

## The Hurricane Canal

Nearly a dozen communities in three states depend on the Virgin River for irrigation water. Of these, Hurricane occupies possibly the largest tract of arable land. It was, however, the last to be settled. Early settlers to the region looked longingly at the expanse of easily tillable soil but limited by the tools and materials available at the time, the task of bringing water to it seemed impossible. The stubborn men who finally accomplished the task have won the respect and awe of future generations who understand what they faced.

Settlement along the upper Virgin River began with Virgin City in 1859 and soon villages had taken over the available tillable land within easy access to irrigation water. Settlement coincided with severe flooding and the newly ploughed ground was subject to devastating erosion. At least half the soil was soon gone and probably less than 500 acres of land were available to feed the growing population. The area's future was bleak indeed; young people were the main potential export.

Two parcels of land, the Hurricane and LaVerkin benches on opposite sides of the river, offered hope but both entailed hanging canals and boring tunnels along the steep-walled Pah Tempe Canyon that cuts through porous limestone-related rock. A land company had a canal built to the much smaller and lower LaVerkin Bench that was completed in 1891. Although plagued with difficulties as a conveyer of water, it no doubt gave strong impetus to digging the longer, higher and far more difficult Hurricane Canal.

A canal to Hurricane Bench had been declared unfeasible by such experts as John R. Young, son of Brigham, and I.C. McFarland, who was later to become the canal's surveyor. James Jepson and John Steele decided in 1893 to make their own study. The presence of the LaVerkin Canal as a referent made their task much easier. Two major questions confronted them: could a diversion dam be built high enough on the river to irrigate sufficient acres to support a viable community; and was it practical to "hang" a canal along the steep, unstable, treacherous canyon wall? They were correct in answering, "yes" to the first; it would irrigate over 2,000 acres. They were wrong on the second though; it took far

longer and cost far more than they had estimated. They called a meeting at the obvious location for a diversion dam and convinced most of their guests that a canal project was feasible. The Hurricane Canal Company was soon formed and digging got underway on a canal seven and one-half miles in length, four feet deep, eight feet wide at the bottom and twelve feet at the top, with a gradient of one and one-fourth inches per rod.

During canal construction, segments were contracted out to local men who took their pay in canal stock, difficult terrain fetching greater pay to the contractor than easier sections. Practically all work was done during cold months when men could be away from their farms and it was hand labor. Tools were picks, shovels, wheelbarrows and hand drills for boring into rock. Black powder for blasting could be produced locally. It will not shatter rocks however. Dynamite, or its variant, giant powder, was necessary but that took money. The most effective low-cost way to break up boulders during cold weather was to build a fire next to the targeted rock. Cold water dashed against the hot limestone rock would fracture it. Wooden flumes to convey the water across the heads of side canyons were another feature requiring special skill. Flumes needed no liner if high quality well-dried lumber was placed close together during construction. Leaks that squirted and dribbled soon pinched off as soon as water started flowing and that caused the wood to swell.

Work began the late fall of 1893 about the same time as an economic depression set in. Silver mines in Nevada closed; markets for local produce evaporated. Local farmers and ranchers could barely survive. Out-of-work miners drifted through who were willing to work for barely more than food. Their expertise with explosives was vital in digging the twelve or so tunnels.

A liner impervious to water was essential if the canal was to carry a stream. Both bagasse from sorghum cane and lint from the Washington Cotton Mill mixed with mud were used as a liner for the LaVerkin Canal. A more successful liner made of juniper bark mixed with mud helped hold water in the Hurricane Canal. Portland Cement, still exotic and expensive when the canals were built, was used beginning in 1910 to strengthen parts of the LaVerkin Canal and tunnel. It replaced mud or clay liners in both canals following World War II.

The projected four years for construction dragged into eight. No work was done during two winters; once because of a flu epidemic (la grippe) and once because a previous spring frost killed all the fruit, thus farmers couldn't afford to take time off during the next winter.

Desperately, the canal board petitioned the Church of Jesus Christ to buy \$20,000 worth of shares. Although short of cash, the Church had helped with other projects and, under President Woodruff's leadership, was currently underwriting an irrigation project on the Sevier River. Their bid was rejected however. Besides lack of funds, the negative decision was probably based on knowledge that experts had declared the canal to be ill conceived in the first place. Getting turned down was a blow to local morale and by 1901 only ten disheartened men were hacking away at the canal. June 18, 1902 at the board's request, James Jepson went to church headquarters to make a bid for at least a \$5,000.00 stock purchase that would cover at least one-fourth of the \$20,000.00 needed to complete the canal. The now President Joseph F. Smith was moved by Jepson's eloquent appeal and upon discovering that the local villages had paid slightly more than \$5,000.00 in tithing the previous year, led the Quorum in buying \$5,000.00 worth of stock, to be purchased in one-quarter increments according to how much was invested locally.

The money bought explosives for drilling tunnels, lumber for making flumes, etc and it was a shot of adrenaline to discouraged stockholders. Water reached the land August 6, 1904. Planting had to wait for almost two years until water could cause the soil to settle approximately three feet. During this time gullies were filled in, auxiliary canals and ditches dug, roads laid out, fences put up, barns and corrals built and as soon as possible, shade trees were planted along ditch banks.

No deaths resulted from construction accidents. This in spite of the obvious risks plus a seemingly foolhardy practice; when dynamite charges failed to go off, the explosive was dug out and reused.

Each participant who completed his assessments was awarded twenty acres of farmland and a one-acre plus lot in town on which to build a home. At that time, twenty acres was deemed to be sufficient for one family. Compared to what they were used to of course, twenty acres

seemed an endless expanse. The town lot accommodated a large vegetable garden, fruit and nut trees, an outdoor privy, a barnyard inhabited by milk cows, horses, pigs, chickens and in summers, thousands of English sparrows. Countless houseflies gave equal attention to barnyard activities and to providing a background hum within the home itself.

A canal dug from porous soil and rock, perched along unstable canyon wall, and vulnerable to cascading water from summer thundershowers required constant attention. If a break occurred during the growing season, repairing it was a life or death proposition. Accordingly, a ditch rider was always on duty. He routinely made a daily trip by horseback up along the canal bank to the point of origin. When thunderstorms struck late at night up the canyon, he was on his way. How horse and rider survived these midnight journeys is a miracle in itself. One man, Frank Lee, did die when a log he was pulling from the canal by use of his horse tumbled down and struck him.

Virgin, Grafton and Rockville provided most of the new citizens. The first homes were crude lumber structures built somewhat to the rear of the lot. With the family in place, work could begin on a permanent home to the front and when it was completed, the temporary quarters became a granary or a harness shop. Probably the first church meetings were held in the bowery where Heritage Park is located. When the Bradshaw home, now the Bradshaw House Museum, was completed, it hosted both church and school. Hurricane did not rate a brick school building until 1919. From then on local youth no longer had to go to Cedar City or St. George to complete senior high school.

Electricity came to Hurricane prior to 1920. Within ten years, a water line brought fresh water from Toquerville Springs and people no longer had to haul water up from the river or store canal water in cisterns. Bridges plus a paved highway gave Hurricane direct access to St. George in the mid 1930's. In 1937 travel to the north was facilitated by completion of the Hurricane-LaVerkin Bridge. After WW II, Main Street lost its distinction of being the only paved street in town.

Any new Mormon settlement began its existence blessed with a sense of community by virtue of common church membership and by the compact village with a north-south, east-west street grid that President Young favored. Some new villages had additional impetus. St. George, by Brigham Young's design, quickly developed a drama and music heritage that helped to give its citizens a sense of community. Hurricane remained lacking in those but what did provide a strong common bond was the shared recollection of the monumental struggle, the sacrifice and the triumph in building the canal that made the community possible. Prior to World War II, every Twenty Fourth of July featured a well-attended program that honored the canal builders. James Jepson, who lived well into the post canal building era, seemed to almost have a full time job accepting accolades. Anyone who traveled north from Hurricane soon became aware from the responses we elicited that we talked funny and that we were considered to be hicks. Hicks we might be, but we were hicks with a heritage.

The canal, from its start at the diversion dam to where it begins heading south out from the canyon, was abandoned about 1986-87 when the Quail Creek pipeline was completed. At first, an auxiliary pipe delivered water to the canal at about Tenth or Twelfth North. Approximately five years later, all irrigation water was distributed by pipeline and the canal became history. It has a continuing role along part of its course as a flood control channel and its slowly disintegrating remains are there for new generations to marvel at and appreciate.

Hurricane's growth is reflected by that of the Church of Jesus Christ Of Latter Day Saints. The Hurricane Ward was formed in 1907 as part of the St. George Stake. The Zion Park Stake was organized in 1929 a year after Hurricane was divided into the North and the South Wards. These sufficed for forty-five years when, in 1974, two wards were added. The Hurricane Stake was formed that same year and the Hurricane West Stake in 1996. As of January 2004, the two stakes contain a total of fifteen wards. Two or three other religious denominations also have a presence here.

Farming and ranching supported the essentially stable population of approximately 2,000 people that persisted until the late 1960's. Although

Dixie's beauty was recognized, its summer heat was to be avoided; the old highway imposed limitations on travel. Emigration usually exceeded immigration. Four events changed all that: (1) the freeway brought easy access; (2) ubiquitous home air conditioning kept summer's searing heat at bay; (3) retirement plans created a new leisure class; and (4) golf courses were laid out to entice residents and visitors alike. Probably no family of the approximately 10,000 current residents supports itself entirely by agriculture.

#### Acknowledgments:

1. "A Little Oasis in the Desert" W. Paul Reeve, 1996. It is the definitive history of Hurricane's beginnings.
2. Letter written to the St. George Stake Presidency by Martin Slack, Canal Board.
3. "Pioneers of Rockville and of Hurricane Utah" by Victor Hall who drew from manuscripts written by earlier family members.