

## Hurricane Canal Narrative 2/25/2012

Hurricane Bench, now known as Hurricane Valley is by far the largest tract of rich arable soil in Utah's Dixie; yet it lay untouched except by cattle for more than forty years after most neighboring villages were settled. Why a life-giving canal from the tantalizingly close at hand Virgin River waited so long to be dug; why the relatively small canal that was finally dug now sits idle is worthy of special wonder and awe; the story of its construction, the seemingly insurmountable difficulties and finally success just as failure seemed certain are the subjects of this program. Traditionally "Hurricane Valley" started near Honeymoon Trail on the north and extended south to the Bundyville area. The Hurricane Bench is higher all along its west side and is thus technically a valley.

Toquerville was settled in 1857 and within six to eight years almost every other village of the Cotton Mission with the exception of Hurricane and LaVerkin were born. Other than the St. George and Washington fields' 1,660 acres, villages were dependent on an average of about 200 acres. And worse, just as families were expanding, the vengeful Virgin whose waters were taken to bring forth new life, devoured land on which the new life grew. Within a few years of settlement at least half the soil upon which some up-river villages depended was forever gone. With exuberant family expansion and a declining economic base, two stark choices loomed: open up new land or leave. But leave to where and at what cost? Actually, many did leave, Arizona and Millard County being the two favored destinations.

(Acreages: Santa Clara, 455; Gunlock, 155; Middleton and Washington, 360; Pintura, 75; Toquerville, 350; Virgin, 277; Mt. Dell, 137; Grafton, 154; Rockville 293; Springdale, 160; St. George and Washington Fields, 1,660.)

Hurricane Bench's expanse of arable soil was well known. Dixie Mission President, Apostle Erastus Snow named it along with its guardian fault scarp about 1865 when wind whipped his buggy's top off while being lowered over the hill as he returned home from a visit to Virgin. At his request, John MacFarlane, surveyor, established that probably 4,000 acres awaited only water. Just where the party came over the hill is unknown. It could have been near where Hwy 59 goes up over, at the B.S. Trail or even further south at the Honeymoon Trail. Keep in mind that the Honeymoon Trail is

almost due east of St. George, so it wouldn't have been out of the way.

President Brigham Young took a personal interest and in the 1870's asked his son, John, whom he was grooming for a leadership position in Dixie to do a canal study. John quickly decided it was futile and had already decided that without the Hurricane Bench, Dixie wasn't worth his valuable time. He departed for places more worthy of his talents. The fact that John mentioned something about having to start the canal just below Rockville indicates that his idea may have been to route the canal so water could be channeled down over the face of the hill, a potentially good idea except that Mother Nature had already ruled against it. The Colorado Plateau tilts upward to the west and an aqueduct starting not far below Rockville would have been required. The tilt isn't all bad; the cliffs of Zion owe their majestic beauty to it.

The LaVerkin Bench being lower and much smaller posed far fewer problems. It was only about five hundred acres. A canal was completed to it in 1891 by a private land company organized by James Judd that surely whetted interest in doing a similar one to the Hurricane Bench. Its surveyor, Isaac MacFarlane, did a cursory survey for a canal to the Hurricane Bench but concluded that the steep, unstable canyon walls it would have to traverse made it unfeasible. Later, although retaining his justifiable skepticism, Isaac did all of the official survey work for the Hurricane Canal Company.

The spring of 1893 James Jepson of Virgin and John Steele of Toquerville acting on a shared belief that a canal to the Hurricane Bench was feasible did a survey beginning at the obvious dam site. Aply using just a carpenter's level and no doubt using referent points along the LaVerkin Canal, they plotted a canal that could reach 2,000 or so acres. Probably two main questions faced Jepson and Steele. First, could adequate acreage be brought under irrigation to warrant digging a canal and second, was it economically feasible to hang such a canal along the precipitous cliffs. At 38, James was young enough to see the near impossible as merely an obstacle. He and John carried the good news back to the villages and called a meeting back at the canyon to review their findings.

. Perhaps desperation in the hearts of those who met that day induced most but not all of them to view almost insurmountable difficulties

with over optimism. We join the possible meeting as they discuss a canal's prospects after having ridden up to the dam site and back.

(The following dialogue differs somewhat from what actually issued from the participants' mouths)

Jepson: Well, men you've looked it over and we've told you what we think. Now it's your turn.

Man.1 I like your idea that we dig it by taking out contracts for doing four rods of ditch and taking our pay in water and land. I think we should go ahead with it.

Man2: I happen to know that when you file for water rights you have four years to bring water to the land; or else you lose your filing fee. We can only work winters and I'm afraid this job could take nearly twice that long. (M2 and M5 are good friends)

Man3: I agree and if it does take that long, nobody could afford to stay with it. I dunno men. I wish you well if you try but I'm not wasting my time on it. (leaves)

Man4: I reckon I'll go too. I don't want to be an old man when I'm finally forced to move on.

Man2: Yeah, if I wus half mountain goat those cliffs (points) would look OK to me but I ain't so I'm going.

Man5: (Before his friend, M2, gets underway) Wait. We probably are crazy if we stay but we're talking 20 acres of mighty good soil and a big lot in town. Where could we go to match it? I think it's worth the risk.

M2: (as he indicates he will stay after all) Yeah you're right but if I break my neck up there just remember whose fault it was.

Man5; Hey, I'll give a tear-jerking talk at your funeral. I'll even sing.

Man 2: Nah, skip the song; I don't want people leaving early  
(after pause)

Man1: I think most of us are ready to start. I say let's organize a canal company and get going.

(there are words of assent such as "hear hear" and "I'm for it" that can be spoken by men who have walked off-camera)

Jepson: All right then, if three or four of you who can help on a planning committee will stay a few minutes we'll lay out some things we need to do. By next month we should be ready to organize a canal company. We'll be digging this winter.

Narrator: July meetings saw the Hurricane Canal Company organized, plans set for a fifteen-foot high diversion dam and a seven and one-half mile canal, work to be contracted out in four-rod lengths. Water shares were set at 2,000 with each man limited to twenty shares. Toquerville hosted the first meetings but Virgin being more the center of involvement soon became canal company headquarters. Filing for water rights was delayed until late 1893 but even so \$200.00 of the \$600.00 total fee was forfeited after four years, a bitter pill to men who had almost literally taken food from their families' mouths in order to scrape together canal company dues.

Actual canal work began January 1894. Cruel north winds scour the canyon and render such clothing and bedding as men could carry in on their backs as barely adequate for staying alive; miserable but alive. Until the board commissioned a crude road that was completed over a year later, men carried in not only food, clothing and bedding but picks, shovels, crowbars, sledge hammers, drilling bits and even an anvil. Using the steep narrow road, wagons could be brought in, the box with its canvas cover slid off onto the ground at one of the campsites and the cold hungry shareholder working his contract could look forward to relative comfort and warmth that evening. (Apparently the road is far smoother and of more uniform gradient now than it was at first. Wives sometimes visited the worksite and Morris Wilson's wife was one of the few who would dare drive a wagon up or down it, or even ride as a passenger over the worst parts)

His potential stock-share pay began at fifteen cents per cubic yard in easy digging, up through seventy-five cents for loose rock gravel, a dollar twenty-five for harder rock and a negotiated price for really bad stuff. We can assume Thomas Isom was working a negotiated contract when the desperate need to allow no waste drove him to death defying lengths as recounted by his grandson, David Isom:

“My grandfather Thomas Isom who later owned Hurricane's first home survived the perils of canal digging in spite of taking some hair raising risks. He told of how when breaking up rock with dynamite, the blasting caps sometimes failed to detonate the charge. He recalled, “picking dynamite out of many a hole which had misfired.” Adding “We had to do this, dangerous as it was; we could not afford to lose a single stick.” I've heard that he laughed about it later in life and wondered how he could have been crazy enough to do such a thing.

Fortunately, dynamite, invented just a few years earlier, turned out to be as safe to use as Mr. Noble's patent stated. It was an almost impossible luxury for men living in a cashless society and was used only when absolutely necessary. Black powder could be made locally but is useless for shattering rock. Many boulders were broken up by building a roaring fire against them, dashing cold water on them then whacking with a large hammer.

Digging the canal was planned and executed during a period of crises for the nation, the state and the Church of Jesus Christ. The church was still on the ropes financially after its attempted knockout by congress through passage of the Edmunds-Tucker act of 1888. The nation suffered from the financial panic and subsequent recession of 1893 with widespread unemployment and bankruptcies. The nosedive of food prices hurt Utah farmers and a plunge in silver prices wiped out much of Nevada silver mining thus casting at least hundreds who are thought to have been immigrant Cornish hard rock miners adrift far from home in a lonely, desolate forbidding land. (The theory that they were originally from Cornwall England is based on the fact that Cornwall had extensive tin and silver deposits and that hard-rock mining had taken place there for centuries. These deposits were exhausted about the same time as Nevada silver mining began booming thus creating a demand for the skills the Englishmen possessed. The music and village choral traditions associated with Wales also enhanced life in neighboring Cornwall and the miners no doubt kept these traditions alive.) A few of these men came through Dixie probably from the Pioche area and willingly worked winters for food plus a horse and grubstake when spring came. Whether there were five, ten, twenty or fifty of these men we have no way of knowing. To our untrained pioneers the miner's blasting and mining skills came like manna from Heaven during daytime tunnel digging and their tradition of song and dance enlivened the long winter evenings. It is doubtful if anyone, whether Chinese or Caucasian, from Silver Reef mines worked on the Hurricane Canal as much of the original mining had ended by 1891. Small-scale mining started up after that but that meant miners were being employed, not laid off.

Powell Stratton who worked on the canal as a teenager recounted how evenings were spent as told by his daughter Afton Stratton Stapley:

My father played the guitar and the harmonica at the same time by suspending the harmonica from his ears. He played at weddings, funerals and church activities and must have done the same while working on the canal although he didn't tell me about it. What he recalled to historian Alice Stratton was:

"The men would sing and dance and raise the dickens telling jokes. My, but those itinerant miners were good singers. There were some wonderful voices among them. All the men who worked on the canal brought their violins, banjos, mandolins, guitars and harmonicas and the music was

great.” Alice went on, “He laughed to remember the comic dances of those rugged men as they dramatized their funny stories and songs.” (129)

In spite of the cold, optimism and enthusiasm must have run high when work began; nearly one hundred share holders had signed on and more than that number of workers were reported to be involved the first couple of years or so. As it was desirable to have water available just upstream for testing gradient and stream retention, the first dam was completed in 1895. Portending troubles to come, it soon washed out. An ingenious permanent replacement followed. Slots or holes were hewn into the rock on either side of the box canyon mouth. A huge pine tree was hauled from Kolob Plateau to Virgin, probably rolled into the river, floated to the site and fitted into place where the cliffs themselves could anchor it. Braving frigid waters, men fastened vertical Juniper poles to this then lodged large rocks against the poles. This dam withstood everything the river could throw at it except for the next flood. (The last major work on a diversion dam took place the winter of 1966. Approximately one-third of the existing concrete dam had been ripped out. As recalled by Ashby Reeve, a temporary cofferdam was created by fastening two telephone poles vertically to the upstream side of the dam on either side of the break. Heavy planks were then fastened to these and finally the whole cofferdam made watertight by working a tarp over its upstream face. Now they could haul in concrete mix in the two-wheeled one-half yard carts like the one Ashby is seen driving. With the work all finished, Tom Hirschi was bringing Hap’s team across the swollen stream when the horse he was riding floundered and tossed him into the water. Leaping on his own mount, he sped home his clothes frozen stiff while the journey was just beginning. A hot bath saved him from even a sniffle)

Mother Nature also had other weapons in her arsenal to prove the canal skeptics right. Precious little of the canal channel went through fifteen cents-per-yard dirt. Harder material meant spiraling costs and much longer time getting each contract completed. According to Martin Slack, no work took place two different winters, once because of La Grippe or flu, the other because spring frosts killed the peach crop and farmers were forced to scratch for what they could that winter. The prevalence of easily dissolved gypsum and similar minerals through which the canal was dug caused leakage problems that began with day one and ended only after WW II when

concrete lining was installed. (James Jepson described the canyon walls as being of “solid white limestone”) Prior to concrete, the most satisfactory liner was made by lathering on clay mud mixed with juniper bark. (The writer’s father, Harvey Hall, credits his own father, Alf, with that innovation. LaVerkin Canal managers had used bagasse from sorghum cane and lint from the cotton factory for the same purpose but with poor results. Juniper bark is far more resistant to decay etc.

The four-year water claim came and went with only a fraction of the canal done. (“four-years” comes from Richard L. Evans. Paul Reeve reports it as being three years. Paul would probably be more likely to have double checked his sources, since his book is also his doctor’s thesis) The now reduced but determined stockholder group accepted the \$200.00 loss, re-filed and kept digging. Four years morphed into eight without a corresponding degree of canal completion. Even the most optimistic must have experienced dark forebodings of the canal’s failure as well as a HIS own failure as a provider for his family. December of 1898 the board petitioned the LDS church to purchase an unknown amount of canal stock. Earlier it had been church policy to underwrite irrigation projects and even at that time was aiding the Sevier River Irrigation Project, in which President Woodruff had somehow taken a personal interest. To the Hurricane Canal Company however, the answer was “No”. It shouldn’t have surprised them of course. The church itself was in dire circumstances and why invest scarce money in a project that experts had advised against and that had gone way beyond the expected completion date.

By December 1901, for longer than anyone had dreamed, much of the really expensive work hadn’t been tackled. That even ten men seemingly too stupid or thick-skull’d to know when they were licked kept hacking away is a source of wonder; more reasonable men including John Steele, now a Parowan resident had moved on. (Steele apparently abandoned the project after just two or three years.)

Gloom and desperation hung heavy as the board met January 18 1902. \$20,000.00 was still needed to complete the canal. The board concluded though, that if the church would provide a fourth of that by a cash stock purchase, a dispirited local populace would spring back to life and get the job done by investing some money but mostly labor.

James Jepson volunteered to take the ensuing request to church headquarters in Salt Lake. (James had been the board president the first eight or so years but was no longer an officer. There is no reason to think that he was voted out. It's more likely that he just gave somebody else a turn) His writings convey that he left with the conviction that he had a mission to fulfill and success was the only acceptable option; he went determined to hear "Yes". President Joseph F Smith and the quorum members present were deeply moved by Jepson's eloquent appeal even though they had apparently already decided to say "no". Seeking a way around the fact that the church couldn't really afford to help out, President Smith noting that five local bishops had signed the appeal asked how much tithing the five wards had paid the previous year. What he sought awaited in the books; it was just over \$5,000.00! With a unanimous "Aye!" ringing in his ears, an ecstatic James Jepson rushed home to spread the news.

The agreement called for shareholders to invest three dollars worth of mostly labor for each dollar of stocks purchased. The effect on local people was magical. Lazarus-like, men found new life and energy, found the means to pay assessments and found the energy to dig, to bore tunnels and to build flumes. Just two years and eight months later it was done. The seven and one-half mile canal eight feet wide at the bottom, ten feet at the top, four feet deep became ready to fulfill dreams.

(Land was purchased from the state, at first at least, by individuals who were later reimbursed by the canal board) It was allocated by drawing lots. Alf Hall, a canal stalwart, drew twenty acres of stony soil that was apparently poor enough that an exception was granted and he was allowed to redraw from better acreage that was yet unclaimed. One reason Alf had accomplished a lot is that he often had his older sons work with him rather than have let waste time in high school. His great grandson Dan Zaleski reports on what his grandfather, Merrill, recalled:

"Dad used to have Roy and me come down with him in the winter and work up the canyon mending breaks and getting the canal ready to start running the water down. He would put me to running a wheelbarrow. I wasn't strong enough to run one very well. I got such a healthy dislike for one of those things that I've hated them ever since. I've Never wanted to

have one on my place. It might have been good for me to have worked so hard, but I have never been able to see it quite that way.”

August 6, 1904 celebrants gathered up under the canal probably at Second North where the canal memorial is located to celebrate water's arrival and to give their new city a name, "Hurricane" being the easy choice.

Homebuilding however couldn't start until auxiliary canals and lateral ditches were dug, the course of the Gould's Wash changed, smaller gullies filled in, fences erected and the soil settled. Hurricane's elevation dropped a full three feet by the time water had compacted the loose desert soil.

The year, 1906 saw homes completed and is thus the basis for the Centennial. Typically, a house of rough lumber with a rock-walled cellar would be built. Later when a permanent home was completed the first house became the granary and/or tool shed. The first of these temporary homes was built for Thomas Isom by his brother-in-law T. M. Hinton. Sickness prevented the Isom family from moving in upon its completion so the Hinton's lived in it while T.M. built its clone seen here for his own family. (The original Isom home having been demolished probably in the 1950's) Some families dismantled their previous homes, marked each board, then re-assembled them in Hurricane. Identifying marks can still be seen in the attic of the James Monroe Ballard home.

The acre plus town lots accommodated a 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 and millions of houseflies. A crude bowery was built on what is now Heritage Park for church and other public meetings. When the Bradshaw home, now a museum, was completed, it hosted both church and school. It was 1919 before local students could stay home and finish high school. The building was made of brick and fronted Main Street across the street and a little north of Bradshaw Museum.

Wagonloads of dried fruit and sorghum molasses were soon heading north for sale or trade. Alfalfa hay for livestock was the biggest crop. Wheat for bread was another staple that made early residents largely self-sustained. (Sorghum cane, which will mature in Dixie because of the long growing season, was the main "money crop". It is very good when fresh but the sugar content is far below

that of honey and it has poor shelf life. For people who could not afford honey or sugar however, it was a desirable sweetener. Villagers to the north derisively referred to people of Dixie as “sorghum lappers”)

A completed canal didn't mean a reliable canal. A tiny leak somewhere up canyon soon opened to a torrent; rockslides filled the channel or tore away the bank; summer thundershowers unleashed roaring cataracts that ripped away man's puny efforts. Day or night water flow must be restored. No water; no life. The ditch rider immediately became the town's most important man. He was always on duty getting respite only during cold months when water didn't flow. He routinely made a daily trip by horseback to the diversion dam. Even late at night if thunderstorms struck, he was on his way. How horse and rider survived these midnight journeys is a miracle in itself. One man, Frank Lee, died in the line of duty in 1958. His son Richard tells how:

Dad, who was a ditch rider about 12 years, was engaged in removing a large timber from the canal right here at Chinatown. He tied his lariat around it and with the other end attached to the saddle, guided his horse down over the bank pulling the timber along. It apparently lodged against a rock, flipped and struck the horse's hind hooves. The frightened animal bucked Dad off then accidentally trampled him. Upon regaining consciousness, Dad mounted, made it to the hot springs for help but died in route to the hospital.

Ashby (Hap) Reeve, grandson of James Jepson, cleaned the canal in the spring as a youth and spent countless hours doing repair work as an adult. His account of digging out after a rockslide filled twenty yards of canal illustrates the completed canal's vulnerability as well as the dangers faced by those who kept it operating.

About fifteen of us were digging when suddenly a new rockslide roared down. We shot to safety but looked back to see Vic Sylvester swept away and buried in the rocks and dirt. Knowing he was a goner, we clawed away at the rocks and there he was; conscious and not even hurt much. He was scared though and he was dirty. We helped him to the river where he cleaned up a little, got on his horse and went home. I believe they paid him his full \$2.40 a day anyway.

### Final Statement

Church emissaries, Abraham O. Woodruff and Hyrum M Smith made an inspection tour of the newly completed canal. They stated to their hosts: “Well gentlemen we applaud your courage but we

condemn your judgment.” Was their condemnation justified? Yes, except that our desperate pioneers’ re-wrote the rules for good judgment. It wasn’t feasible but they did it anyway. And once dug, it provided life-blood for a thriving community, made heroes of those who dug it and gave the new city a strong sense of community.

Although unused since completion of the Quail Lake project, flood control remains a function where the canal runs above town and the upper section is equally important for a different reason. Even though continuing to suffer the damage and attrition that has always been its lot, most of it will cling to the canyon walls for unborn generations to marvel at and to reflect on how a few determined unyielding men who valued God and family above personal comfort worked together to make an impossible dream come true.