

Oral History Interview

with

FRANCIS FRINK
President, Washington Iron Works, Inc.

Seattle, Washington
November 13, 1958

by Elwood R. Maunder, Forest History Foundation, Inc.

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MAUNDER: The old-time logging crew was quite standardized as to members and functions with its fellers, buckers, swampers, and so forth. Is this still the case today? How has mechanization eliminated or combined functions or added new ones?

FRINK: Well, the old-time logging crew was quite standardized and quite large. With the advent of modern machinery, crews have been greatly reduced by mechanization, eliminating swampers and reducing the falling and bucking crews, loading crews and yarding crews.

MAUNDER: John Dolbeer, of Dolbeer and Carson, developed the Dolbeer donkey. Did that continue to be the pattern of development? Did loggers themselves develop their own machinery or did the machinery works do most of it? Was logging equipment designed to fit logging needs, or was other equipment adapted to logging needs? Were new logging areas opened up as equipment became available, or was equipment developed to fit new and difficult logging areas? In 1925 the Portland office of the Forest Service fastened a grader blade to an old tractor and thus invented the forerunner of the bulldozer. Do you know of similar cases of new developments or adaptations resulting from the ingenuity of the men on the spot in the woods?

FRINK: The Dolbeer donkey, while an improvement over yarding logs with either horses or oxen, was very slow in operation, and due to a demand for a faster yarder, first the single drum donkey was developed -- a horse still being used to pull out the hauling line. The horse haulback was later replaced by the double drum donkey, which not only speeded up logging operations but was badly needed to haul back lines in difficult spots where it was impossible to use a horse. An added improvement in the log hauling was the double drum road engine with large drum capacities to make long hauls of logs on skid roads and to replace oxen or horses used in such hauling. Another early development in log hauling was the development of high lead yarding, which, I believe, was first developed in Oregon and later adopted by the Simpson Logging Company and became in general use throughout the Northwest. These developments were followed by sky line

yarding operations that were developed in the woods, such as the North Bend system, the Tyler system, and later the skidder system, and so forth.

MAUNDER: Simpson seems to have played a rather important part, in your estimation, in the pioneering some of these things.

FRINK: Yes, he did. He first replaced oxen with horses, which he found much better than oxen. In my opinion, he was one of the greatest of the old breed of courageous and resourceful men of the Northwest.

MAUNDER: Can you give us a little bit of a firsthand picture of this man? What sort of a person was he?

FRINK: When I knew him, of course, he was a young man. I was much younger but he seemed young to me.

MAUNDER: This was about when?

FRINK: It was about 1894 and '95. He was a very wonderful man in my opinion. His dreams were carried on by Mark Reed, his son-in-law, and Reed's sons.

MAUNDER: Can you describe him physically to us? Was he a big man?

FRINK: He was of medium height, slender and wiry. A very remarkable man. He was my ideal as a boy, and a great friend of my father's.

MAUNDER: A real man's man, in other words?

FRINK: Yes, a real man's man. One of the courageous and resourceful breed of those times. We don't grow them like that nowadays although he has able grandsons who are carrying on his business and dreams in a remarkable way.

MAUNDER: In the early days the only power used in the woods was that generated by men or animals. Down through the years there has been the addition of steam, gasoline engines, diesel engines, and electricity. Today probably all of them could be found in use at some place. What were the hindrances to the use of each when it was originally introduced? What were and are its advantages and disadvantages?

FRINK: After the elimination of the horses and oxen from pulling logs into the landing, the steam yarder was brought into play about 1894 (that is, the steam single drum yarder) and some years later the steam double drum yarder and loader was introduced. This type of machinery was partially superseded by the gasoline operated yarder and loader and, in turn, superseded by the diesel yarder and loader. The Caterpillar-type tractor was also introduced and on the less rugged terrain sometimes superseded the steam or gasoline yarder. However, in rough country the use of the yarding engine, in our opinion, will never be superseded.

The tractors cut pretty bad roads, as you know, and the government timber agent is kind of opposed to it.

MAUNDER: To what it does?

FRINK: Well, it cuts deep roads, in a fan shape tapering to central loading points at the bottoms of the hills causing bad erosion condition.

MAUNDER: Did mechanization affect the number of men employed in the woods? What was the attitude of the men toward mechanization? There is the story of the sawyers who deliberately placed their new power saw where a falling tree would crush it. Was this a dislike of change or fear that power would eliminate jobs? Do you know of similar instances with other types of equipment?

FRINK: Mechanization of logging operations, like mechanization in any other industry, was at first resented in some camps. As an illustration that comes to mind regarding mechanization in the woods, our company, when I was a young chap, sold a double drum yarder to a logging company in the Grays Harbor district, where this type of machine had never been used. I was making a visit to the logging camp of this company and found that the double drum yarder was not being used. The reason given was that the haulback line was too fast, although the haulback lines on the modern yarder have a speed about three times that of the first logging engines equipped with the haulback drum. I talked with the logging operator and then secured a donkey operator for him from the North who had operated double drum engines, resulting in an order for another double drum engine from the aforementioned company. With the advent of modern machinery, the number of men employed in a log hauling operation or a log loading operation was materially reduced, but with the increased production necessary to supply the needs of the lumber industry, more men were employed by the industry. In some cases, the men were slow in their acceptance of modern machinery; however, in a very short time they became enthusiastic about it and in most cases suggested improvements to help the industry.

MAUNDER: What do you remember about the early days in this regard -- the IWW days before and during World War I? This takes us back to the beginnings of the Pacific Logging Congress and some of the things that were greatly discussed in the early days of that organization.

FRINK: The IWW?

MAUNDER: Yes. What was its attitude about these new mechanical developments:

FRINK: I don't think that the IWWs objected to them particularly. What they were opposed to particularly were the conditions in the camps. These were single men, loggers who were hired by bureaus in Seattle. A man went to the camp with his bundle of blankets, had a bunk to sleep in, and conditions were pretty bad, pretty rough.

MAUNDER: Do you think the IWW got its start from those conditions then:

FRINK: I think so, yes.

MAUNDER: Do you think it served any good purpose?

FRINK: Maybe, but conditions improve with age and experience.

MAUNDER: Do you think the IWW forced change, or do you think that would have come about anyway?

FRINK: It would have come about anyway, but the IWW probably forced it sooner.

MAUNDER: What part do you think the Pacific Logging Congress had in doing all this?

FRINK: I think the meeting of these organizations and discussing all these problems had a lot to do with improving conditions in methods of logging as well as in methods of operation in the camps and in improving the material comfort of the men, keeping them satisfied, introduction of women into the camps to serve their meals, pay checks weekly instead of monthly where they went off after a monthly payment and didn't come back for a week.

MAUNDER: The Pacific Logging Congress was a sort of crusading bunch at first, wasn't it?

FRINK: It was a dissemination of ideas of the best men in the industry, in my opinion.

MAUNDER: Was any particular region or group of operators more alert to development or use of new machinery and equipment? Why? Did this have any effect on the subsequent popularity or use of any particular species of wood?

FRINK: The development and use of new machinery applies more particularly to the Pacific Northwest since the principal manufacturers of logging machinery are located in this territory and the large stands of virgin timber allowed the development of new machinery in their backyard, so to speak. Methods developed in the Pacific Northwest are now used world-wide with slight variations for types and species of timber. As an illustration, our company has our modern equipment in operation in the Philippines, even in British North Borneo where we recently

shipped a trakloader. We had a letter from the manager the other day and he said, "This trakloader is an answer to a logger's dream."

MAUNDER: So you ship your machinery all over the world now?

FRINK: Not all over the world, but we have an operation in the Philippines and in British North Borneo.

MAUNDER: How about South America?

FRINK: A little in South America -- not much. Some in Africa; a great deal in Canada and Alaska.

MAUNDER: Was the use of new equipment and methods encouraged in logging government timber?

FRINK: I think only recently the use of modern equipment has been encouraged in the logging of government timber. The Forest Service has been discussing the elimination of Cats for yarding, for instance, to reduce erosion caused by Cat roads and the more liberal use, especially in the pine, of the haul-back line. They haven't been particularly liberal with the use of machinery, but I think they are coming around to a more liberal use of modern machinery that doesn't destroy timber, such as the combined yarder and loader.

MAUNDER: Do you think their judgments are based on local condition, or do they seem to have hard and fast attitudes on this matter that they apply regardless of what the situation may be?

FRINK: No, I think their opinion has been developed from actual experience.

MAUNDER: To what extent were the small and medium-sized logging operations able to adapt new methods and machinery? Were these new developments only feasible for the big operator? If so, how has this affected the character of the industry? Have new techniques and new machinery been susceptible to gradual price reductions that have brought them within reach of the smaller operator?

FRINK: I would say that practically all of the improvements in logging operations can be credited to the small or what we call today the "gyppo" logger. The big operators, in many cases, noted the costs obtained for logging by the gyppo and in many cases adopted his methods, which he's had to use to meet competition. The old rule of thumb for logging camps, for instance, in estimating production was 1,000 board feet per man per day. With the advent of modern machinery this has been increased to 8,000 to 10,000 feet per man per day. Now, as to price reduction of

equipment, like all other equipment in recent years, due to the continuing wage spiral of the past twenty years with the resultant increases in raw material costs, freight rates, taxes, together with added costs of improvements to logging machinery by manufacturers, the prices of almost all types of logging machinery have increased from year to year.

MAUNDER: How have you kept in touch with the gyppo logger in your business?

FRINK: Through our salesmen principally. Today a salesman is not like the old-time salesman; he's an engineering salesman. He goes out and gets these ideas from the gyppo or the small logger, or from any logger, or from the logging superintendent. Then he brings them in and submits them to the engineering department. Sometimes they're good; sometimes they're bad; but that's the way we develop new machinery.

MAUNDER: These men who are your representatives are on the prowl all the time looking for new ideas?

FRINK: That's right.

MAUNDER: In a company like your own how many such men do you employ going around looking for ideas?

FRINK: We only have salesmen in the state of Washington. In other territories we have agents. In the state of Washington we have five salesmen, and they're what we call "engineering salesmen." Today a salesman has to know something about equipment and machinery; it's not like selling eggs, or sugar, or flour.

MAUNDER: He's got to know something of the production problems of the men in the woods? And follow up on any sales that he makes?

FRINK: That's right.

MAUNDER: When did safety begin to be a noticeable factor in the woods? Who took the lead -- any particular company, trade association, labor union or individual? What was done? What part have the machinery operators played in increasing safety factors?

FRINK: Safety in the woods, in my opinion, has been a gradual development and the lead was taken principally by state laws. Labor unions became safety-minded and this was then taken up by the larger companies. This forced the small operator to follow suit. Some of the first safety laws applied to machinery, such as gear guards, and so forth, including improved boiler

construction. These were the first safety devices used, as I remember, in the woods. In recent years they have been applied to blocks and other equipment.

MAUNDER: To what extent have the machinery manufacturers tried to take a leading part in dealing with safety measures?

FRINK: Well, I think they have taken a leading part. We use every safeguard. There's the ASME Code of boiler construction. We don't make many boilers today, but the same thing applies to all equipment. We're all safety-minded; in our own plants we have safety inspectors, and state safety inspectors come around. The same thing applies in the woods. Oregon has safety measures in regard to logging blocks, which are generally followed by the manufacturer.

MAUNDER: Is the manufacturer aware of his responsibilities in regard to safety factors which may be involved in the use of new machinery he makes? To what extent does he put new products to the practical test before putting them on the market?

FRINK: Yes, we have to. When we get out a new model machine, we have to try it out in some camp and test it out for its various safety features as well as other features -- like going downhill, for instance. A crawler tractor must be safe going downhill as well as going uphill.

MAUNDER: Are these tests made under certain conditions which you set up yourselves as manufacturers, or are they tested out in actual logging operations which are under the control of other logging companies?

FRINK: When we build a new machine, we generally test it out in the woods by logging companies.

MAUNDER: In other words, you don't do the same sort of thing that automobile companies do? You don't have a test ground of your own?

FRINK: No, we don't. We test the pulling power, the breaking power, and things like that in the shop, but we don't have the facilities. It's not an item that can be tested, so we send men out into the woods with it and test it under operating conditions.

MAUNDER: What inventions, machines, or developments in technique do you consider have had the most revolutionary effects in the woods?

FRINK: That's hard to tell. Each development in the logging field has reduced costs and has had its turn in the revolution of the logging industry. When industry changed from ox and horse hauling to steam, this reduced the cost and it was reduced with each change thereafter, such as the railroad, the gasoline propelled machinery, diesel propelled machinery, and later with the diesel power units driving through the torque converter and planetary gear changes, and finally, the mobile type combination yarder and loader mounted on crawler or rubber mounted undercarriage of today. We should also mention the development of the chain saw for bucking and falling.

MAUNDER: In which of these new developments that you've cited has your company had the greatest influence?

FRINK: The improvement in logging machinery cannot be credited to any one person or company. Improvement in methods and machinery are the result of sharing of ideas by the loggers, both large and small, by master mechanics, especially by superintendents, and machinery manufacturers. Some of the ideas used today were originated with superintendents; some have been originated by the machinery manufacturers. The Pacific Logging Congress, and other smaller and like associations, have played a big part in the dissemination of improved methods of logging in various types of timber stands.

MAUNDER: It is said that while the lumber industry traveled from east to west, the development of logging machinery traveled from west to east. Do you agree with this, and if you do, why?

FRINK: Most of the development of logging machinery, in my opinion, developed from west to east, with the exception of the Lidgerwood tower skidder system and the Lidgerwood patented skyline carriage. The Lidgerwood was later improved upon when the patents ran out by the introduction of the Berger patented slack line carriage and the use of spar line trees in place of the tower as manufactured by our own company, the Washington Iron Works, and other companies.

MAUNDER: In the history of logging methods, whom do you view as the men who have made the greatest contributions? Where did they come from. What has been their background, their training? To what do you attribute their success? Which of these men are living and might provide information by tape recorded interviews?

FRINK: Personally, I consider Sol G. Simpson the greatest of all the loggers that I have known through my life. Not that he was a great developer of improvements in logging machinery, but he seized upon each one. Not only that, but he's one of the few

loggers who retained the lands over which he logged and for which he dreamed -- although he probably didn't call it tree farming in those days he dreamed of it undoubtedly. And his son-in-law and grandsons have carried on and developed the great Simpson Logging Company with their tree farms -- perpetual logging. There are other great men in logging like my old friend Tom Bordeau, Ed English, Mark Draham and many others. But I think of all these loggers the man with the greatest foresight was Sol G. Simpson. Now, speaking of who developed all this, that's pretty hard to say. I don't wish to talk too much about my own company but the Washington Iron Works has contributed, through the development of steam yarders and loaders, the tree and diesel tower, the duplex loader, the duplex flyer or slack line machine, gasoline and diesel yarders. During these years, the two most important developments were the torque converters in logging machinery and the mobile combination yarder and loader, known as the trakloader. Our people, speaking for the Washington Iron Works, were raised and educated in the Northwest. Hence, we've probably had the best opportunity to know the logging industry. I don't know that I would credit the development of new methods to any particular firm or individual.

MAUNDER: It's something that's just grown gradually with a lot of different people and a lot of different companies contributed?

FRINK: That's right.

MAUNDER: What part have cost analyses played in determining logging methods? How long has it been used in the industry?

FRINK: The costs of logging are now determining the methods to be used in logging, and it is becoming more and more necessary as logging moves into more rugged and inaccessible terrain. Logging concerns have become more cost conscious through competition and changing logging methods where old methods of estimating logging costs will not apply. In the larger companies the logging superintendent generally submits his estimate based on production required in any new area to be logged on a yearly basis, also type and amount of any additional machinery required.

MAUNDER: During the depression when prices were down, we know that many companies continued to operate although they were losing money. During such a period are there changes in methods or use of machinery as a result of those conditions? If so, what about less dramatic periods, for example a year or two in which there is a slight sag?

FRINK: In all periods of depression when lumber prices are down, logging operators are forced to operate at a loss. In many cases it might be found that these losses were covered by over-runs and down-grading of the logs produced. These losses you refer to were generally followed by an increased demand for improved logging machinery for reducing costs of production. As our company is closely identified with the lumber industry, we also suffered losses during depressed periods in the lumber industry, and during these periods our engineers had sufficient time to develop and design new and improved types of machinery to reduce logging costs. This would also apply to depressions of shorter duration, such as the recent recession.

MAUNDER: What important changes in logging methods and machinery do you see as the coming trend? What economic or other forces are moving these developments? What groups, organizations, individuals do you consider the leaders in these trends?

FRINK: We believe the most important changes to be made in logging methods and types of machinery will be governed by the trend of the industry to use more of its waste and smaller logs. This will probably force the use of more portable chippers and portable logging machinery to eliminate the hauling of waste, such as bark and small limbs. These developments, however, in my opinion, will be made slowly and will be governed entirely by the demand from the development of such items as hardboard, flake board, pulp, and possibly other new items developed by the lumber industry.

MAUNDER: I wonder if we couldn't go back now and do a little reminiscing purely out of memory of your own personal experiences over more than sixty or nearly seventy years of experience in this business. First of all, will you start out by telling us the origins of your family. Where did your family come from, and how did it happen to get settled out here in the Pacific Northwest?

FRINK: My father came first to California and then he came up to Washington in 1875.

MAUNDER: Where did he come from?

FRINK: He came from Pennsylvania originally, and then Kansas, then moved to California and came up the coast. Then he worked at various things; he dug wells in Seattle; he worked on the coal bunkers, and finally opened one of the first schools in Seattle in 1876 -- the old North Seattle School. Following this he was selected as a school teacher in Port Gamble. While in Port Gamble he became acquainted with a foundryman in Seattle who sold castings to the old Puget Mill Company, and on the promise of Mr. William Walker, the manager

of the Puget Mill Company, that he would get the Puget Mill Company business, he went into partnership with Mr. Tenney in 1881. The firm was first called Frink and Tenney and then became the Washington Iron Works, Inc. in 1882. He didn't know anything about the machinery business but that's the way he became identified with it.

MAUNDER: Didn't you say earlier that he was a minister at one time?

FRINK: No, his father was a minister. You might be interested in the name "Iron Works" because in those days there was no such thing as steel except for cutting tools; the steel age didn't begin until the late eighties.

MAUNDER: The principal reason for a business of that kind out here in the eighties then was what?

FRINK: To serve the sawmills. Some of the first orders we had were for sawmill engines for the old Port Blakely Mill Company. We built mill engines -- horizontal mill steam engines. The first logging engine we built was about 1894. It was a single drum yarding engine to improve on the Dolbeer engine, followed by the double drum yarding engine and double drum road engine to replace oxen.

MAUNDER: Where did these early mills get their machinery before there were local machinery manufacturers?

FRINK: They had to obtain it from the East.

MAUNDER: But this was the first West Coast source of supply?

FRINK: We were one of the first, yes.

MAUNDER: Who were some of your competitors in the early days?

FRINK: Willamette Iron and Steel Works in Portland, which was formed in 1876. Our firm, the Washington Iron Works, is one of the few firms in the United States that has had the same family control for seventy-five years. I don't suppose there are over six metal trade firms in the United States in which the same family management has gone down for seventy-five years.

MAUNDER: Has your company history ever been written up?

FRINK: No, I don't think so.

MAUNDER: Have you ever considered writing it up?

FRINK: Well, I'm writing a little history of the family now.

MAUNDER: This would be a great thing to do, you know. This is so much a part of the history of this region that it would be a valuable thing to put into print.

FRINK: Well, I could get somebody to write it like Holbrook,* who wrote the Simpson Logging Company history.

MAUNDER: Have you any substantial number of old records that could be used as documentary sources of your company history?

FRINK: No, not too many.

MAUNDER: What's become of all the old records?

FRINK: Well, you destroy them. You know, today in these modern times you get so many records that you have to destroy them about every five years or you'd have to have a warehouse to store them -- just correspondence alone.

MAUNDER: Not if you just throw away the worthless and keep the small per cent that is historically valuable. Only about five per cent is historically valuable. You ought to save that part anyway.

FRINK: Yes, one should, but you have to get somebody interested. You know, these modern youngsters are not much interested in history. They're living tomorrow, not today or yesterday.

MAUNDER: Your own state university here would be interested. Have you ever thought of that -- of turning over to them your old records as you no longer want them?

FRINK: I've turned over some things to the Historical Society.**

MAUNDER: What sort of things have you turned over to them?

FRINK: Things from our old home -- things from the Gay Nineties, Victorian period, that you never hear of anymore.

MAUNDER: Old pictures?

FRINK: No. They have an old fireplace from our old home and quite a few other items at the Historical Society.

MAUNDER: But you don't have any old minute books, or pictures of your early machines, or things like that?

*Stewart Holbrook, GREEN COMMONWEALTH. Seattle, Washington, 1945
**Washington State Historical Society at Tacoma

FRINK: Yes, I have some. I meant to bring up some pictures which I was going to give to you. I'll send them to you if you wish.

MAUNDER: I certainly wish you would.

FRINK: There are pictures of the old single drum donkey we got up, and the double drum donkey.

MAUNDER: When you send us those pictures, will you identify them and give us the dates or the approximate dates when they were taken?

FRINK: I'll be glad to do that if you'll drop me a line and give me your address.

MAUNDER: Have you ever thought of employing somebody to write your history?

FRINK: No. My children are not much interested in history.

MAUNDER: But you are.

FRINK: Yes, but I'm a different generation. It's just like I'm writing some stories here that you might get a kick out of if you're interested in history, but I don't know that my kids would get any kick out of them. My daughter will, I think, but I've never even showed them to them.

End