

Ed Heacox

An Interview

conducted by

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This is Elwood Maunder speaking in Tacoma, Washington, and it is Friday, August 11, 1967. I'm interviewing Ed Heacox, former chief forester of the Weyerhaeuser Company, recently retired from that role in July.

MAUNDER: Let's just kick off this interview with you with a few comments you might have to make about Charles H. Ingram and John Wahl and their role as you saw it in the Weyerhaeuser story. Would you just spin out a little bit about that?

HEACOX: Yes. I think John Wahl first started working for the company in the old Clemmons Logging operation down in Grays Harbor. He worked there for several years and then went to Snoqualmie Falls and eventually became logging superintendent at Snoqualmie Falls under the general manager there, whose name was Tip O'Neil. He subsequently moved to the Vail McDonald operation and became logging superintendent and manager of the operation and then, I don't know the year, but he later came to Tacoma as an assistant to Charles Ingram in the general area of woods and timber and forestry matters. Mr. Ingram, as general manager of the company, had no staff at all in Tacoma. Of course, there was the usual run of supporting departments in accounting and law, and after 1936, industrial relations and public relations but they were relatively small and didn't operate too closely with the general management of the company. They had their own functions to perform. So that after Mr. Ingram brought John Wahl into Tacoma, he relied very heavily on John and there was a very close personal relationship between these two men. You might almost say that Mr. Ingram being in sort of a one-man-show felt the need to have someone to whom he could talk about a lot of matters and on whom he could rely for information and judgment with respect to all things pertaining to the woods operations, and probably even going on over into some of the other business affairs of the company. In any event this relationship placed John Wahl in a unique position which carried probably considerably more authority and responsibility, or at least influence, in logging, forestry, and timber matters in the company, than would normally be the situation in that kind of position.

MAUNDER: He was a remarkable and almost a legendary figure in this field. What made him so?

HEACOX: Well John was one of the innovators in the logging business. He was a man who, like most logging superintendents of the day, was relatively uneducated but still with a very high degree of native intelligence. And in contrast to many other logging superintendents, he was always looking for something new to try and he could very well be classed as one of the leading innovators in the logging industry during his era.

MAUNDER: What innovations do you associate with the man?

HEACOX: Well, for example, he was one of the first men in the logging industry on the west side of the mountains, particularly up in the Cascade Range, to go into the truck logging business. There had been some other truck operators mainly in the smaller timber down along the coast in the Astoria area and in other areas, and there had been truck logging in California. But, so far as going into the rugged Cascade Mountains and developing truck operations, I think John was one of the real pioneers in the business. He tried some things that didn't work and some that did. For example, when he first started in the trucking business, he had trucks with four wheel trailers behind them, so he would haul a load of logs on the truck and another load of logs on the four wheel trailer behind the truck. This turned out to be not quite so successful but nonetheless he did pioneer the truck logging business certainly in Weyerhaeuser and probably to a high degree in industry in general here. The transfer of truckloads of logs directly to railroad cars; I'm not sure that John was the first to do it but I think he was. And in any event, within the group of Weyerhaeuser operations, he was certainly the leader in developing this technique and was doing it long before our other branches were, and he developed his own novel ways of doing this which in later years most of the other companies copied.

He was one of the first to use power saws in the Douglas-fir region, when most people were saying they're fine for the redwoods and they'll work fine in the pine country east of the mountains, but it will never be successful here in the steep rugged Cascade Mountains and these great trees we have here; well, maybe we can use them to fall with but we can never use them to buck the trees into logs. John

says we can use them, and he did, and so this was another area in which he pioneered in the Douglas-fir region.

MAUNDER: This is always one of the toughest jobs, isn't it, to overcome the resistance of men to change?

HEACOX: Absolutely.

MAUNDER: Wherever you find it, in business, in management, or out in the woods. And what was it about John Wahl that made it possible for him to overcome this resistance to change?

HEACOX: Well, that's difficult to answer but John was a very forceful man to begin with. He was a very likable man. Like most of the men of his day, he rose to his position by fighting and clawing his way to the top but he was resourceful, he was energetic, he was respected, and I think he was always looking for a better way to do the job, whereas so many of the men, particularly in an industry which is dominated by relatively untrained and uneducated people, are more content to do things the way they have been doing them. They develop a system that works and they hate to move on to something untried. But John was really always looking for a better way to do something.

Another thing that he tried in his operations at Snoqualmie was to abandon the big old sleds that were typical of the high lead yarder arrangements here in the Cascade Mountains. He used old railroad axles and railroad wheels and cut the flanges off with cutting torches and in this way made up real heavy parts made out of four or five axles of railroad wheels. This gave the weight to hold the yarder down so they could pull the logs and at the same time made it more mobile than the sleds, which were 70 or 80 feet long. They could be maneuvered around the spar trees easier and moved from one landing to the next much easier. Of course, there were many improvements made on it in later years but this was the start of it; of abandoning the sled and going to the wheeled type of yarder base. So these are some of the things that John developed while he was actively managing logging operations both at Snoqualmie and at Vail McDonald.

MAUNDER: Is there a gadget on a spar tree that's known as the John Wahl? Do you know what I mean?

HEACOX: No, I don't. I don't associate that with John Wahl. I don't know.

MAUNDER: I have heard it referred to as a John Wahl. It has something to do with the hanging of a block on a spar tree, making it safer to operate. I can't exactly describe it. I just know that in the field there are some people that refer to this as a John Wahl.

HEACOX: Well, this I didn't know but it could very well be. I think another matter of importance in this connection is that when John came into the Tacoma office, into the corporate office of the company as a sort of a general woods manager, although the actual operations were still under the direct control of each one of our individual branches, John brought with him this interest in trying something new. He spent a great deal of his time encouraging and taunting our other logging managers into trying these new things--whether it was partial cutting, or prelogging, or falling by stages to cut down the breakage, or putting cables on some of the big, very valuable trees that were leaning badly so they could let them down easier and reduce the breakage. They even at one time put metal bands around the butts of the big cedar trees and cinched them up real tight so that when they fall these large cedar trees that tend to shatter, that reduced the breakage. These were other things that John had a hand in developing and that were used quite extensively. So John carried his inventiveness and interest in trying new things over into his work here in Tacoma when they expanded, of course, into all of our operations.

MAUNDER: Well, I don't want you to spend all of your time here this morning talking about John Wahl and Charles Ingram because one of my aims here today is to get you to talk about the history of forestry, industrial forestry in this company and in the region itself. And I think it would be a good idea if we'd start out on that by sketching a little of your own personal history to give us a background.

HEACOX: Well, I was born in a little town called Britt in Iowa, up in northern central Iowa. It's near Mason City. That's the way I generally describe it, and my father was a dentist in this town, and I grew up in this small town and worked on the farms in the summertime and during vacations. I graduated from high school there in 1924 and that fall I started school in Ames as it was known then, in the department of forestry and after about six years in and out of school, I was graduated from Ames Forestry in 1930. In those days there was really only one outlet for foresters and that was in the U.S. Forest Service, the rare exceptions being the one or two who went into the state forestry department. But by and large, the Forest Service provided all the job offerings.

MAUNDER: You came out right in the Depression, didn't you?

HEACOX: I came out in the Depression period, right. And I finished school in March and there were five or six of us who graduated at that time off-season.

MAUNDER: March of 1930?

HEACOX: 1930. I think it's of some significance that but six or seven of us who graduated at that time got work and of those who graduated in June of that year, very few did. I mean, the economics of the situation were deteriorating so rapidly that in a short three-month period the jobs just disappeared. But, I was somewhat of a maverick in the forestry school in that, for reasons that I can't really understand or explain myself, I didn't want to work for the federal government. I wanted to work for business and the whole forestry course was designed about training men to go into the Forest Service. One of the major courses in the senior year was a long seminar which was a review of all the Civil Service examinations to prepare us for work in the Forest Service, and it caused some small furor in the school when I refused to take this course or to take this examination. They threw up their hands and said, "Well, where are you going to work? You've just wasted your time here." And it looked for a long time as though I had, but somewhat as a last minute occurrence, an earlier graduate of Ames, and I don't know his name, came from Alaska and stopped in Spokane in the Weyerhaeuser sales office there. Then he stopped at Ames and then he went on his way to Washington, D.C. And in the process he said Weyerhaeuser was going to start what they called a sales training course and take some young men out of college and train them to be salesmen. So to make a long story short, I got in on this program and came to Longview, Washington the week after graduation and started in with Weyerhaeuser and this is the only place I worked all during my career.

MAUNDER: Who is the man who interviewed you for the job?

HEACOX: It was I. N. Tate.

MAUNDER: In St. Paul?

HEACOX: In St. Paul. He didn't interview me but I had correspondence. He was in Spokane at that time and later was in St. Paul. But all of this was handled through correspondence and my recollection of the correspondence was that each time I'd write to Mr. Tate, I'd say I'd like a job and he'd write back and say well you can have the job but we don't really recommend that you take it because business is so bad and getting worse; that the future is very dim in the lumber business and we think you're making a mistake to take the job, but if you want it you can still have it. This went on three or four times. And so, in any event, I accepted the job and was assigned to the Longview Branch of Weyerhaeuser which had just started up. The mill had been completed I think in November of 1929 or about that time and I arrived there April 1, 1930. The idea at the time was that I would work on some of the fir operations on the coast and then go into the Inland Empire and some of the associated companies of Weyerhaeuser--Potlatch and Boise--and work in the pine mills and in the process be training myself to be a lumber salesman. It didn't work out that way. I arrived on the job and reported to Mr. Sam Johns and I thought this over very carefully, and I told him that I'd taken the job under false pretenses because I had no intention of ever becoming a lumber salesman. I wanted to get into the forestry industry and I thought that this was a way of doing it. I decided that I'd better make a clean breast of things right at the outset rather than to try to delude him any further. So he hemmed and hawed and said you'd better wait until some of the other managers come in so in a

few minutes Harry Morgan, Sr. and Al Raught, who was the general manager, came in and Mr. John said, "Here's a young man who took a job as a lumber sales student but doesn't want to be a salesman. What are we going to do with him?" Well, both Mr. Raught and Mr. Morgan said, "That's just the kind of a guy we're looking for. Any man who has a college degree and doesn't want to be bond salesman or a lumber salesman," he said, "that's the kind of man we need." So this gave me some relief because I had visions of not even being able to get a job to begin with. So I went to work in the mill in loading shifts just doing common labor and about a month later Harry Morgan came by and said, "Are you the young man who didn't want to be a lumber salesman?" and I said, "Yes." He said, "Why don't you go into the purchasing department. We're going to be building a new pulp mill here and we're going to have to have some extra help in the purchasing department and we're looking for a man. Maybe you could fit in there." So I have vivid recollections of that. I went in and applied to Mr. McPhail for the job and he said, "Well, you'd better think about it and let me know in the morning what your answer is." And in the meantime he told me that the pay would be \$110 a month and I had made up my mind if I could get \$90 I would take it. So I said I could tell him right then I wanted the job and he said, "No, I want you to think about it tonight and come back in the morning." And I said, "No, I want the job." I was afraid somebody else might get it. But he wouldn't accept my answer right then so I came back at 7:30 the next morning and said I wanted the job. And he said, "Okay, you can go to work." So I worked in the purchasing department at the Longview operation for about two and a half years, the pulp mill was completed, it was right in the depths of the Depression and they were laying off men right and left. The men in the mills and the woods were working one and two and three days a week. The work was prorated out to them. Men with years of experience were looking for jobs and in the meantime I had been able to stay on but when the pulp mill was completed I could see the end coming to this.

MAUNDER: What were you doing in the purchasing department? Can you give me a little detail of the kind of work you were doing?

HEACOX: Well, I'll have to say when I went into that office, I had probably less business knowledge than any college graduate that ever hit the industry. I didn't know an invoice from a voucher and I didn't know anything about cost accounting. Nobody could have known less about it than I did and I had a real hard struggle making the grade at all but eventually I began to catch on to what was wanted and first it was just handling the so-called pick-up purchases of the nuts and bolts and screws and stuff that were fairly stereotype purchasing. The salesmen came in and we gave them the orders based on the requisitions we got from the millwrights and the warehouse and so forth. Later on I combined with the woods which included the cookhouses and the logging equipment and all of the general run of purchases for the woods operations.

MAUNDER: Which was quite a bit of responsibility.

HEACOX: There was quite a bit of responsibility. There were four or five of us in the department and yes, I'd say there was quite a bit of responsibility. As the pulp mill was completed they began to reduce forces in the purchasing department. Being one of the last men to go in there, I could see the handwriting on the wall and was reading the classified ads in the Oregonian every day but not with much success. But, again good fortune stepped in and having been doing the buying for the woods, I had quite close contact with Ed Baker, who was the general woods superintendent. So as my job in the purchasing department began to vanish, he said we had to set up some kind of an organized method of handling our materials in the woods. We didn't have a warehouse, we had a storehouse so the materials came up there and they were scattered all over the woods and there was a big woods operation--about 1100 or 1200 men in several different logging camps. So he said, "Why don't you take a whirl at coming up and setting up a system for us. This will at least take a year or so and that will give you at least one more year of work." So I took that job and this was the time when not salary increases but salary cuts were coming along fairly regularly and so by virtue of moving from one job to the other I at least held my own. I'd get a salary cut of 12 1/2 percent and then maybe a couple of months later I'd get a little increase and so I weathered the Depression in that fashion taking alternate salary cuts and increases. So I went up to the woods then and I spent about two years gathering together all the spare parts that were scattered all over the woods buried in the mud and in the bunkhouses, scattered around the different camps and construction camps

way out beyond the end of the railroad. I got all of the machine parts and brought them into the warehouse and set up as system for handling the maintenance and equipment and supplies.

MAUNDER: This was an area of great inefficiency.

HEACOX: Well, it couldn't have been any more inefficient. It's hard to describe but here was an inventory of, even in those days, a couple of hundred thousand dollars of spare parts: brake lining for skidders, everything from rig sprockets and gears and drums and wire and rope down to nails and bushings and nuts and bolts and rivets for brake lining were just scattered all over the woods, much of it lost, buried in the mud and probably a lot that we never did recover. But the operation was just getting going and it was a swashbuckling, fast-moving thing. But the need was great and it was easy to see what was needed and we simply went out with trucks and cats out in the mud and got these pieces and spare parts and got bunkhouses and flatcar loads of stuff that was scattered around all the camps and brought it in to one central point at headquarters and set up a storehouse and a method of receiving and disbursing and ordering and buying and selling.

MAUNDER: This was a major innovation for the men out there in the woods.

HEACOX: Oh, yes.

MAUNDER: How did they respond to that?

HEACOX: Oh, I can just give you one instance as to how they responded to it. At one of our camps, there was a bunk house that was being used by the donkey doctors. It was full of spare parts and little pieces, boxes of rivets and nuts and bolts and nails and big pieces of equipment and they liked to have that right there with them. They didn't like the idea of having to order things from the store house at headquarters. Anyway, we decided to bring that down to headquarters and make it a part of the store. So they talked to the people who were going to bring it down. They got an old locomotive train and they came in and lifted this big bunkhouse up onto a log car and brought it down to the warehouse headquarters and when they got it down there, they lifted it up and pulled the car out from underneath it and then they just shook it. All the stuff came down. Tons of material just came down in a great big pile on the railroad track beside the warehouse. So I and my helpers had the job of sorting it out piece by piece. But there was the normal amount of resistance bringing this equipment together and developing some kind of order out of chaos. But it was over very quickly and once they got it set up and all they had to do when they wanted something was to send in an order and it came to them on the next feeder, they liked it better of course than having to go out in the mud and dig it up themselves and wonder if they had it.

MAUNDER: So the system recommended itself rather quickly.

HEACOX: So, I did that work for a while and after we got the thing going, it happened the master mechanic at the headquarters shop was in poor health and was off the job a good deal. So Ed Baker called me down one day and said, "Ed, you're doing a pretty good job on this warehouse, now I'm going to put you in charge of the whole works up there; the shop and the warehouse and the whole works and you're the boss of everything on that side of the track, the carpenters and the whole deal."

Well, I was a pretty young man and we had about 40 men in the shop crew divided into two shifts; they had night shifts and they were working all the extra time they could get. They were overworked to the point of being worn out just to try to make enough money to live on. I mean, everybody worked as much overtime as he could get. It was all straight in those days. So, to put a young fellow like myself with absolutely no background and experience in mechanics in charge of that machine shop where we were overhauling those big skidders and overhauling railroad locomotives and rail cars and all the blocks and rigging and so forth--caterpillars, diesel shovels. It was quite an undertaking for me and obviously didn't meet with the wholehearted enthusiasm of the crew. But I made it work by getting the crew together and saying: "All right, I don't know how to change the flues in a boiler. I don't know how to time the valves on a locomotive. I don't know how to rebore an engine for a bulldozer or for a diesel shovel. You men know how to do these things. All I'm here to do is to try to get some order to it and to help you do your work and

if we can work on that basis it will work fine. If it won't, then one of us is going to have to go and I don't intend to go. And so we went along for a period and one instance came up, a man who was a very highly qualified man got me to help him on a job with riveting a frame for a tender on a locomotive and the next day he came in and said the rivets didn't hold and I hadn't done a good job and he was going to tell the boss and get me fired. I said, "Go right ahead. But," I said, "I'll tell you first of all, you're fired. You're not playing the game. So, when you go down to talk to Ed Baker, you just tell him you lost your job and I'll take my chances." So he did, he went down and he said, "Ed, that young so and so up there fired me. Can you imagine that?" And Ed said, "Is that so? I guess you're fired." And so with one experience in an area in which I was green as could be, it worked out satisfactorily and from that time on we got along fine.

MAUNDER: It didn't take long for a story like that to get around the camp.

HEACOX: Not in a small camp like that. So, I continued on then as master mechanic until our bail operation closed down due to the lack of business. It was during the Depression and they brought the man who is a very competent master mechanic and shop foreman superintendent down from Vail to take over and he was obviously so much better qualified for it than I was that it was a good move on the part of the company. He was more entitled to the job than I was. He knew the job. I didn't. So I was master mechanic there for a year or so.

Shortly after that Mr. Rock called up and said, "There's a job coming up in Weyerhaeuser Logged-Off Land Company in Tacoma and I don't know anything about it but you told us when you came here that you wanted to get into the forestry business and we're not in the forestry business, but they asked me if we had any possible candidates for it and I thought of you. So if you're interested in it why don't you go and talk to them about it?" So I came to Tacoma and talked to a man by the name of Mr. A. F. Firmin, who was the manager of the Weyerhaeuser Logged-Off Land Company, which was the wholly-owned subsidiary which took over the land after it was logged and really the main objective was to sell it off to agriculture or for some other purpose--grazing land or suburban property or whatever we could do with it. It turned out that in connection with the NRA which had been passed some time previously, they had to have some additional help in the Logged-Off Land Company, which was the department which was in charge of encouraging the company to comply with the woods requirements of the NRA to enable us to get the additional bonus cut in our mills. So, the job was not really very clear cut. As he described it to me, it was appraising land for sale, examining land for forestry possibilities, doing some land selling, doing some surveying, doing some subdividing and also helping out on this NRA code work so in the process of applying for the job, I decided to talk to a couple of other men.

I talked to Mr. Chet Chapman, whose title was chief forester of the company and who had been the first U.S. Forest Service regional forester in Portland, Oregon, having graduated from Yale Forestry School and who was probably as close to the general forestry situation in the region and in the country and certainly in the company as any one man could be. And his comment to me was simply this, "If you're interested in outdoor work I'd suggest you take that job but if you have any illusions about getting into the timber growing business in this company I can't recommend that you take it because our main job here is to liquidate this timber and this is what the owners want and I don't see very much chance of this company going into the timber growing business for a long, long time, if ever." Well this was as I say, probably the most knowledgeable man. He wasn't saying what he wanted to say. He was trying to say he was facing the facts and trying to tell me what I would be facing if I took this job. So I talked to Mr. Raught after I came back to Longview and he said the same thing. He said, "if you like outdoor work I think that would be a good job for you but I don't think you should take it with any feeling that you're going to get into the forestry business because we're not going to do it." He said, "We're going to try to do a better job of protection against fire and all these other things but the time just isn't ripe."

MAUNDER: There wasn't the degree of profitability yet in the industry.

HEACOX: This was in 1934 and if I'm not mistaken this was financially the poorest year that Weyerhaeuser had ever had up until that time and has ever had since. It was right in the depths of the Depression so far as the lumber industry was concerned.

MAUNDER: You mentioned doing some work at this time in relation to the NRA and the Lumber Code Authority. What exactly was that work and what contacts did you have with the regional representatives of the Lumber Code Authority?

HEACOX: The part of the NRA that I'm talking about, as you well know, is Article Ten of the code and incidentally Mr. Chapman was one of the men who helped formulate Article Ten of the Lumber Code, he and a number of other people in the region, so he was thoroughly familiar with the situation. But, under the Lumber Code, there was a committee set up in Seattle called the joint committee that was jointly sponsored by the West Coast Lumbermen's Association and the Pacific Northwest Loggers Association. This committee was given the responsibility of policing the lumber industry for compliance with Article Ten of the code and a man by the name of Russell Mills was the first, you might say, officer or agent of this joint committee. His job was to go around to the logging operations and to determine whether or not each logging operation was complying with the standard set up under Article Ten of the code because there were different ways an individual company could get an addition to its allowable production quota and one was to conform to Article Ten which set up minimum forest practice standards--and they were a minimum. It also had to do with a prompt and controlled slash disposal, with leaving seed areas to reforest the land, and with minimum provisions for protecting against fire, such as having tool boxes and building trails, and so forth in advance. So any company that was seeking a bonus production quota for its mill had to conform to Article Ten of the code, and the joint committee was the policing agency. It was an industry committee but they had to police it and some companies were not allowed--I mean some branches were not allowed the additional quota because they did not comply with this. So it was a self-policing idea. Well, of course, the code was very promptly deemed to be unconstitutional by the Supreme Court.

MAUNDER: In 1935.

HEACOX: Yes, in 1935. So when it went out, the industry then decided to continue to promote the minimum forest practices standards that had been set up by Article Ten and so the joint committee stayed in existence and a group of people were doing this policing for the joint committee. Warren Tilton followed Russ Mills and then later on Bill Hagenstein and this joint committee eventually evolved into what is now the Industrial Forestry Association. The Industrial Forestry Association is a direct offshoot of the old joint committee.

But we were doing the same old thing, you might say, within the company that the joint committee was doing for the industry. In other words we had one or two men from Tacoma who were making the rounds of our operations and were trying to persuade our logging superintendents in every way we could, to live up to those minimum standards and even get them to do more--whatever we could get them to do in the way of leaving seed sources and doing something positive and concrete and direct with the objective of maintaining timber on the land, growing more trees. Looking at it from today's standpoint, it was a minimal effort but it was an effort in the right direction.

MAUNDER: Do you think this was generally true throughout the industry or was it more true in the Weyerhaeuser Company than in other companies?

HEACOX: Well, I would say that there were a number of companies who were leading the way both in keeping the joint committee active in the policing role--not so much in the policing as in the encouraging role. The joint committee ceased to be a policing body and became a group whose function it was to encourage industry, small and large, to live up to these standards. And so it was in our company (the one or two or three of us who were working at different times under Clumure (name unclear) had no authority). When we went into our branch we couldn't say to our logging superintendent you've got to burn slash, you've got to maintain fire tool boxes, you've got to leave seeders. We could only encourage them to do it and try to persuade them to do it which is what we did. Now, I got off from your questions.

MAUNDER: What was the attitude in other companies of the region toward this portion of the Lumber Code? Who were those who seemed to be pursuing the same course that you were and who were those who were not as active in pursuing it?

HEACOX: I would say that my recollection was that the ring leaders in pursuing this in addition to our own company were St. Paul and Tacoma, Simpson, Crown Zellerbach, and Booth-Kelly down in Oregon. It's a little difficult to draw the line.

MAUNDER: It fuzzes out.

HEACOX: It fuzzes out but there were a few companies who were really pushing.

MAUNDER: These were the companies that now 30 years later, come back to you as being the leaders?

HEACOX: Yes. Those are the ones.

MAUNDER: We recognize here that you could be forgetting somebody who ought to be included in the list.

HEACOX: That's correct.

MAUNDER: Now, there were other areas which were definitely not cooperative.

HEACOX: I would say it ranged all the way from the few of the companies that were trying desperately to get this thing going to those who couldn't care less and it depended a lot on their situation. Obviously a company like Weyerhaeuser who owned at that time (I'm guessing now), probably 2 1/2 million acres--probably 2 million acres of land--had a real problem facing them. They had a very substantial acreage of cutover land and they didn't really know what its ultimate use was going to be. I might say at this point, say along about 1933, 34, 35, 36--say 1935 was the point at which I think the forestry program began to really take root in the Douglas fir region and there were enough leaders in the industry who began to say to themselves, we've got to do something. We can't just cut out the Douglas fir region and leave it like the southern pine region or the Atlantic states have been left for many reasons. For one thing at that time the federal government, of course, was making absolutely no bones about the fact in public statements; the Forest Service representatives and the Department of Agriculture representatives were saying this industry is going to have to be policed. The government is going to have to own a lot more of the forest land than it now owns, so part of the New Deal program was to substantially increase the percentage of federal ownership of forest land and to control and regulate all of the forest land that was left in private ownership.

MAUNDER: It failed in accomplishing that end in the Lumber Code, didn't it, because the Lumber Code Authority was in a sense industrial self-government under federal regulation. And the lumber industry had a great deal to say about what the Lumber Code was going to be.

HEACOX: Oh yes, the Lumber Code, Article Ten, of the NRA Code was written by oh, Col. Greeley played a large part in it, Chapman, David Mason was a big factor in it, George Drake, Simpson, and many other people. There were a lot of people involved in it but it was industry conceived and sponsored and developed and policed.

MAUNDER: And it seemed to me as a longtime observer that it broke down not so much from a failure to comply with the regulations under Article Ten, as it broke down in other areas of the code having to do with prices that were maintained and the volume of the material manufactured; the refusal to stick by quotas and the refusal to stick by price controls.

HEACOX: I think that the Code, I mean the NRA, went out of existence purely on the basis of the Supreme Court decision that it was unconstitutional. Now, while the Code was in effect, there were violations of production quotas. I mean the West Coast Lumbermen's Association was the policing agency for the manufacturing end of it. I mean each company is given a quota and they can only produce certain quotas based on historical production records and so I don't think it did break down. I think it was just purely declared unconstitutional and when it was declared unconstitutional, the whole thing fell by the wayside except Article Ten, when the industry voluntarily said, if this was good--we wrote it, we

developed it, we think it's good--we think we ought to try to encourage all segments of the industry to continue on this basis of minimum forest practices. This is a start and we ought to keep on, and so this is what happened. This is the birth of what is now the Industrial Forestry Association. The joint committee stayed in existence and was financed by The West Coast Lumbermen's Association and the Pacific Loggers' Association; E.T. Clark of the Logger's Association and Colonel Greeley was the manager of the West Coast Lumbermen's Association and this carried on of course until the war.

But the main function of the joint committee and the people involved in it was to make the rounds of these woods operations and encourage compliance with these minimum standards. And they kept changing the standards, raising them a little as time went on. Now, the association, that is, the joint committee, also began to get involved in national policy matters of forestry too, which was an important part of it, and Warren Tilton spent a good deal of his time on that end of it. When the war came along both Tilton and Hagenstein were off on military affairs. They came back after the war and took up where they left off and the thing was more or less--I mean it was run during the war. They came back in 1946 and picked up where they left off. Warren Tilton had a heart attack shortly thereafter and Bill Hagenstein who had left just a few months before, came back and took over and he's been in charge. There have been some name changes and reorganization, pulling away from the West Coast and so forth, but it's what is today, the Industrial Forestry Association.

Going back to the 30s, the question comes up frequently; what were the factors that brought about the development of the forest growing business in the Douglas fir region. One of them was the NRA. It was the industry written code of minimum practices. Another factor, and I think a very important one, was the threat of the federal government.

MAUNDER: Threat of regulations.

HEACOX: Of both regulations and increase in federal ownership. And, of course, they were increasing federal ownership rather drastically in those days in these Forest Service purchase units and so forth. And this threat of federal regulation and increased federal ownership was also quite instrumental, I think, in the thinking of the leaders of the day in putting industry in the position of wanting to strengthen the state forestry organizations. So much of the legislation in the states of Washington and Oregon, at least, during the last half of the 30s, from '35 until the time the war started which to strengthen the state department forestry was industry sponsored. And industry felt that it was much better to have strong state forestry departments and they were woefully weak in those days, as you know. At best, you could say they were forest controlled organizations and quite ineffective. But industry felt it was to everybody's advantage to strengthen the state forestry organizations, to make them really powerful and effective organizations. And so the industry played a strong part in developing this, again as somewhat of a counter measure against increased federal ownership and control.

MAUNDER: Well, it's always been argued that an industrial group can more easily influence a state agency whatever it may be than it can a federal agency. Is that a part of the picture?

HEACOX: Well, that's one way of saying it. I think probably a more accurate statement is that obviously, I don't care whether it's in social welfare or forestry, you can do a better job, I mean you know the problems better if you're doing it through local people who know the problems peculiar to that particular region and that particular situation. So a good state forestry organization can obviously do a better job and is more responsive to the needs of a region than a federal organization no matter how well intentioned they may be. They simply are looking at it from a broader, less knowledgeable viewpoint.

MAUNDER: So, in a sense, even in the midst of what were the poorest years from a profit standpoint there came now a new acceptance of the practice of forestry within the industry and an expenditure of more money to accomplish this work. Now, this tends to belie the argument of industry which had always been used before that you can't practice forestry until it's profitable to do it. Yet, here at a time when it was very unprofitable to be in the lumber business at all, they started practicing forestry. Now, was this just purely out of fear of regulation?

HEACOX: No it was not. I say these were important factors that helped tip the scales but there had been a number of leaders in the industry who had--well take Western Forestry and Conservation Association. In the companies who belonged to that association in the Northwestern states--you can go back and review the records and the minutes of the proceedings of these meetings. There was a lot of interest in trying to develop a forestry program, and by forestry program, I mean there was interest in maintaining the forest resources of the west and not just to continue to cut the timber off and move on and forget about it or hope that it was going to go into agriculture or something else. It was an awareness among a lot of people that this was what had to take place in some way at some time. It had to take place and the old records are pretty full of this. But it was all elementary. I mean they didn't know what to do, they didn't know how to go about it. They didn't know what they could do and obviously with the Depression upon them, they had this extra burden of trying to figure out how they could do it when they couldn't even make money cutting the mature timber. They were losing money running the mills and cutting timber that was 300 years old, the finest timber in the world. And then they say to themselves, we ought to be starting the little seedlings here that weigh a half an ounce and would not take--in those days they figured they would take at least a hundred years to mature. I think in summary on this particular point, there were obviously a number of reasons that led the industry into embarking upon a forestry program which included pressure from the federal government. But certainly in back of it all was a desire to go into the forestry business and an awareness of the fact that they didn't really know how to do it or when to do it or what was involved in it.

MAUNDER: You were beginning to get some pretty good advice, though, from people like Dave Mason and his partners down in Portland, weren't you, at that time?

HEACOX: Yes.

MAUNDER: About specifics. What sustained yield operations were all about and...

HEACOX: Yes. As a matter of fact, prior to the time we're talking about, prior to 1935, the Weyerhaeuser Company had employed Mason, Bruce and Girard. At that time it was Mason and Stevens and other names but it was the same firm. At this time Weyerhaeuser had employed this company to make rather comprehensive analyses and reports on various portions of the company ownership to try to find a way of managing this property for continuous timber production. So Dave Mason's company obviously played a very important part in influencing the company in the way that it was going.

I think it's typical in any situation like this, whether it's in forestry or any other situation, where an industry or a company is involved in embarking upon a new and unproven undertaking, that in looking back on it it's easy to see that the situation was very fluid. At one particular time, there would be a half dozen people in influential positions who were promoting and support it very strongly, and that there were just as many people who were as strongly opposed to it. In the course of a few months, some of the people who had been strong adherents would begin to waver and some of the people who were opposing it would become more sympathetic. So it is very difficult to say that a certain group of people were the ones who were strongly for it and others were opposing it, because among themselves, even on our board of directors, or within our own management group, within a management group, within a branch or within the company there was this changing attitude of people backwards and forwards. I suspect that some of the people who were most interested at any one time, probably as they go into it further became disenchanted and would say, "I guess there isn't much chance after all." And, the people who were less enthusiastic at one time in their ignorance, would begin to get more enthusiastic and so the thing changed back and forth.

Again looking at the economics of it, I would be forced to say that the people who were the most solid from the standpoint of good business and economics would probably be the ones to find it most difficult to justify embarking on a forestry program under the conditions that existed in the mid-1930s. In the first place, there were more acres being burned every year than were being logged in the region. With the type of fire control and fire prevention and fire suppression that existed at that time, with the equipment that we had in those days, and with the public attitude, the chances of a seedling surviving to maturity were so slim that I think anybody in his right mind would be forced to say that you'd be crazy to invest a

dollar in a seedling at that time. Another reason is that in those days you could go down into southern Oregon and you could buy all the mature timber you wanted for 50 cents a thousand ready to cut. There were no roads in it, no railroads. It was in Coon and Curry County, but the timber was there. Anybody could buy it. Mature timber 50 cents a thousand, and then you are talking about going out and spending \$10 an acre to plant seedlings that won't be ready for harvest for a hundred years and that have little or no chance of reaching maturity before they get burned up. So the hardheaded businessman who is looking at the profit and loss statements and trying to make a sound business judgment had more difficulty in coming to a decision to go into the forestry business than the man who was a little more emotional and less tough minded.

MAUNDER: And less economically involved.

HEACOX: That's correct. And this went on--jumping ahead a few years in the early 1940s, 1941, and '42, there were very substantial acreages of tax-delinquent land that were put up by the counties in those years. There were several hundred thousand acres in a number of different counties.

MAUNDER: Here in Washington?

HEACOX: In Washington. And those tax sales were well attended. I can recall in Cowlitz County, for example, at Kelso courthouse, they had three tax sales. I think three weeks apart in the summer of 1940 or 41 or about that time. There would be 150 people attending those sales--the stump ranchers; the people who lived in the country; loggers; the real estate dealers from Portland, Tacoma, Seattle, Chehalis, Longview; substantial loggers; timber-owning companies; bankers were well represented; and at that time there were thousands of acres of 50-year old second growth in Cowlitz County that sold at prices ranging from 75 cents to \$4 an acre. We bought some (other people bought more than we did) but in that same year that we were paying say \$2.50 an acre for 50-year old second growth, we were spending \$10 an acre at Longview to plant little seedlings that were two inches tall and were satisfied if we could get 50 or 60% survival after the first year.

Now, this is the economic hiatus that existed at the time that we were talking about developing a forestry program for this region. So it took some real farsighted people who could look beyond the present economics, who could look way beyond the existing economics and say this may be the economics today but some day the economics of this industry are going to be different. We're going to be able to make more money on the lumber and the pulp that we produce; and stumpage is going to have higher value than 50 cents a thousand,; and a lot of things are going to have to take place, and there's going to be a need for our products that we can't fulfill unless, by hook or by crook, we can grow timber because we will eventually run out of timber. So we have two choices, are we going to grow this timber on private, taxpaying lands or are we going to be content to let this all go tax delinquent and then, to whatever extent we maintain industry, depend upon state or federally owned stumpage?

These were the choices and there were just enough people in the industry who were farsighted enough to look beyond the current economics and say that at least we want to protect our right to stay in business. And if we're going to protect our right to postpone the decision so that 20 years from now we can still decide do we want to stay in business or don't we, then we've got to do something. And again we don't know what to do. So it was at this point that the industry began to look more and more at the young group of foresters that were coming out of forestry schools and to hire a man here and a man there and put them to work and listen to them part of the time and argue with them most of the time. But to rely on them to some degree to help them solve the problem.

MAUNDER: Who were some of these young foresters who were coming into Weyerhaeuser?

HEACOX: Well, at that time, Bill Price was one of them, he had been working for the company for four or five years. A fellow by the name of Bill Grogan was with the company. I was one of the earliest ones. Then we had a number of young people who are still in there. Paul Sanders worked for Weyerhaeuser around 1940, or the late 30s, I think, he came to work for the company in various positions. And a fellow

by the name of Charley Reynolds and a lot came and went. Some of them are in other places in the industry today; some of them have moved on to other parts of the country.

MAUNDER: What was Clyde Martin's role?

HEACOX: Clyde Martin came to the company along 1906 or 1907 as a young engineer right out of Yale Forestry School. He came here as an engineer rather than as a forester because, who wanted a forester in those days?

MAUNDER: They needed engineers. Well they didn't even want engineers. They frowned on engineers in 1907 to '14 as much as they frowned on the foresters later on. I mean they didn't need engineers (or so they thought) and so they built all kinds of inclines and declines to get the logs out of the woods and they never made any money on those but they were paying for the engineers that they didn't have. But Clyde worked then, I think from along about 1907 to about 1920 and then went to India and was in India for ten years. But during the time he was here he worked at Yaacolt, which is where he started. He worked out of the Tacoma office, he worked down in the Grays Harbor area in various places mainly as a field engineer. Then he went to India for ten years in 1930, and after he came back, the Depression hit him pretty hard. I think he had the first CCC Camp on the West Coast here, and then I believe, he went with the Western Pine Association. But then, when Chet Chapman died rather suddenly about 1940 (I'm a little hazy about the date, 1939 or '40 or somewhere around there) the company hired Clyde in part, to take the place of Chapman. So then Clyde stayed here until he retired, at about age 70 or something like that.

MAUNDER: Was he more of a public relations forester?

HEACOX: Yes, for most of the time he was here after he was rehired, he was mainly involved in forestry-industry relations. I mean he was the company's representative in most of the forestry associations.

MAUNDER: Western Forestry?

HEACOX: Western Forestry, and the Fire Associations, and the National Lumber Manufacturer's Association, AFPI. All of those things. He gave quite a lot of leadership within the company, too, on various things but he evolved more into the outside activities than into the other.

MAUNDER: Was your own role as a forester similar?

HEACOX: Well, different, in that the first five years I was with the company I wasn't in anything involved in forestry. I was in the purchasing department, the machine shop, the warehouse, the Longview and then I came into the Logged-Off Company in Tacoma. That was in late 1934 and from then until 1940, (the Logged-Off Company was dissolved in the meantime and we developed a reforestation and land department) on the one hand I was involved in the management of cutover land primarily that is buying and selling, appraising, subdividing. I spent about half my time on that. The other half I spent working with our branches going from branch to branch on more or less regular tours and trying to promote and help and encourage the branches to do a better job of forestry. Then in early 1940 I went to Longview I think, the first real industrial forester attached to a going logging operation in the West, as far as I know. Now there were men like Norm Jacobson and Chet Chapman and Clyde Martin who were foresters employed by industry, but they weren't involved in practicing forestry on the ground in connection with an active logging operation. When I went to Longview in 1940, I think this was a first. Shortly after that our Klamath Falls branch hired Tom Orr, Sr. and he went there as branch forester.

MAUNDER: You have witnessed in your career as a forester change from a situation of deficit timber cutting to one in which total growth exceed total drain for the country as a whole. That is a pretty well established fact.

HEACOX: That is correct.

MAUNDER: I wonder as you look back in time over this career of yours and this particular phenomenon which has taken place in the forest, whether you assign any particular importance to the role of any particular person, persons or events leading to this accomplishment. Now I know this is a very big thing and it's difficult to say this man or these few men and this event and that event but I think there's something to get your teeth into here a little bit if you just look at it in the broad picture. Who stands up the biggest and the tallest in the whole thing? Do you recognize anybody?

HEACOX: Well first, without talking about any individuals, I don't think there's any question but that the development of the pulp industry in the South was probably the most important event that has been responsible for this change from a deficit timber supply to a potential surplus. And of course, this in turn probably goes back to some research of Dr. Herty and some other people who first of all were able to make good Kraft paper out of southern pine. And secondly, when they learned to bleach Kraft paper so it began to compete with the sulfite types of pulp, and then when they developed newsprint out of southern pine. Those three things really just revolutionized the biggest, most extensive forest area in the country. So the South developed this short-rotation wood supply in anticipation of meeting all the needs of the exploding, mushrooming pulp industry. And this to me has been one of the biggest factors.

Now, this had repercussions, too, because as that developed in the South, it had an influence on what happened here in the West. I mean, first of all it had an influence on the people who just saw what was happening down there when land went from 50 cents or two bits an acre when land went off the tax rolls and began to be sold and picked up by these pulp companies in large quantities and they began to spend a little money on it and grow their own pulpwood. Actually, while they were growing their own pulpwood they were still buying most of it because there was plenty of it to be purchased so they were building up their own forests and not using the growth on their own forests to any degree at all but continued to buy wood from other people. And then they had the Southern Pulpwood Conservation Association and other organizations down there who were trying to encourage the other owners, I mean the 500,000 small owners to do a better job on their properties. And while the soil bank program and some of these other government programs under the Agricultural Adjustment Act and so forth, undoubtedly had some influence--as did the plantations of the Forest Service and others down there. Really, the big thing was this potential market that was provided by the pulpwood industry market.

MAUNDER: In other words, it was a completely reoriented situation.

HEACOX: Completely.

MAUNDER: Lumber oriented to a fiber plant situation.

HEACOX: Yes. And during that period, and even today, the relationship between the value of a unit of wood in the form of pulpwood and the value of that same wood in the form of saw logs or peeler logs, a very, very unstable thing. For a while, in other words, the same cubic feet of wood in the form of pulp logs might have been worth \$6 a cord or say roughly \$12 a thousand; and that same quantity of wood in the form of saw logs, maybe no larger pieces--twice as long but no greater around, might be worth \$40. Even today I think in certain areas of the South you find these dislocations in the actual value of the unit cubic volume of wood grown whether it goes in the plywood logs now or saw logs or pulp logs. These things take a long time to get straightened out but they certainly were no deterrent to the development of the industry down there. The people were buying cord wood for \$4, \$5, or \$6 a cord and they were paying \$39 a thousand for saw logs which was roughly five times as much for the same character and quality of wood.

MAUNDER: What have been the implications of this change in the full resource inventory picture on long term policies out here in the West, policies that were made back in an earlier time before these new factors were recognized?

HEACOX: Well, this is a complicated subject and question obviously. But, when you look at the total woods supply of the country, the growth exceeds the drain--the statistics indicate this. Still, in the West here, the cut or the drain still exceeds the growth. This is mainly due to the fact that as long as you're

cutting in virgin timber, the cut is bound to exceed the growth. I mean as long as you've got as many acres tied up in virgin timber as there are in the western states, it's awfully hard to get the growth and drain in balance. You have to reduce the cut to way below where any sane man would want to put it. So the fact that the total timber volume and the total allowable cut in most of these western states is still going down I think, has ameliorated any fears that the industry might otherwise have had that there's going to be a surplus of timber which would have a deleterious effect on the market. Was this your question now?

MAUNDER: Yes, you wouldn't go along, then, with what Ken Smith from San Francisco had to say here a couple of years ago in his article, "Saw Timber, A Contrary Opinion." His thesis in that article was that the real problem of the lumber industry is not scarcity of saw timber, but how to preserve enough market for timber to make growing trees to saw timber size an economically sound venture.

HEACOX: I remember that article. I think that when you look to the future of, say the timber growing industry in the Douglas fir region, you simply have to realize that the southern pine industry did not and probably could not have propagated itself on a completely saw logging economy; it took the short rotation pulpwood to bring the thing close enough into focus to develop it. So, too, out there--just to go to the extreme we could never plan to reproduce Douglas fir peeler logs. It's the same with the yellow birch in the northeast. It takes 120 to 160 years to produce yellow birch plywood log as we know them today. In the Douglas fir region here, to grow trees that produce the kind of logs that the plywood industry developed and grew on would require such a long period of time you couldn't possibly do it on any kind of a financial basis.

I'm going to the extreme; so, when you go to the other extreme, you begin to ask yourself what are the smallest size trees that you can think of as having commercial value at the time that they reach this age. In other words, if you started in 1967 planting trees or reforesting, you ask yourself if I operate on a 40-year rotation, by the year 2007 what kind of trees are going to produce a profit? Will 40-year-old trees do it? If not, will 60-year-old trees (which will be in the year 2020) do it? Or, do I have to wait 90 years, which would be in 2040? And, I think you almost inevitably come to the conclusion that what we're really talking about is producing fiber and expecting that the wood which will be available decade after decade is going to have a market. You've got to have a little confidence in the fact that if we grow wood here, there will be a market for the kind of trees that we are growing, and that the market does not have to be for fir peeler logs or even Douglas-fir saw logs as we know them today. As a matter of fact, we know and I think you can just say categorically--that you're going out of the clear business for one simple reason, a minor exception, and that is that Douglas-fir, just as a species, does not prune itself well. I mean, stands of Douglas-fir a hundred years old really have very little clear lumber on them as we saw logs today, almost negligible. That means that with the exception of what little pruning might go on (and this isn't going to be very much), you're not going to produce clear lumber out of Douglas-fir. One thing that you can do, one thing that Douglas does have over other species, is that you can produce long lengths in relatively short periods. In 40 or 50 years you can produce trees that have one and one half to twice the length that southern pine does, for example. And to the extent that that gives you a little extra market, that's an advantage. I don't think it's going to be a great advantage.

But I'd take this as an axiom: by gluing and laminating and in many other ways, we can produce in the manufacturing process the quality and size and strength we want a lot cheaper than we can try to grow trees to meet these specifications in this region or any other region.

MAUNDER: And this means that the concept of sustained yield is undergoing certain changes.

HEACOX: Certainly. Go to the southern pine region again. The old line, the old family lumber companies down there and you know them as well as I do without mentioning their names, there were maybe a hundred of them, grew up on an economy of saw timber and they profited on the economy of saw timber. Some of the last ones to go on to it are still hanging on to that, the W. T. Smith Lumber Co. and the Crossett Lumber Co. to name the two. There were maybe a dozen others smaller who are still cutting timber primarily to saw.

MAUNDER: Southern Pine operators.

HEACOX: Southern pine lumber operators and the southern pine region still produce an awful lot of lumber. But they were cutting timber primarily to saw and they were managing their forests primarily to reproduce on an uneven age basis, primarily to reproduce uneven age stands of southern pine timber the ultimate crop tree of which was a saw tree. Well, then such outfits as Union Bag and others--I could name a dozen of them--came into the picture and started growing primarily to sustain and back up a pulp mill. Hell, they weren't on uneven age management anymore. They went strictly to even age plantations and they've got, what is it, 50 million acres of plantations in the South that are all producing even age forests. And all their projections, and so forth, are based on the production of pulpwood in relatively short rotations--15, 20, 25, 30 years--which isn't going to produce very much saw timber. And an outfit like Crossett continued even in the face of all this, as did W.T. Smith and several others; they continued uneven age management to produce saw timber. Well, with regard to the sales of these properties, I think you could prove without any question that when Crossett came on the market, and when any one of the other 50 big properties came on the market--what did they sell for? They sold at a price that absolutely precluded the continuation of this uneven age management. They sold at prices which required an early liquidation of practically all of the mature timber and the prompt replacement of it with plantations of even age trees that would produce pulpwood projected out to 20, 25, or possibly 30 years. Now a third thing has entered, you see, with the advent of the plywood plants, primarily sheathing. Now, the pulp mills are going to have to compete as the plywood industry expands down there, the pulp mills are going to have to compete with the plywood industry, not with the sawmills.

MAUNDER: So you can make plywood out of smaller logs then?

HEACOX: What I am saying is that many of these uneven age forests were planted with the idea of bringing them up and cutting them by mechanized machinery. There will be a tendency, I think, on some of those better sites to go on uneven age management again in order to raise a few trees a little larger to supply the plywood industry. And, the plywood industry will be able to pay some small premium over pulpwood prices to get those logs that are going to be 11 or 12 inches instead of 8 or 9 inches. So by way of reinforcing your statement that your ideas and the ideas of industry have to be flexible and change with the changing times, this idea of sustained yield philosophy that you adopt in 1935 and never change is ridiculous.

MAUNDER: You were operating for quite a long time on an 80-year rotation out here weren't you?

HEACOX: Well, yes. I mean this is probably a pretty good generalized statement. Actually most of our projections were not made on the basis of our starting out to say, "We're going to see how much we can cut on an 80-year rotation." Instead, we started out to say: "We're going to see how much we can cut and get timber back up to a merchantable size before we run out of timber." In other words, our projections were made on a declining basis. This is the way it usually worked out in our Weyerhaeuser operations, so I know it did in several other companies. We didn't have a formula that started out with a fixed rotation. We used a formula of a kind of cut and try basis, with a trial cutting budget. Really, the key to it was trying to keep the age of cutting in the current stands up to a point that we thought industry could stand.

Let's take one of our own plants, for example, Plant X, and say we had a hundred thousand acres back of this mill and we had so much old growth timber--and some 80, some 90, some 50, some 40, and so on, down to some reproduction. We would try trial cutting budgets on that property and we'd say to ourselves, well this particular branch of Weyerhaeuser can't really compete in the market with timber that is smaller than 70-year old stands will produce, given the average site and the conditions of this Branch A. Now, this would come maybe at a period 25 years from today. Say in 25 years they're going to be in 70-year-old timber. Now, in 25 years, can they continue in operation on 70 year old timber. If the answer was yes, then we'd say, "What can we do on 60-year-old timber?" We'd say, "Well, from what we can see today and keeping in mind that we've got a board of directors that can't think that the industry can ever operate on anything except virgin timber, we aren't going to get this down to the 60-year-old point at the present time. And then we'd say if instead of cutting 100 million feet a year, if we cut 150 million feet a year that means that in 22 years we'll be down to 40-year-old timber. It will be 40 years at that time. and

we say no. In the light of what we see here today to try to sell this to the company and to the industry would be ridiculous. Granted we might think that 25 years from now that might be pretty practical, there's no use trying to sell something that nobody is going to buy.

So we worked on this sort of flexible rotation period. But to generalize I would say that in the 30s when we started working out these allowable cuts for various pieces of property, we were thinking in terms of 80- to 90-year-old timber. By right after the war when we'd had more experience seeing many younger stands being cut during the war, particularly during the Korean War, we could see a lot of timber being 60 years old being operated--small gyppo outfits but they were making money, making a living cutting these small stands of second growth--and there were hundreds and hundreds of thousands of acres of 60-year old second-growth cut in Washington and Oregon during the Korean War.

More recently, we've been saying to ourselves, "Well, we really don't know what kind of a product we're going to have to produce." And we have asked ourselves, "Is an 8-foot 2 x 4 the minimum manufacturing unit? Is it an 8-foot block that will cut out so many linear feet of veneer or is it the chip? You can even go down further and say, is the particle the minimum manufacturing unit? Look at the expansion of the particle board industry, I mean the ground up flakes. So, I think that the people--and I'm talking about a lot of people now--who are dealing in these problems, the foresters and the manufacturers are thinking in the terms of where the industry is going on this sustained yield basis. No one wanted to say all we want is just the fiber, pure fiber. It's all going to be manufactured chemically anyway. Nobody wanted to say that. On the other hand, nobody wanted to say that a saw timber was going to be the backbone of the economy, either.

So, what we're really talking about is trying to get the land reforested quickly, following logging. We make sure we keep the land working; this is number one. Then we protect the stands from fire and insects and disease; this is number two. Make sure that they're restocked to the point that the growth potential of the soil is going to be absorbed by the trees. And then we feel that there will be a lot of timber that will find a market when it's 25 or 30 years old, some of it at 40, and maybe the bulk of it will still be up in the 60s, but we can't plan that far ahead anyway. Take the 60-year-old life of the stand. Just look back 60 years and see what's happened in politics worldwide, economics, social changes, technology; no one can predict that.

Crown Zellerbach, for example, with far less timber behind their mills than Weyerhaeuser had, far less acreage, far less volume and with much smaller timber generally speaking (most of their stands were in the hemlock belt) were always thinking in terms of shorter rotations and more intensive management and higher yield than Weyerhaeuser in their projections. In other words, they were always willing to stretch the point, saying, look, our figures show that we can grow 60,000 per acre in 60 years, 1,000 board feet per acre; we think that in the next 60 years we can grow at least 15% more and so we're going to project our cut on that basis. Whereas Weyerhaeuser, looking at the people, at the board, and up and down the management, was a little bit more conservative. With a hell of a lot more timber behind them and not being under the same pressures, Weyerhaeuser was able to be a little bit more conservative. I think this is healthy, having both sides.

And the Forest Service, as you know, has been far and away more conservative. Without mentioning any names, I chided very severely some of the people in the Forest Service as many as 12 or 14 years ago about the rotation. I didn't say you don't know what you're doing and I was kidding them obviously, but you're behind the times. You're talking in the terms of a 100 or 120 year old basis on some of the national forest working surveys. That's ridiculous.

MAUNDER: Of course, they've made a rather radical switch on that.

HEACOX: Well, that's why I say this was several years ago.

MAUNDER: How does their change of attitude and their implementation of a much more rapid rotation cutting program affect your own policy on this?

HEACOX: This was something we thought about quite a bit. At least when I say we, I know I have. A company like Weyerhaeuser that owns a lot of land is obviously going to be affected by Forest Service cutting policies in several ways. One is that if we have a lot of timber today that can be marketed profitably, then the more timber that comes on the market in competition with that, the less favorable the market is going to be for us. In other words--and this is looking at it real selfishly on either side, either the Forest Service side or our side--the Forest Service could say, "We're going to hang on to our timber until everybody else's is gone and then we can get the real fancy prices for it and the interest rates don't bother us." On the hand, that might be good for Weyerhaeuser, it might be bad for Crown Zellerbach; it might be good for one and bad for the other. But certainly, to answer the question, the rate at which the Forest Service, the Bureau of Land Management, and the other public agencies release timber into the market has an effect on all operators and the effect can be quite different on different types and classes. Go over into the Montana area, for example, where practically all of the timber is publicly owned, down into southern Oregon where, aside from two or three big private ownerships, most of the timber is also publicly owned. The policy of the Forest Service is really setting the economic pace at which those areas develop.

MAUNDER: Has that policy provoked the Weyerhaeuser Company to speed up the cutting of its own timber?

HEACOX: No, I think I can honestly say that, to the best of my knowledge and to the best of my powers of observation, neither Weyerhaeuser nor any other big landowning company has been influenced even slightly in its rate of cut by Forest Service timber harvesting policies.

MAUNDER: Your own rate of cut was influenced to some extent by the blowdown, wasn't it? In other words, you go beyond your sustained yield limits in that period.

HEACOX: We had a very substantial volume of distress timber, timber that had a very short life of usefulness; we had a lot of it. We had it in the Grays Harbor and Pacific County areas; had it at the Longview (those were the two worst areas); and we had some at Vail McDonald, a very substantial amount of timber that had a very short life of usefulness. In other words, each year that it was left, well, after two or three years the hemlock would begin to deteriorate. In two years the sap went in the fir that was left on the ground, much of it at least, and that's two inches around the outside of each big log. Then the deterioration was much slower but there was just no question what it would have been.

MAUNDER: But all that's been mopped up now hasn't it?

HEACOX: That, from the big storm, has been mopped up. But, I would say that there's a certain amount of attrition that's been going on on public land and private land all the time. I mean, there's a certain amount of timber that isn't always as dramatic and as readily observed as the big blowdown but it would take a pretty substantial cut in the Douglas-fir region just to keep up with the normal insect and blowdown (fire is negligible in recent years), but just to keep the forest cleaned up. I mean, you're still dealing with virgin forests in which there is a lot of timber which is poor, over mature, and as logging progresses there are more and more timber edges exposed to the wind. We're in an area where we get winds off of the ocean; the timber is tall, the roots are shallow, and the heavy rainfall softens the ground so that this is going to be a continuing problem in this region. However, your point was that this big blowdown produced enough of this distressed timber so that we had to exceed our normal allowable cut in order to salvage that timber, and that's true but it's only that kind of a catastrophe in which this is true, because the normal losses do not exceed the cut. The problem, however, is that the normal annual losses that you get in blowdown and in insect and disease never occurs where it's really handy to get at, you see. You're always having to change your plans, build new roads that you haven't planned on and it's very costly: \$15,000-\$20,000 a mile to get over and get a little patch of timber here and a little patch there. So this is a continuing problem to the whole region.

MAUNDER: Do you anticipate that the liquidation of old growth on your lands is going to go forward at about the projected pace that you've had in mind for some time, or are there new factors coming into your

view which seem to push you in another direction--either more rapid cutting of that old growth or slower cutting.

HEACOX: Well, I can't really speak for the company on that; but I would only say this, that from 1935 up until the end of World War II we had 10 or 12 years of really good, intensive experience in the harvest of timber on a silvicultural basis--just the physical harvest of timber on triangulate seed areas--and in keeping the fires down and in reducing losses from slash fires, and so forth. So we had a lot of experience then; we had an increase in our utilization. Then, starting right after the war, we embarked on a fairly intensive forestry research program starting about 1946, '47, '48 and we've been carrying that on at an accelerated pace right up today--research and intensive management of the types that occur on our property. Along with that, we have greatly intensified our inventories. We really have very good information on almost every acre of land that we own in the West because we've been using up-to-date techniques which combine aerial photography with prism type cruising and computerization of the data.

The other thing we have, and this is something that most other people don't have--is an intensive soil classification. In fact, I think I could say categorically that no other company or other agency has it. We don't have it upon all of our land yet, but we have embarked upon a very intensive soil survey. We've completed two of our operations and we are working on two more and in another three or four years we should have covered all of it. I am talking about a really intensive soil classification, soil survey combined with other information we have on growth yield. We figure that we are going to be in a position to know more about what can be grown on different soils, under different conditions, on different slopes and sites and aspects. We'll be able to compute the growth more accurately. We'll be able to diagnose the needs of these lands from say, the standpoint of fertilizer and prescribe correct dosages of fertilizer, combining this with thinning techniques. In other words, I'm sure that Weyerhaeuser is going to be in a position to intensify its forest management, which means the production of forest crops, way beyond what we are able to do today and what we were able to do ten years ago, and there's nothing secret about this intensification; there's nothing mysterious about it at all. It's simply a matter of combining our 15 or 20 years of logging experience, silviculture logging, with our research, with our soil surveys, with our inventories, and with our computer know-how--and using that to make some sense out of all of this. I think that we'll be able to do as good and as intensive a job of forest management as anybody else, probably better than most people. (When I say better than most people, I'm thinking of the Douglas fir region.) This is going to put us in a position, obviously, to maximize the growth on our forest land and give us a good sling at keeping our cuts up pretty well.

MAUNDER: What about the analysis of external factors, for example, the growth situation across the border in B.C. and the potential of its impact on the market? Does this crank into your data system, too?

HEACOX: No, I wouldn't say that we crank it into our computer system but we certainly take into consideration southern pine, and British Columbia and Alberta timber. These all come into our thinking but I think--maybe erroneously, I don't know--I think we kind of stop at this point. Maybe we're wrong but we say, so far as we can see, we're going to be able to market all the wood that we can grow. Now, right today, you or I or anyone else can say, well, why should any company today be trying to keep their cut up at a very high level at a time when the market has been completely depressed all year long. I think it's a good question; I asked the question. Why should Weyerhaeuser or Crown Zellerbach or anybody else try to put more timber on the market at a time when the market is flooded with timber and it's temporary? So I think this is one of the places where there's room for looking at it from the individual, any individual company or landowner's viewpoint. There is room to do quite a bit more work to fit your production schedules to market requirements.

But you know the situation in the pulp industry, it's been this way since I've had any recollection of it. There becomes a gradually foreseeable shortage in market pulp, or in liner board, or in medium or in something else. The industry sees this coming and they all jump and start putting in mills, and when you are talking about a plant you're usually talking about 35 or 40 million dollars. They all build new plants at once and about the time they get them built, they're all as over-produced as they are right now. This isn't anything they do with their eyes shut. I mean, they know this is what takes place but it has been very cyclical. I'd say this hasn't been quite so true in the lumber industry. But I think that the lumber industry

itself--I'm really discussing areas now that I'm probably not competent to discuss, but I just can't visualize crude sawn lumber continuing to compete in the marketplace on a basis which will maintain stumpage values in relation to other commodities the way it has in the past. In other words looking at stumpage prices historically, they have been coming up fairly constantly and they made a big swoop in the 40s.

MAUNDER: You think stumpage values are going to flatten out?

HEACOX: I think they have flattened. They're very slow to reflect it, but I think that the price of stumpage in relation to the dollar, in relation to the price of a loaf of bread, is not going to get much higher.

MAUNDER: Well, then, how can you afford to hold on to old growth over a long haul if its increase in value is so low per years?

HEACOX: Well, I don't think you can.

MAUNDER: You can't financially?

HEACOX: No.

MAUNDER: From a business point of view that would be a dangerous policy, wouldn't it? You can use the same amount of money and invest it somewhere else and make a better return.

HEACOX: Well you have to keep this in mind, too. Pursuing that, you can say, all right, you and two other people own a 100,000 acres of mature timber. Now with that 100,000 acres of mature timber you could build a sawmill, for example. And you say, well, we're going to cut 5,000 acres of that a year so that's a 20-year timber supply. Now this is the way the industry grew up all over the country, probably all over the world. And you bought timber as a reserve supply to go through the mill and you prorated it out. Well, then you get into the forestry picture. Now you say, this 100,000 acres, I can cut 5,000 acres a year and at the end of 20 years I'm going to have 100,000 acres of land in reproduction, the growth of which will be 20 years. Then you can say to yourself, "Well, that's not big enough, so I'm going to have to cut this, not in 20 but in 40 years so I'll have 40-year old timber. Well you see, what you're doing is just what you say. You cannot carry a commodity which has no economic growth beyond a certain point, otherwise it becomes economic suicide--except for the fact that if you want to be in that business, you've got to keep getting timber supply ahead and this is the way the industry grew up now, when you're in a far more competitive situation. The stumpage that was bought in 1900 for maybe 50 cents a thousand, or 10 cents a thousand, or \$2 an acre or whatever it was--that's been coming up in price. There have been losses, there have been tremendous losses. There have been the Tillamook fires and the Yacolt fires, there have been insect infestations. Thirty billion feet of timber in eastern Washington and Oregon were killed in a 10-year period by beetles. So all of these things have been taking place but they are at a situation now where it appears obvious that each individual timber property has got to be really carefully analyzed, not from the standpoint of how much timber have we got and how long will it last, but how do we manage this piece of property on a financial basis. And this is what everybody is doing. We've reached the stage where we just simply can't talk about timber reserves being static reserves. But, I think that in this projection, my own opinion is that right today--at least in the Douglas fir region, and I'd say probably generally--there is not nearly as much change of stumpage prices increasing in relation to the value of the dollar or in relation to a sack of cement or a ton of steel or glass or any of the other commodities, there is not nearly as much chance of its increasing in value in relation to those as it did in 1940, because in 1940 when stumpage was selling for \$2 or \$3 or \$4 a thousand, it went from there up to \$45 or \$50 a thousand and caught up with these other building materials.

MAUNDER: Now it can't afford to go any higher, it will price itself out of the market.

HEACOX: That's what I think, I mean, this is one man's opinion.

MAUNDER: This is one of the things that your data collecting and your computerizing indicates is the long term trend.

HEACOX: It indicates that to me. Now, some other people look at the same figures I do and they say, "Oh well, the prices are going to continue to go up." I think there will be some technological advances, but I think these are mainly going to result in reduction in the cost of processing and most of that saving in the cost of processing is going to be needed to keep us competitive in the market rather to pay a bigger premium for stumpage.

MAUNDER: Yes, because where was all the lumber going in the past, for example. Most of it was going into home construction and home construction is now altogether different than it used to be. The houses that are being built today are being built on mass basis, prefabricated a lot.

HEACOX: In my grandfather's and your grandfather's time, a family built a home and it was to last not only their lifetime but for their children and grandchildren. This was the concept: the stable, immovable, well-fixed citizenry, you know. But, my gosh, today! The mobile and portable home!

MAUNDER: We're all peripatetic.

HEACOX: Yes, we're all living on rubber tires and moving around at will. And companies are moving their employees--not by accident, but by design to make sure that this young man gets experience in this factory, and then he goes to San Jose, and then he goes to New York, and then he goes to France for a year, and then he comes back. You know, they move them around to broaden their experience in the business. And that's to say nothing of the people! If you could build a wooden home today of the type that was built 10 years ago for every mobile home there is in the United States, the lumber industry couldn't keep up with the business. I haven't any statistics; I'm just saying this, I would guess it would provide a tremendous volume of business for the lumber industry if every aluminum mobile home were to be replaced in the next 12 months with a home, say a five room house.

MAUNDER: There is a big anticipated boom in housing to which the lumber industry is looking with great pleasure.

HEACOX: That's right.

MAUNDER: And that is now almost--or is it already on its way?

HEACOX: Well, I think it's improving.

MAUNDER: This summer it seemed to jump.

HEACOX: Well, I haven't seen the recent figures on it but it hit a pretty low slump here in the past winter.

MAUNDER: What about the attitude of top management toward all of these problems of finance and forest policy? Is the character of industrial management changing fast enough to accommodate and react swiftly to the kind of change that we're talking about? What's happening to management's character? Is it changing?

HEACOX: I'd say yes. Just categorically, I would say that it is changing rapidly. Whether or not it is changing enough and whether or not it is perceptive enough, I mean, if any of us are perceptive enough to keep up with all this I don't know. Being in timber growing, we're really paced by the rate at which we can grow trees. In other words, trees have to be planted and grow from seed, or whatever. They take root, they grow--and they collect solar energy--they move along and they produce wood at a certain rate. We've improved quite a bit, but it still takes almost as long to grow a cubic foot of wood today as it did 100 years ago. One hundred years ago they were riding on horseback and today we're going to the moon. In other words, the forest production industry is geared to a relatively fixed rate of production or pace, which is the rate at which trees can grow. Now if somebody comes along with different kinds of fertilizers or things that you can grow wood three times as fast with, that's something else again, but, this is an improbable thing at best. So there is a pace at which all our thinking has to be geared to on one side, and

on the other we've got to turn our backs to that and look at what's going on in the utilization of wood and wood fiber where you can say, "Well, lumber looks like it is declining and the per capita consumption is declining.

MAUNDER: It has been ever since about 1910, hasn't it?

HEACOX: Way back there in 1909, or some place. Plywood has taken up part of that; there has been a rapid expansion in that, and pulp and paper has come along. But, who knows? Some of the real big advances may be in the semi-chemical type of use of wood in the form of--well, who knows, maybe paper rugs that are fire-proof, beautiful, and easy to walk on. And, you put a rug down and the next week you decide you don't like the color so you put down a new one--clothes or draperies, something you'd send to the laundry. There's tremendous room for expansion in the field of paper consumption on the one side; and on the other side, plastics are coming in and have taken tremendous markets that paper once had. Milk bottles are the best example I know of plastic packaging. Instead of packing stuff in cardboard cartons and shipping containers, once a big outlet for wood. Now there's a trend to take these canned goods and put something transparent over them. It shrinks on and when it dries, you can see all the cans in there, and that's not made of paper. So it's coming from both sides there too, but looking at the broad picture, it just seems to me that wood fiber is a valuable, usable, flexible workable raw material that is always going to give a lot of competition to other sources of construction materials and fiber.

MAUNDER: It always seems to have an unlimited potential for development and use in new ways.

HEACOX: Well, that's what I'm saying, it's flexible. So to say that we can grow trees in 60 years and compete in the way we think of competition today, well, I don't think anybody can say that. Maybe this is just my own rationalization, but I have confidence in the future of the timber growing industry and the dependent manufacturing processes simply because of the fact that wood fiber is a very versatile thing, whether you peel it in the form of veneer, saw it in the form of lumber, slice it, chip it, grind it, or pulp it. Whatever you do with it, it is a very versatile commodity. Now, I think that there is another thing that we have to keep in mind in connection with this and that is that while wood does have these qualities, wood is, after all, a heavy, bulky raw material and it can only be grown and produced profitably on relatively inexpensive land that doesn't have a higher use for something else. In the first place, say you pulp it. There's only about 40 or 50 percent of it or less that comes out as fiber and it's heavy and bulky and it's wet. There's a tremendous water content in it. And in the form of lumber or plywood, either one, it is a bulky, hard to transport commodity. So far at least, it isn't piped in fluid ways very successfully, so you've still got relatively expensive transportation. Looking at the future of wood, it just seems to me it has grown--I mean, there's a limit to the value of the land upon which you can grow it if you're going to continue to compete--as you must with all the other commodities. In other words, you can't grow it on truck farms. On the other hand, there's no land in the country fertile enough to grow fiber today as economically as you can get it from wood, fiber to be converted into rayon or something of that sort.

MAUNDER: What about the competition for the use of forest lands for other purposes?

HEACOX: Of course, that's increasing all the time; this is a very important factor. We get kind of wrought up once in a while about the acreage that goes out for power lines, and highways, and so forth. It is substantial to the tune of maybe 3,000 or 4,000 acres a year out of Weyerhaeuser's ownership, but that in itself is not the big competition for the use of the land. I think the big competition for the use of the land is in the single use recreation areas, parks, wilderness areas and so forth, where the production of wood is restricted or curtailed in favor of some other use of the forest for a standing value.

MAUNDER: What about the potential for the forest to produce income for its owners by being used for recreation? Are some of the companies getting into that?

HEACOX: Yes, there is a definite trend in that direction. This, I think is particularly true in the southern pine region where much of the land leads to hunting clubs and fishing clubs. On the same lands they use for pulpwood, they still lease hunting rights, fishing rights and so forth, to various groups. In some cases in the Gulf States they just issue county permits for maybe a dollar to anybody who comes along; there's

no exclusiveness to it at all. Maybe they give people a \$5 permit for any place on any of their land in say, maybe 20 counties. This is to give them a measure of protection; to give them a little bit of revenue to pay for the damage that's done to roads and maybe they plant some feed around for the turkeys and the quail and the deer and things of this kind.

MAUNDER: The revenue involved here is probably just enough to maintain certain expenses and it's written off on the ground that it create good will, good public relations. We can't shut our minds and our attention away from these people because they are an important part of our public and we don't want them on our back. But, I'm thinking now in terms of something bigger than that. I mean something that is a substantial return to the company in the way of profit. What about the development of some of these areas as ski resorts? This seems to be coming off in a fairly successful way back East where St. Regis and I.P., I believe, have gone in together on one area up in Vermont.

HEACOX: We've got one up there, too.

MAUNDER: You've got one in Vermont, too?

HEACOX: Yes. I don't think it's made any money yet, but it was started as a profit making operation, at least that's what it's intended for.

MAUNDER: My gosh, when you see the tremendous growth in the interest in skiing and the crowds that are getting out to these ski runs, you can't help but believe that there must be money to be made in it.

HEACOX: Well, there are, I suppose, ski areas projected here in Washington and Oregon on private land. But, even where private land is involved, it's very difficult to find strictly private ownership without intervening sections of federal timber. But I know of some that are, at least on the drawing boards or being contemplated by various organizations. Still, looking at one ski resort, from the point of the acreage involved, it might only involve three or four hundreds acres and that isn't very much out of the total amount of forest land.

MAUNDER: Right, that's true. But I'm not thinking just in terms of skiing resorts, I'm thinking of camping facilities, too.

HEACOX: Look at the Forest Service experience with - what do they call that program?

MAUNDER: "Camp for \$7"?

HEACOX: Yes, \$7 a throw and they were woefully disappointed.

MAUNDER: Well, isn't that to be expected? After all, it was just the first year. It takes a little time to educate the public to the acceptance of an idea like that. You don't sell anything right off the bat like that. I think that will take hold if they persist in their efforts to sell it. I had the experience myself this summer of using some of their facilities and I've been very favorably impressed. It would be a lot easier to sell Elwood Maunder on this Golden Eagle business than it's been before.

HEACOX: Well, what I was leading up to in this connection is that in the western states, and increasingly in the eastern states, there is so much publicly owned land that will provide competition to the privately owned land on this. Particularly in the West, where the public ownership embraces much of the real scenery higher up in the mountains, a little more remote, whereas the private land, the commercial land is down lower and is better timber growing land, but by the same token it's less desirable camping land. From my interest in Weyerhaeuser I think that one thing that any big landowner, whether it's a corporation or an individual has to think of today, is what is really going to happen with respect to the long term development--the river frontage, steam frontage, highway frontage, water frontage. We've kind of gotten used to the government Corps of Engineers coming in and building a dam and then the government taking all of the lake front around that through condemnation. But, as one interested in Weyerhaeuser's ownership for many years, I've always looked upon ownership along the rivers as being something of long

range potential value. It seems to me that there is mounting evidence that the property rights of individual owners are going to be diluted and adulterated and washed out to the point that long before population pressure makes demands on those areas, the owner isn't going to have very much left. I mean with the wild rivers and the scenic rivers and the mountain top trail corridors and the scenic reservations on the side hills and so forth, it just doesn't leave much. I think this is a matter of real concern. The property rights, and I'm not trying to talk on the social aspects of this but I think it is a patent trend that property rights are gradually being diluted to the point of some concern.

MAUNDER: Would you be afraid to extend any serious amount of money of your own on developing a recreational home, let's say out on the edge of a lake that was made by some development that the Weyerhaeuser Company put in on one of its streams?

HEACOX: No, I wouldn't worry about that. What I'm think is, it appears to me that there's an awful lot of pressure, and where there's pressure there's some power, to usurp what we have thought of in the past as rights that go with a piece of property. Now whether this will take place on the basis of condemnation and purchase or whether it will be just be restrictions on the use of it or what, I don't know. Say that you owned a piece of timber someplace, or were a big stockholder in a group of people who owned timber and a river ran through it, and somebody passed a federal law which says this is to be a free-flowing river with a quarter of a mile wide reserve strip on each side of it. Well, maybe you'd had ideas of developing that for fishing and camping and forest home sites, and building a road up there some day. But they make this into a--

MAUNDER: A wild river.

HEACOX: Yes. And where are you? I'm not talking as to whether or not this is good or bad.

MAUNDER: Well, this is what's happened.

HEACOX: That's right.

MAUNDER: Well, that's very definitely a worrisome thing for management, I'm sure.

HEACOX: I think it's something we're going to have to devote increasing attention to. And then the other more practical side of it is the infringement upon really the timber-growing capacity of the land. Scenic rivers, mountain crest trails, scenic reservations to preserve the vistas and the views--all of these can cut into the timber--growing potential whether it's federal or private ownership. This just gets back to your earlier question. What do we see from the standpoint of maintaining the base of the timber production? I think it's going to shrink.

MAUNDER: Partly because of these inroads made as a result of the recreational facilities?

HEACOX: Yes.

MAUNDER: And the political actions that follow in their wake.

HEACOX: Now I also think, and I may not be right about this, that in this country as it happened in Europe and Japan and other countries, ultimately there is going to be enough pressure on the use of land so that if land is required to produce timber, raw material for use of industry, it will be used for that and it will also be used for the other values concurrently. There's always got to be some give and take but right in the last ten years and in the next ten years I would say that we are going to be faced with these tremendous pressures for single uses of land--for national parks, for wilderness, for roadless areas, for the scenic views and so forth. This is setting aside lands for single use and I think that we'll get past this point later on, just as in Europe, you drive through the Black Forest and all the roads used for hauling logs are the same roads that the people use to get up there on their vacations. The people walk up and down the roads and carry a cane, they stay in these little hotel and roadside inns, they enjoy the ozone that they breath, and they go to baths in the morning and again at night and they're logging all around. I got out of

my car and walked up little trails in the woods and got out there a quarter of a mile and here would be a park bench and they'd probably be logging on both sides of you. And the people go out there and sit and watch. The logging doesn't bother them. So I think that ultimately we'll come to that kind of a scheme.

MAUNDER: That would imply would it not, that there is quite a different psychology at work in the European mind than that in the American mind?

HEACOX: Well contrast if you like, the European psychology in the Black Forest with respect to the Black Forest and the American psychology with respect to the state forests in New York. They're just at opposite ends of the pole.

MAUNDER: All right. What is there about the American psychology that makes it what it is, a kind of woodsman-spare-that-tree sort of attitude that you run into all the time?

HEACOX: Take Secretary Udall and the two or three books that he was put his name on the last couple or three years. He keeps digging up the old "cut out and get out" timber baron, woodsman-spare-that-tree philosophy that you mentioned and he keeps this thing alive.

MAUNDER: Well, in Udall's case, I think there are political motivations behind it. With the rank and file of American people, the average person on the street, what creates their over sentimental attitude toward trees?

HEACOX: Well, I think part of it is such publications and utterances as a man in Udall's positions makes. I mean, he keeps this thing alive. I think people would begin to accept the farming of forest land as a legitimate process that contributes substantially to our standard of living and to our expendable income and everything else if they weren't always agitated on woodsmen- spare-this-tree business. I think there are two other things basically. One is that we are still not very far away from a pioneer psychology in our country and this pioneer spirit is one that looks upon anything that is out in the open as "mine." I'm the same way. If I drive out through the range land and there are cattle grazing out there and there are animals out there and I figure I want to hunt, you know I feel it's an impingement upon my rights not to be able to get out there. I can see 10,000 acres out there. We have this pioneering spirit which looks upon the forest particularly, as the wilderness, a place where we can go away to, and we're not very far removed from that. My mother was born in a log cabin in a little Iowa farm community with probably hardly enough trees around to make a cabin. I mean we're that close to a much more primitive existence than the Europeans are.

The other big difference is that we still have a lot more elbow room than they do and we want to keep it. You've been there and you know how it is. Take the city of Dusseldorf where I spent a couple of weeks a year ago - 700,000 people and I'll swear that the area used up by the city of Dusseldorf is probably one fourth or one fifth of the area of Seattle which is only 400,000. It's that compact. And the people, what do they do on Sundays? They get out and they walk up and down the streets. The stores are all closed but they get out and parade up and down all day on Sunday--half of them, and the other half are out in the woods, out in the fields walking in hiking clubs back and forth. And so they've come to accept it. The Black Forest to them is a wilderness by comparison. They never get any hunting privileges there; the foresters do all the hunting. But they get up there and the people come up out of the cities and the town in Germany and France and Austria and they get up into the Black Forest and what do they do? The people who live there, probably the whole family will sleep in the kitchen and the visitors who come up there will rent the bedroom that the man and his wife normally use or the kids and they'll stay there for a couple of weeks. And what do they do when they get up there but walk up and down the roads by the thousands. Or if they're fortunate enough to have enough money to stay in one of those hotels of which there are thousands, they get up at six o'clock in the morning and there's a doctor there and they take the mud baths, the hot baths, and there's one place for arthritis, one for heart attack, and one for something else, and they breath the ozone and go up there for two weeks. They accept that you see. So, I think there are those two differences. The population pressure is so much greater over there than it is over her. And then they are much further removed from the primitive existence.

MAUNDER: Of course, these things are all very much more complex when you're dealing with the human psyche than what we see at first glance.

HEACOX: Oh, yes. I'm no psychologist or sociologist or anything else.

MAUNDER: But we've all got notions about why it is as it is. Our hypersensitivity about the forest and cutting down trees can extend into town on a street. Somebody can get really upset about the cutting of a tree and it's enough to provoke quite a rash of letters to the editor and that sort of thing. I wonder to what extent this is not a reaction by people living such complex lives today. We're involved in so many ventures for which we feel consciously or unconsciously a certain guilt, for example, dropping the atomic bomb to win the war. A lot of people I think feel subconsciously guilty about their nation having done this, the same way that they do now about carrying on our war in Vietnam. I think there's a tremendous guilt feeling about this. I think there's a tremendous guilt feeling about the Negro and his generalized condition in this country. All right, a lot of us are hag ridden consciously or unconsciously by these guilt feelings which we assume a certain measure of responsibility for because we're citizens of the country which is responsible for these. We feel that we can't do very much about them, at least we convince ourselves that there's nothing very much we can do about them. So we get off our guilt by attacking something else and passing as a kind of a puritan for saving the forest. Now that's something that you can get quite puritanical about and it isn't going to hurt you but it's a good cause. And I think a lot of people go for that for this reason.

HEACOX: It's very possible.

MAUNDER: And I think this is an area of knowledge that all public or private groups have got to take into account.

HEACOX: I think it's a good point. I think it ties in with another one that is somewhat similar, that for example, I can sit here in Tacoma and I've never been in Africa in my life. But, I'm glad to know there is an Africa where there is lots of wild game and where the hunting is good where they are close to nature and everything, and I would hate to see the elephants stamped out or the lions and the tigers that are eating the babies over there stamped out. I think we ought to have some lions and tigers and elephants in this world, or bring it closer to home. I could join some kind of an organization.

MAUNDER: You could join the African branch of the Sierra Club.

HEACOX: That's right or coming closer to home, I've never been in the Okefenokee Swamp or in the Everglades and I could join "save the alligators", or "save the Everglades". There is the matter that you're talking about, particularly if it's far enough removed from you so that you're not personally involved in it. So, I would agree.

MAUNDER: It's a fascinating situation.

HEACOX: But then there's another point on the same line. I've been in the woods business and the forestry business all my life and yet when I'm in the woods and I see a big tree go down, there's a little twinge always. And I know all about it, I know the inside and the outside of the situation and yet there is something about it. As a forester I'd be going around talking to the old timber fallers in the old hand-falling days, I don't mean one but literally hundreds of times, these old Swedes and Norwegians were falling timber from the time they were big enough to pull a saw. Not all of them, but many of these men would say, "Well, I've been cutting down trees all my life and I never fall one of these old beauties but what it hurts me a little bit and I'm glad that somebody is going to make sure that we're going to have some more. You know even those guys who made their living at it.

MAUNDER: Well, don't you suppose that in a way, that relates to our spiritual and our religious instincts. We, all of us, from earliest recorded historical time, have been respecters and sometimes worshipers of objects in nature. And we look at these magnificent specimens of trees and they are awe-inspiring. If you've got any degree of sensitivity at all, you've got to feel some little measure of pain.

HEACOX: One of my forestry professors back in Ames--one of the questions he posed to us was "How can you be sure that when you sink an axe into a tree, that tree doesn't feel? There are cells, there's a cellular structure. You're studying this in botany; you go into the biology department. What point do you get to the place where cells have no sensitivity? He said, "I don't mean they feel like you would feel but just ask yourself in a while." I've never forgotten that.

MAUNDER: It puts you through a buzz saw, doesn't it?