club-station license, then obtained Reber's old call through the FCC's Vanity Callsign Program. Finley traveled to Green Bank to work in his capacity as an NRAO public information officer, and put W9GFZ on the air for the first time

since the 1930s, working Gary Anderson, W8IVF, a Green Bank ham, for the official first contact. Finley also had written an article about the new telescope for *QST*. Some Socorro hams worked the Green Bank special-event station, which had as one of its operators a Nobel Prize recipient, Dr. Joe Taylor, K1JT, a Princeton University astrophysicist.

In the mid-1990s, low-power HF operation with five watts or less of transmitter power, known as QRP operation, gained dramatically in popularity. The attractions were the challenge of working DX with low power and the fun of building and operating simple rigs in an era of expensive, microprocessor-driven equipment.

By 1994, the QRP bug had bitten several Socorro hams. The following year, Socorro got wide publicity in QRP circles when a group of SARA hams went to the top of South Baldy to compete in the Northern California QRP Club's (Norcal) first "QRP to the Field" event on 1 April 1995. Paul Harden, Dave Finley, Chuck Broadwell, and Doug West braved snowpacked roads and cold weather to get on the air from the 10,000-foot-plus peak. Howard Peavy, K9PV, set up his QRP station at a campground some distance from the summit. With wire antennas strung from abandoned buildings and makeshift poles, the QRPers contacted other contesters from coast to coast before the biting cold forced them from the peak. By the end of the operation, they were sending Morse Code with gloves on!

Harden, who was a prolific contributor to QRP news groups and publications, wrote a humor-laced account of the expedition that was published, along with photos by Finley, in Norcal's national magazine, *QRPP*. Later, another version of the account appeared in a column in *CQ* magazine. Socorro suddenly was famous among QRPers. Harden and others followed the next year by putting the county's ghost town of Riley on the air for QRP to the Field, and another humorous account of dealing with the elements got wide circulation.

Harden continued to contribute widely to QRP publications and has lectured at QRP forums at hamfests across the nation. His efforts led to induction in the QRP Amateur Radio Club International's QRP Hall of Fame.

Getting published in national publications almost has become routine for Socorro hams.

Harden wrote, illustrated, and published a book, *Data Book for Homebrewers and QRPers*, that debuted at the 1996 Dayton Hamvention. Broadwell, always searching for the perfect, full break-in, CW rig, published a fix for one rig's frequency-drift problem in *QST*. Finley, who had stumbled onto a long-lost method of Morse Code training while trying to upgrade his license, first lectured on the technique at the 1993 Socorro Hamfest, then wrote magazine articles on the topic that were published in 1995 and 1996. In 1997, MFJ Enterprises published his book, *Morse Code: Breaking the Barrier*, which remains in print. When Jon Spargo received an honorary degree from New Mexico Tech in 2001, the honor was noted in *QST*.

The December 1996 issue of *QST* included an article describing SARA and its many activities as cause for dubbing Socorro "Ham City, USA." Nearly a decade later, the organization remains active and has built even further on its reputation for service to the community. Socorro is unique in many ways among small American towns, and its dedicated corps of amateur-radio operators is an important part of the town's vitality and appeal. SARA has a proud legacy that can inspire the Socorro hams of the 21st Century to enjoy their hobby, serve their fellow citizens, and advance amateur radio.

Let's keep up the good work, and let's keep it fun!

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