

HOMESTAKE RAISE WHISTLE

By Al Winters

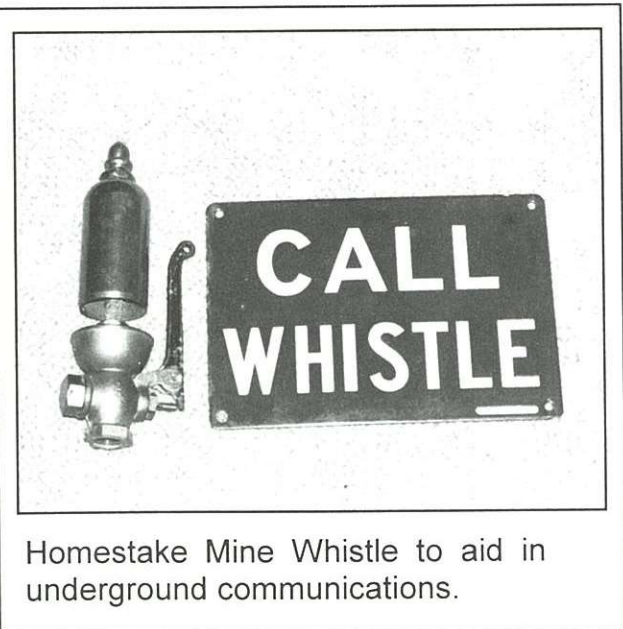
Access to ore above a particular mine level is often provided by an inclined or vertical opening called a "raise". Steel pins or timber is generally used to provide a working platform in raises; for inclines steeper than 50 degrees, a timbered chute or rock bin compartment separates the broken rock from the manway and services. Raise timbering varies from random stulls and lagging to the common six-post, double compartment, square-set used in many of the older western mines. With mechanized mining, raising has become somewhat of a lost art and is no longer the critical mine development step prior to actual stoping or extraction of the ore that it once was.

Raises were generally driven to the top of the ore or to the level above which varied from one hundred to two hundred vertical feet. Efficiency of driving the raise varied with the distance and rock temperatures as men had to climb and all materials had to be hoisted, carried or pulled up the raise. In most cases a timber slide with vent bag and pipe was carried along side the manway for materials to be hoisted by means of a small air hoist or tugger. Where rock temperatures were high such as in Butte, Montana it was often a major effort just climbing to work. Many times it was necessary to pour cold water on your head and hold your face in the vent bag for a few minutes to cool down after the climb. At the Homestake Mine, exploration and development requirements often necessitated raises in excess of eighty degrees and three hundred to six hundred feet in length. From these long raises sublevel drifts were driven

every one hundred fifty feet to mine or explore the orebody being tested.

Communications in raises were always a critical problem and consisted of yelling for your partner to hoist or stop the movement of supplies or utilizing some type of signal system. One system used in Butte for example was a pull cord running the length of the raise and tied at the bottom to a track fishplate which when pulled would hit up against a pipe or other fishplate nailed to the cap producing a loud "Clank". This was a fine and cheap system for these raises connecting one hundred foot levels.

For long raises at the Homestake Mine an efficient technique known as "Cage Raising" was developed which incorporated



Homestake Mine Whistle to aid in underground communications.

a large air or electric hoist and "Cage" for hoisting the miners and supplies to the face or blasting bulkhead. This saved time and

effort on the miners part by eliminating the physical work of climbing. A hoistman/nipper was assigned to the bottom to operate the hoist, supply the miners and to pull the exact amount of rock from the chute at the right time. The Cage Raise was driven 9-1/2 x 7 feet in cross section. A two-foot square cage for hoisting men and supplies ran in guides in the hoisting compartment and a ventilation, emergency ladderway and pipe compartment was carried adjacent. A rock bin was separated by 6x8 inch lagging nailed to the caps on seven-foot centers with an intermediate cross brace to strengthen the chute lining. Details of the timbering is shown on the attached diagram. Bearing sets for the posts and caps were placed as needed and at each one hundred fifty foot interval.

man/nipper and the miners was established by a small air whistle with cord which ran the length of the raise and advanced with the timber. The Homestake Mine Whistle as shown had a 4x2-inch diameter brass bell that was cast in the foundry with the rest of the brass pipe parts purchased. This small whistle produced a loud shrill which could be heard clearly throughout the raise and the sublevels above. Signals consisted of the standard one to stop, two to lower, three to hoist, plus a whole group of others designed to notify the miners of pertinent information such as the Boss is on the way or that it was time to quit.

Long raises driven by hand such as described became a thing of the past nearly thirty years ago when new methods utilizing mechanical Climbers or Boring machines replaced the older techniques.

Communications between the hoist-

