

April 15, 2000

SOME "MINE HILL" HISTORY

THE SMELTER SITE

In 1901 the only local newspaper of the area, The Houston Press, carried the news of a great smelter being erected on the banks of the Big Lost River just across the river from the new village of Mackay. Investors and the management of the White Knob Copper company, headed up by the founder of Mackay, Wayne Darlington, had extensive holdings on the "Mine Hill". With a frenzy of mining activity and exploration in progress, and with very optimistic prospects, they decided to build this huge smelter to service the mines. A 12 mile electric railway system was also being constructed to bring the ore down to this smelter which would have two huge blast furnaces and a capacity of 600 tons per day. A Mr. E.C. Rhinehart of Pocatello was contracted to build the smelter which would cost about \$ 400,000.

Initial construction of the smelter would require the work of hundreds of men, many of them masons, to erect a 26 ft. high stone retaining wall along the river's bank. The boilers, furnaces, compressors and other smelter machinery, which required significant brick construction, would be located on the level at the base of this wall. Many of the thousands of bricks used in the construction of the furnaces, draft tunnels and stack bases were made at the old Houston town site. (Much of this brick work can be seen today with a visit to the smelter ruins.) In addition, a spur line of the newly completed Oregon Short Line railroad into Mackay was routed along a right-of-way parallel with Cedar Street, crossed Smelter road, and rose on a trestle that carried the tracks over the river turning hard left on the far bank and on to a siding at the smelter's lower level. The ore bins, sampler buildings, ore hauling electric railway sidings, machine shops, and maintenance buildings were located on the level above this embankment. (See accompanying photo) Though documentation of construction progress is sketchy for the period, it is known that it was 1902 before the first of the two planned blast furnaces was completed and the smelting facility partially put into operation. It was touted as one of the finest smelters in the West.

The initial smelter design was intended to make "blister" copper for which ore from the "Hill" was supposedly well suited, having a high percent of copper. This method, however, was soon found unsuitable as only limited amounts of the high grade ore was being mined. To process the lower grades of ore, subsequent managers would find it necessary to go to a "matting" procedure to extract a profitable percentage of copper and other metals. This method too initially proved very ineffective, for much of the ore lacked enough sulfur for successful smelting. Management was forced to import iron sulfides from Utah and Montana to mix with ore off the "Hill" to furnish enough sulphur to make matte. The mining and smelting operations of 1903 and 1904 employed some 300-400 men and produced a significant amount of the red metal, but not enough to make a profit. The importing of sulphide bearing ore to accomplish the smelting process, the less than break-even costs of operating the electric railway, coupled with labor problems which unionized the miners, all added up to huge financial losses to the company. The expense of continued operation far exceeded any projected returns and the company halted mining activity, including the smelter, in the fall of 1905.

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Enter one Frank M. Leland! Sent to Mackay by company officials to junk the smelter and terminate the company's mining enterprise here, Leland, after reviewing the operation and the "hill's" potential, convinced owners that with some major changes, a profitable operation was indeed likely. He must have been held in high regard, for investors of the White Knob Copper Co. had already expended, according to one account, app. \$3,000,000 in the preceding 10 years.

One of his first orders of business was to scrap the electric railway system in favor of the mountain climbing "shay" steam engine for bringing ore down from mines to smelter. This reduced hauling costs some 75%. He eliminated all frills and unnecessary expenditures. He then initiated a **leasing** system of mining with a reduced work force, contracting with miners of the Macbeth Lease to work the various parts of the "Hill" with the higher quality ore; and ore that required a lesser amount of imported sources of sulfides for successful smelting. (Leland would later become its president and general manager.) By 1906 the smelter, utilizing a single furnace, was treating 200 tons per day and the company was showing a profit.

The Mackay Miner issue of October 5, 1906 records a setback to operations at the smelter site, relating the details of a fire that broke out in the ore bins of the sampler building. By the time the repeated toots of the smelter whistle awakened the sleeping town of Mackay, the sampler building, machine shop, "Shay" engine house and a warehouse structure were beyond saving and, because of very strong winds, it was miraculous that the entire smelting plant wasn't also lost. Though the company incurred a loss of about \$75,000, rebuilding of the structures commenced immediately and within 34 days, blast furnace No. 2 was "blown in" and the smelting of ore was resumed. **(The "shay" engine house [see photo] still standing today is believed the one rebuilt shortly after this fire of 1906.)**

In 1907 the White Knob Copper Co. and Macbeth Lease were taken over by the **Empire Copper Co.** who retained Leland as manager. About 275 men were employed in the mines and smelter which was operating both furnaces and processing about 300 tons per day. However this prosperous time was short lived. For later that same year copper market prices would drop severely and Leland began shipping all ore to the smelter at Garfield, Utah for processing. By May 1908, though leasers continued a significant ore output, copper prices continued below a break even point for operation of the smelter, fisherman were upset at slag being dumped into the river, and residents downwind of the facility were objecting to the heavy smoke from the facility. Records indicate that the facility was shutdown, **its blast furnaces never again "blown in"**. Though for years optimism ran high for its coming back in operation, from then on all ore from the "Hill" would be shipped elsewhere for the smelting process.

But this by no means spelled the end of the smelter site and facilities. Through the active and inactive years, the site remained a key in getting the ore off the "Hill" and to market. It continued to be home to the "Shay" railroad and the loading terminal for all ore being shipped out on the OSL to Utah. The facility underwent numerous changes to facilitate its amended purpose including conversion of some standing structures, demolition and new construction of others. In 1913, as the Van Nostrand (later called the Cossack) tunnel at the 1600 ft. level saw new development, an increased need for timbers prompted a modification to the smelter site blacksmith and machine shop.

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A timber making saw plant was installed there that greatly reduced the time and man-hours required to turn out mine timbers.

1915, with increased prices for copper, welcomed in a spell of record mining activity for the Mackay area. The next few years would see record shipments of ore to Utah, new boarding houses at the mine sites to accommodate the hundreds of miners on the "Hill" in 1916, and new OSL siding tracks laid at the smelter site to take care of the heavy outgoing shipments. Even another fire, which again destroyed the smelter site's blacksmith and machine shop and all its contents, did not dampen the resurgent mining activity. Within a month, a new machine shop building was erected. Even with changes in management, the energetic plans for development continued. There were plans for new compressor plants and other buildings on the "Hill", and at the smelter site, were plans for an **assay office** just down the embankment near the managers house, additional coal storage bins, and more significantly, plans for an **aerial tramway** and a **50 ton mill (concentrator)** at the smelter site. This would entail major structural changes for the conversion of old smelter plant and building of the unloading terminal and anchor for the aerial tramway.

The first of a number of changes at the smelter site involved the construction of the tramway and its unloading terminal completed in July of 1918. This aerial tramway and the elimination of the "Shay" mountain railroad system in use since 1905 would reduce transportation costs of getting ore down the mountain by 80 %. Costs savings were very essential due to the effects of World War I that included severe railcar shortages, low copper prices and high operating costs. In addition to the tramway's large terminal building and cable anchors, construction of huge ore bunkers and coal bins were also required and many timbers from the now unneeded "Shay" trestle sections were salvaged for this new construction. But plans for the concentrator and other improvements were put on hold as mining activity in the district in 1919 all but stopped due to even lower metal prices. This slump continued late into 1921 after ownership of the mines and smelter had been transferred to a new company called **Idaho Metals headed by J.M. Eccles with Ray Weber as superintendent**. They would continue the leasing system and in 1923, as prices for copper rebounded, announced big plans for the old smelter site; **construction of a 200 ton capacity concentrating mill!** This was great news and reason for miners, and the community, to celebrate. You'll learn the reasons for their optimism next week.

THE SMELTER SITE'S FINAL DAYS

Mackay's optimism about the construction of the concentrating mill was based on more than just the paychecks for those involved in its construction. For nearly the 18 years previous, almost all of the low grade ore mined by leasors on the "Hill" had been discarded and "blocked out", accumulating in the stope fillings, not profitable enough to ship out for smelting. Mining officials estimated some 280,000 tons there on the "Hill", a five year supply for a new mill, just waiting to be processed. By mid-summer of 1924, activity at the old smelter site was fast and furious. The work of converting the old 100 ft. X 200 ft. X 75 ft. tall smelter building into a fine grinding, flotation concentrating plant was in full swing. With an expenditure of \$150,000.00, the structure was completely modified and housed a 250 H.P. steam plant, samplers, ore crushers, ball mill, and flotation and concentrating apparatus. Even with the setback of a disastrous fire at the aerial tramway headhouse and ore bins in July of 1924, the new mill came on line that November.

Initial success prompted adding additional equipment to raise the mill's capacity to 250 tons /day in 1925, some of which was provided by other mines nearby.

The inherent up's and down's of the mining industry showed itself in the years following the frantic pace of operations on the "Hill" and at the mill in 1925. Very poor prices for metals beginning in 1926 and a significant fire at the mines had the mill shutdown for over two years. Idaho Metals Co. gave way to new mine and mill owners **Mackay Metals Co.** in 1928, and an upward trend in metal prices triggered a new flurry of activity on the "Hill" and at the mill; a flurry which would last through most of 1930. This renewed activity led to another fire that destroyed the blacksmith / machine shop for the third time. A new shop was constructed in 1929, *believed to be the one that still stands today*. By this time the mill would be working 25 men and operating 24 hours/day and producing record amounts of concentrate. (An interesting side note about the mill plant that year, was the installation by the Mackay power and light company of a steam driven electrical generator that utilized output from the mill's boilers. It was used, as needed, to supplement the town's electrical system during low water flow periods at the Cedar Creek power plant.)

For the decade of the 30's, mining on the "Hill" and operations at the mill fell victim to the "Great Depression" and the mill shut down in Feb. 1931. The Mackay Metals Co. went belly up and was finally sold for taxes in 1939 and taken over by the Mackay Exploration Co. (Cherry and Weber) who resumed leasing operations on the hill. They continued to use the aerial tramway and the transfer facilities at the old smelter site, but most ore was shipped out for processing. The 1940's and WWII years saw limited ore removed from the "Hill", but in 1944 with a government loan, the local mining company revived milling operations at the old smelter site. They made a number of improvements to the flotation mill and, utilizing the steam plant and electrical generator at the Cossack tunnel site for electrical power, began the concentrating of lower grade ores. Records indicate that this activity lasted less than two years and that the aerial tramway was dismantled about 1947 and all facilities at the smelter site deserted; *this time for good*.

The exact date of the salvage of the mill machinery, stacks, boilers, and tramway terminal structures, trestles, etc. is uncertain. But a tour of the smelter site ruins and the remaining structures today doesn't leave but little to one's imagination as to their significance in an earlier time. One can see the brick foundation upon which the 120 ft. tall iron chimney penetrated the skyline and the concrete foundation of the aerial tramway terminal structure. And still standing at the site are the "Shay" engine house (1906), Blacksmith and machine shop (1929), the assay office (1917), the mine office building (about 1903-05), the mine manager's house (about 1903-05 and now a remodeled private residence), and not to be overlooked, an (8) hole company outhouse. The "Mine Hill", throughout the last 100 years distinguished itself as the biggest producer of copper in the entire state, and the facilities at the bottom of the hill, *the smelter and mill site*, played a large role in the record output of the "red" metal.

Though on private property, present efforts of Mackay's Historic Preservation Committee are focused on preserving the site and the remaining structures. After some minor restoration work and the erection of informational and interpretive signs, visitors will be able to visit the site and review its historic background.