MC: But if we'd taken them out to get them custom-sharpened that would cost us about $.10 each to get new bit put on, sharpened. If we broke a bit off it would cost us $.25 cents to have new a bit reshaped. If we broke a shank that was put into the drill, that would cost another quarter.

DB: So, you say you used 80 pieces of steel a day, where would those pieces of steel go?

MC: We wore them out.

DB: Wore them out.

MC: We'd wear them out, we would. You know, we couldn't use them again. The gauge was gone often. So, you couldn't follow one with another.

DB: Was that when you were hitting with a hammer?

MC: No. We had pneumatic tools.

DB: OK. Pneumatic tools.

MC: We used this Ingersoll-Road.

DB: When did they start using the pneumatic tools versus the hand...?

MC: Well that's... I told you about it before, I think it was about 1900. When they first brought in the...

DB: OK. But when you first started mining...

MC: When I first started mining they had all pneumatic tools. The hammer man was gone. Except as a boy I was, like I said, I worked out on a small mining property where they didn't have any air or anything else. All they had was just physical. You had to have, what miners used to say, "A 44 Colt and a four hat". If you had those, why you met all the prerequisites of mining.

XF: I just showing the picture there, say when you first, when you were about 14, and you used that hammer with the thong around the wrist. See, right there...

MC: That was... that was how that was. And just like they used to say they got the, in the old days, they had the soft hats and hard-headed miners. And now they have the hard heads and the soft hats. I mean, the hard hats and the soft heads. And ha, ...

DB: When you mined, how did you get the timber for it?

MC: What?

DB: How did you get the timber to shore up the sides of the mine?

MC: Well, timbering is quite an art, in mining. Ah, you have to, one thing about it you have to be a pretty good judge of the rock and the conditions which surround you. Because you have to protect yourself from falling debris, or things that come down. And ah, the Comstock lode in Virginia. I mean, in Nevada, Virginia City in Nevada. Where they
invented a pattern what they called "Square Set" mining. Where you could take the timbers and frame it out so'd fit a pattern, so one locked in with the other. And then they found out that they could mine large areas if they timbered with this method. And, before that time they had great difficulties mining these areas, or mining a large amount, or opening up a large body of ground.

DB: Did you use that method on the...?
MC: Yes. This method was used...it was used by the bunker Hill. And ah, used in many mines in the West. Where you had a lot of faulting. Ah, these faults, ah, geological formations that were related to every mining camp practically, in the world. The faults are mark beddings or planes between rocks. And ah, as the earth moves along the fault lines, why part of the rocks, it breaks. And when these rocks break, in there, they provide...just like a system of piping or tunnels, or tubing...these hot minerals and solutions are forced through these here openings. That causes the deposits of the ore bodies here, in this Coeur d'Alene mining district. Of course, that's been done over the many, many ages and periods of time. And ah, we have like say here, some of the oldest rock formations in the world. Here. We don't have any form of life of any type, that's been found in these rocks. These rocks are very old. And ah, when they are very metamorphosed, very changed. And we also have some basaltic rock, some of these later types of rock--tertiary rocks. Tertiary periods. And ah, but, not very much. We have here, called gem stones, around the Burke area. The result is this area, we have a large fault that comes through this area. Most of this area, Osburne fault, and we have minor faults off of that. Some of these areas here have moved over 16 miles, in relationship to one another.

DB: So, did you make the timbers to stock up the walls?
MC: Yes. Sometimes you had to frame your own timber and just go out on the hillside and cut a tree and bring it in.

DB: Where would you buy them if you...?
MC: Otherwise, you could buy timber which was already framed. Like the larger mining companies they maintained, their own sawmills, their own forests went out and logged their own timber and brought it in and...

DB: Were the mills near the...?
MC: They had a tie mill where they shaped these timbers. Like a square set here, they would have a round post, with a tenon on the end. And they would, it was usually, a tree at least had to be about 12 inches in diameter. And then, they would cut some timber out like 8 by 10. And they would square those timbers. They would have, what they would call a perk or a tie timber, that would run parallel with the ore body. And ah, then they would have another timber, called the cap. It ran from the wall, it was
hanging. This wall which was above you. That's the hanging wall. And this wall which was used for standing on, the lower part, that was the foot wall. Well, when they start placing these square sets in there like that, see. Five by five, seven feet high. And as you broke out a section you'd break out just to fit one of these sets. And you put it in and break another one. Like that.

DB: You mean break it with dynamite?
MC: Yes. Blast it, drill this rock. And you had a certain pattern to follow, in the sequence of mining, so as to never get too much pressure from the hanging wall on you. You, had to study that. Have some relationship of the knowledge of what you had to support.

DB: When you blasted out, did the blast ever take timber with it?
MC: No, no, no. Unless you were a foolish person, didn't know anything about mining. If you knew about mining, you knew just about what to sustain and how you could break it. Miners become very skillfull in the use of explosives. As a matter of fact, I can tell you, one occassion I worked for Page mine. Put in a compressor there. They come to find out they ordered two compressors, one for the mining property in Page, one for the Morning Mine, and they got the blueprints mixed up. They sent the blueprints, didn't fit the compressor that were goin' to sit on...they had to tear out this concrete. And steel. And they was set up right in the dry house above this here compressor, where men would change their clothes. And it was plastered up there. And windows in it. And this explosives expert, he came in there and he drilled some holes in this here concrete. He blasted this here foundation. This concrete foundation to set this compressor on. I was there, never even cracked the plaster or even broke a window. So, some of these here miners, when it come to drilling a hole they can judge it very, very close. Just exactly how much to put in there. You can see the same thing out here in these road cuts, and things like that. They go out there with these explosives, and can almost make them do the work, you couldn't do with your hands. You couldn't pile it up so good yourself. They would take a mountain and lay it over so easy, matter of fact you could almost stand beside it when it explodes.

DB: Where did you take your ore when you got it out of your mine?
MC: Well, the ore was broken, it was brought to the surface. Then they had what they called a concentrator. Now most metallic ores weigh more than the waste rocks that are with 'em. So, the first types of mills that they had in here, like mining lead ores, as you might know these lead ores sitting right up there, you can pick it up, you can see it has very difference. Now here is a piece of galena rock.
See, it has a great deal of weight to it. And ah, the result of it is that the, they found out that they can take this rock and crush all the rock. They had to have what they called a crusher. First crushers they had they were jaw crushers. Just like hitting this hand against that hand.

DB: Is that like what they had in the stamp mills?
MC: Well, no these weren't stamp mills. This was a jaw crusher. This one went like that. No, the stamp mill was just hittin' up and down. And ah, it was one of the early types of mills too. So, then they would take and they would run this here, an' set this jaw at a certain opening. They'd have their bins where the muck ore was coming into. Feed to this here. They could set that there. So a certain amount of feed would come through it. Well, then this here, they would have the secondary crushing element in this crusher, was two sets of rollers. Steel rollers. They would sit parallel to each other. And the rock would run between these rollers and that would crush some. Well, then, they would have what they called jigs. And these here jigs would go up and down action. Like this see.

DB: Is all on the conveyer belt while it was happening?
MC: Yea. And you can see that the heavy rock like that. This heavy rock would go to the bottom. The lighter rock would come up. If the action was violent enough. That's what it was. Then they had an intermediate point were it would contain some ore and some waste rock, see. That would come out of another point. And then they also had tables. And on these here tables they was sort of on a slant. They had cleat marks upon them. Which were made out of wood cleats. Stayed so far apart. The table would have a motion like this, constantly. Well, the ore being heavier, would go to the lower side immediately, see. And it would be discharged at one point. Other rock being lighter it'd be up higher on the table and it would go to another point and these would be discharged and go down to the creek. Well, the efficiency of these early mills was approximately, I'd say about 80 to 85 percent. That would mean recovery. And also they used hand sorting methods. Where they would pick the best pieces of ore. They'd ship it directly to the smelter. Without sending it to the mill. They'd do hand sorting. Why then they had what they called, two types or ore. The first class and the second class. And, the first class type of ore was this high grade ore, just like that. And the second class of ore was the type of ore that the smelter would accept without milling. It would probably have to have a certain degree of purity. Let's say it couldn't be underneath 20% of metallic content. Then they'd have mill feed then, which you ran through the mill. Which had these gravitational
forces. And these mills were called gravity mills, because of the difference in the gravity of the rocks, you see. And by their own weight they would separate themselves. Now if you was to go out here and, and take a heavier rock and a lighter rock, like that. Oh couple of rocks, just say, roll it down the trench or chute the heavy rock would run off and leave the lighter rock. Then they had some sorting machines built there. The same way. The trajectory would sort itself. And ah, of course, since the beginning of time man knew these here things. And they even, they even employed the gravity, the force of gravity in harvesting your grain. Like you have around Pullman there, they threw the wheat up in the air and the wind blew the light chaff away.

DB: When you started, was there much hand sorting?
MC: I never did much hand sorting. I hand sorted in the mines, you had to have this waste rock, you see. To fill back on these square sets. Where there was much just there, ore and these square sets would be just on the floor. The planking would lay over these here square sets. You'd have these series of rooms, or cells, one over the other. And you sort this waste rock and put it back in these here square sets.

DB: That's so you could mine going up?
MC: Yea. That's right and this way by filling it back. Why, and the compression of the earth...this waste rock that you put back would support also. Now, they had in the early days, good...good many people very skillfull in building rock walls, along the face of these here square sets. They build them out of rock. Place one rock on top of the other, you know. And ah, the...the miners who came here from Europe, most of them came very skillfull in building these rock walls. And ah, I've seen tremendous pressures put on these rock walls. They would hold the weight better than timbers.

DB: Would they have any mortar in between the walls?
MC: No, no. Just by placing the rock there. And ah, I've seen stopes. Stopes what they called, the square sets in mining. Sometimes they would, get to be as high as 12 floors high. Maybe 500 feet long. Now, 12 floors high it would take you up approximately 8 feet, be about 96 feet high. 500 feet long. They are mining these areas here. You have a tremendous load, you see, that you had to support. They had a fault along with it too, usually. That exerts more pressures. And ah, it was constantly, moving, everything was. But ah, these rock walls could sustain it. They could blast against them too. They were well-built. And ah, I think, oft times, I think about what ever happened today to all the old people from Europe who were so skillfull in building these rock walls. I tell you, you could go to some places in the eastern part of the
United States. And go back there to Virginia, and New England states and you can see some of these rock walls, these people built years ago.

DB: They're still standing.
MC: They're still standing. Some of 'em even sunk down in the ground so far they're almost buried. In fact, some of these placer mines, in the early days, built these rock walls for placer mines. Creeks, through the years thrown all the power, force of their water against 'em, they can't move 'em. Standing there just like...of course, again, we go back to the Inca culture, stuff like that. In South America, see some of those walls, the rock builders, they're wonderful.

DB: When you started your own mine did you sell the ore to the smelter companies, or how did you work that?
MC: Well, I worked for a day's pay.
DB: Well, you said that you got together a couple thousand dollars to start your own...?
MC: Well, that there, that is what we call leasing.

XF: Leasing
MC: We went to the Bunker Hill Silver and Mining Company; we arranged to get a block of ground. Which we would pay the 15% royalty for everything which we extracted. We would meet all the expenses ourselves.

DB: So, would you sell the ore to them to smelt it?
MC: Yes, yes. They had their smelters here. We would take it to a custom smelter...I mean milling. We had a mill there in the close vicinity where we were mining. And it was called a co-operative mill. It was a gravity mill. They milled our ore, they did. For $1.25 a ton.

DB: How many tons could you do in a day?
MC: They could do right around 120 tons a day. We had a 120 ton mill.
DB: How much could you produce in a day?
MC: Well, actually, a miner at that there time...
MC: ...the ah, it would depend on the conditions, size of the ore body, things like that. But, basically, I think, the mining industry about that period of time was producing about three tons per man, a day.

DB: So, you could, in a private mine, you could produce three tons a man per day?
MC: Per person. And ah,...
DB: So you made your money by selling it to the smelter, the co-operative, or miller?
MC: Yea, yea. Yea. The thing of it was you had to find an ore body. And that was expensive. And ah, you had to meet that debt yourself. And ah, each day, you could figure just like that period of time, that you had your expenses. You had your, keeping your equipment in condition to work with it. And ah, also you had to buy your own dynamite, buy your own steel.
DB: So, many men felt that it was more profitable to work for the companies?

MC: Well, if you were fortunate enough to hit an ore body you could make some money real quick. And ah, you could work sometimes on something for a long time, and you live and hope and you could die in despair. As each day you think, well it's gonna get better, you know, and it wouldn't get better. You could do that till you went broke.

DB: How many times a month would you take ore to the mill?

MC: That would depend on the ore body. What your conditions were. Now if you had good consistent ore body, you could probably...number of men you had working for you, that would depend too. What actually you were mining, you know. Just like anything else, your production would be set up to conditions which you were working under. Just like if you had a small grocery store or a large grocery store. It depended on your ore, the size of your ore body.

DB: Did you get it by horse and wagon to the mill?

MC: Yes. It was...we brought out, working in Wardner on the Reed level. We had what they called Reed level to what was called the five level to the surface. We had about approximately 1,000 feet on top of us. We had a block of ground which was defined. And ah, so we was working on this, one, two, three, four attics above us. Levels above us. We dropped this ore in chutes from one level to the other. And ah, if we was in a fairly good ore body, why you could knock out a fair tonnage each day. It all depended on the conditions that were there. If the rock was hard, why, you wouldn't have to timber it. You would come right back in start mining the next day. If it was soft you had to timber it before you could make another cycle. And ah, it moved like that.

DB: In your experience did you find that it was more profitable to work for the company or to work for yourself?

MC: Well. Yea. That again, say is related to the ore body. If you got ore, why, you make money, if you haven't got ore you won't make money. If you want to go out here and prospect and pay for the source of trying to find it, you gonna go into debt. Don't ever think that you gonna go in debt fast. And ah, it is just like a gamble. Like sitting in a card game. If you gonna hit a pot, why, you gonna' make it. And, when you're hot, you're hot and when you're not, you're not. That's the same thing in mining in trying to find an ore body.

(BREAK IN TAPE)

MC: Ah, today we have...Last year in this mining district not very many operators. Ah, see the consolidation of these here mining companies. There aren't very many mining companies in this here Coeur d'Alene district. See like the Sunshine Mine. Very small properties situated around it. Each one of those properties have a very good
potential. They'd lack capital. They made a program where they would assign their mining rights to, like the Sunshine Mine, like on a 60/40 basis. That Sunshine would do the development work. Take 60% of the ore body when they were mining it. And then after all expenses were paid, and everything. Afterwards they'd receive 40%. Well, those are smaller mining companies, like there is, 100's of 'em here, they became captives of the larger mining companies. They sign these agreements. Because there was a time element there, see. And ah, result of it is some of those mining properties sit there for years and years, without any work being done to 'em. Or very little work being done to 'em.

DB: Which of the companies did you work for?
MC: Well, I worked for quite a few mining companies. I mined from here to Alaska and back again. And, ah, I've drilled enough holes on this earth that if you start falling right now, you couldn't fall through all of it till the rest of your life. So, things like that. I've worked in coal camps, copper, lead, and silver.

DB: Most around here is lead and silver and antimony, isn't it?
MC: What?
DB: Around here the metals are lead, and silver and antimony, aren't they?
MC: Well, most of the things we have here in this district, primarily, lead and silver district it was. Now's silver is getting a big boom, why, most production is in silver today. Silver and copper, lead.

DB: Were there many stories over the years, about, oh, buried lodes, like special lodes that you could find?
MC: Oh, yes. There is nothing like mining for telling stories about the lost ore bodies, the hidden treasures and...

DB: Which...do you remember any of them?
MC: What?

DB: Can you remember some of 'em?
MC: Oh, yes indeed. I went on some of those wild goose chases myself. I've spent thousands of dollars trying to pick up an ore vein or an ore body that I couldn't find. And ah, that time I was leasing. And ah, fellow that had been before leasing at it, they've taken out a nice ore body. Made some money. Looked pretty good to us. When they quit, they had extracted apparently all of it. There was a fault that ran there beside it. And, ah, we decided that probably this here fault cut off the ore body, and if we get to go through this here fault, and get to the other side, and by studying the geology of the rock. If it had moved in a certain direction, we could hit that point, the intersection. Where we thought it was. Well, we started for our objective and, by George, there was a small seam of ore there where they quit. Wasn't payable you know. Wasn't profitable to mine it. But popping that first seam
it just opened up like this. We seemed incredibly to be right in the chips. And ah, I think about every day that I blasted there, why I'd make about $400-$500, I would. And ah, about the first three weeks, why, that period of time we were pretty well ahead of the game. But, we was still going for our objective point. And, we stayed with it all right. About a year's time I was very deeply in debt. We hadn't found it, it didn't materialize where we figured it would be. So, the only thing that I could do, go down and tell my debtors that I was broke. I'll never forget one old fellow, I told him. Ah, we been buying powder from him, I told him, "Dave," I said, "We haven't got any money, we're broke." He said, "I know that." And (I said that). "I'm gonna pay you though." "Of course, I know that too. I wouldn't have given you that credit if I didn't think that you was gonna' pay me." And ah, so, I worked about, almost two years for nothing, paying him back. And ah, so, that's the way some of those things would go.

DB: Was that in the '40s or the '30s?
MC: That was in the '20s. 1928. Hm.
DB: Back in the Depression times, were there many prospectors here?
MC: No. No. This here, during the Depression period it was very difficult. Very, very difficult. You might have read like this here, one of the biggest book sellers today, The Day the Bubble Burst. You know, 1929. And ah, it's one of the big sellers right now. A lot of libraries are pushing the book. They told the troubles and misfortunes of Wall Street, you know. Amongst the people who had money. But they never told of the troubles and misfortunes of the mining camps, and the common ordinary small communities. Well, like, right here, I was working here during the Depression. I was working in Page's mine. The bubble broke all right. It was about in the latter part of October, around 29th. First of November, why they were employing about 250 men. They came down and laid off all the single men. Those with families, they kept. I was single at the time, it didn't make any difference to me. I'd never known what a Depression was. And ah, I'd lived through a boom period, I had, you know. Money was easy to get, jobs were easy to get. By George, it wasn't long you found out...I went to school. I went...I'd been out of high school for a while. I said, "Well, I'll go get some education. Went to this Eastern Washington University, at the time. The place was called City Normal, at that time. Didn't take long to spend your money again.

DB: What kind of jobs did people have during the Depression?
MC: Well, you had now, like here. That mining company, I worked for, for a while. Ah, they tried to keep, they tried to sustain it, you know. But the metal prices kept dropping. And demand for the products kept dropping. So,
the result of it was, first thing you know, their operations were curtailed, you know. Now like here, at the Page Mine, they worked 12 days a month, they did. And at the Bunker Hill they were working 16 days, a month. They were very fortunate in this community, but these mining companies had a fair ore body, you know. They could hold those prices. The price of silver went down to 28 and 7/8 cents an ounce. And you see what the price of it is today. Probably $17.00 an ounce. And you crank a mine, an ore body at that figure. The price of lead which normally was about $6-$7, it was down to $3.75-$3.25.

DB: Per how much?
MC: A 100 pounds. And ah, so, that was an awful drastic reduction in prices. And ah, of course, you could get some. And then again the wage price, they started dropping with it, you know. And ah, they had miners working for, some of them for around $4.00, some of them $3.75 a day. You worked 12 days a month. You get a paycheck for around $56 a month. Now that $56 used to mean all your expenses. Well, I know, like I and Jean, there, why...we hadn't been married very long. We had to have some furniture. We bought a bed, a bedroom set, we...and a stove. And ah, we were living in a two room house. And we made our own table and benches. Cut our own firewood and fuel. Things like that, you know. And ah...

XF: We even went placer mining on his day's off.
MC: Did that. By George.
DB: Did you ever find anything placer mining?
MC: What?
DB: Did you ever find anything placer mining?
XF: No.

(END OF TAPE 21; Side 2)