

SPENCER KNUTSON

Interview 153a

September 14, 1999 at the T.L.L. Temple Memorial Library Archives Room

Jonathan Gerland, Interviewer

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ABSTRACT: In this interview with Jonathan Gerland, North Dakota native and long-time Temple logging supervisor Spencer Knutson reminisces about the changes in the logging industry as a whole and the Temple companies in particular, over his career from the 1950's to the 1990's. He started in the western forests and then moved to East Texas and adapted some of the western practices and equipment to the southern pine forests. His career spanned the era from animal-based logging with extensive rail networks to lead-based logging operations to the wide-spread use of skidders and chippers and large trucks. Mr. Knutson talks about the challenges of managing forests for varied types of fiber needs, the growing movement for sustainable forests, and Arthur Temple, Jr.'s vision of what his company could be and how the lumber industry should adapt to changing times and technology.

Jonathan Gerland (hereafter JG): This is Jonathan Gerland. It is about 2 o'clock in the afternoon on September 14, 1999, and I'm with Spencer Knutson. We are at the Temple Archives room, and we are going to do an oral history interview. Mr. Knutson, could we just begin by stating your full name, and when and where you were born?

Spencer Knutson (hereafter SK): I am Spencer Knutson. I was born in North Dakota during the Depression and gravitated to the West Coast and lived and went to school, basically, in Washington State in the Yakima Valley.

JG: When you say, "Went to school," was that your public education or was that your advanced degrees?

SK: Yes. Well, my early education was, of course, all in Washington State as well, but I also graduated from the University of Washington in Seattle.

JG: Do you recall what year that was?

SK: Yes, I graduated in '58-'59 as a logging engineer, which is simply a little application to the industry of civil engineering.

JG: Did you do any forestry work in Washington State?

SK: Yes, I worked with a number of companies in Washington and Oregon, as well.

JG: When did you come to East Texas? Did the employment with the Temples bring you to East Texas? Or could you just describe...

SK: Yes, Mr. Temple was exerting his very keen interest and skills in bringing the

Southern Pine Lumber Company, as it was known then, into the twentieth century, and one of the things that he was doing was soliciting help in the various approaches. So he had an engineer, a lawyer, whatever, and he and Mr. Clyde Thompson started talking to me in '58, and I came down in '59 to go to work for Mr. Temple at Southern Pine Lumber Company in Diboll.

JG: Was Dave Kenley here then?

SK: Dave Kenley probably would be called in retirement almost at that time, but he genuinely was still here. I think he was doing a lot of his personal activities. He was a very major rancher in the state of Texas and had a lot of cattle, a lot of work, and a lot of land and timber, so he was pretty busy on his own, but he was still here.

JG: Did you work with Kenneth Nelson, or was Kenneth Nelson in your department?

SK: I worked more closely with Clyde Thompson and Mr. Temple than I did with Kenneth. In later years, though, I did work very closely with Kenneth.

JG: What was your title when you first began work?

SK: I came here as Logging Engineer for Southern Pine Lumber Company and Logging Superintendent.

JG: Describe the logging that was being done when you first came to Diboll? I assume you came to Diboll, is that correct?

SK: Yes, I came to Diboll, and at that time, the company was still very antiquated; and that's the whole gist of Arthur's approach to bringing on skilled technicians, knowledgeable people in various areas to quickly bring us, jerk us over into the twentieth century to be competitive and to take advantage of the great assets, the natural assets that we have.

JG: I specifically was thinking of the '40's, and I guess into the early '50's, there was a lot of transition in logging methods: use of animal power, steam locomotives, the tram roads. In the early '40's, they had done away pretty much with the logging camps.

SK: Well, that's not really true, because it was very common of the major companies, whether it be Carter Brothers in Camden, or Edens Birch down in Corrigan, even the Kurths in Lufkin, and you can go on naming them, all were family owned organizations and still operated in a very antiquated way. Most of them were still logging with mules, steam engines. These things went out a long time before that in the western areas, but they just didn't slip or get into the South, and that's what Arthur had detected. He knew if he was going to stay competitive, we were going to have to do this. So, we were on the conversion. We were really...you talk about taking something and reaching in and grabbing and shaking it up and roll it out and starting over from scratch, we really did that. Arthur insisted on revising and upgrading, getting the technology, the educations

that were required and really had a very strong hand in that. So, we were, still, way in the dark ages, so to speak.

JG: So, animal power was still being used in the woods by the Temples?

SK: Yes, we had numerous crews of a ... that were operating with mules.

JG: Did you use any oxen, were oxen being used?

SK: Well, oxen were being used with the Carter Brothers in Camden way up until, my goodness, I'm going to say sometime late in the '60's, they still had some. Many of them were kept at Carter Brothers as kind of a ... they just didn't want to let them go. They were just part of their history, and they just didn't want to have to shut that down. But eventually, they did, just as we did, I might add, with our mules. We eventually wound up selling our mules into Tennessee and places up there where they had still a large demand for mules or animal skidding in some of the areas, the sensitive areas. Some sensitive areas, they wanted to use animals, and so our mules were sold into that process by Mr. Thompson, and the next thing we did was take our railroad down, and that was a tough one because that was very close to a lot of people - the old steam engine coming into town every evening, leaving every morning, and hearing the whistles, and all of the connection. We had our shops here. We had old shop people, Dopey Morgan, I remember was a favorite of Arthur's. A little, short, squatty fellow, tough as nails, but, all he knew was keeping those railroads, and those old ... and, he also did major work that a smithy would do for our logging crews, including the requirements of the crews with the mules.

JG: So, the steam locomotives were still bringing in daily log trains or just periodic? I guess it would be the Number 13?

SK: That was the issue. We always switched in logs at night. They would run on at night, and the next morning, the empties would be switched out. Bill Powers, the old engine super used to hook on to them, and he'd take them out back out toward many of our sidings out in the woods.

JG: Where would those be in '59, '60, '61?

SK: At that time, the remaining lines were out through Trinity County and up to Houston County through what is currently known as "Boggy Slough". Then on up toward Rusk; then we also were connected with the old Texas...

JG: State Railroad?

SK ...Texas, no, that was the name of ours, TSE, but there was the old state railroad that operated out of Palestine to Rusk. We operated that one and on that line; and, all along the lines, there were spots where trucks and logging crews would drop their logs, and they'd be scaled. It was a way of inventorying logs for the future use of the mill, and they would eventually be loaded on to cars and then switched back into the mill as needed.

JG: So, trucks were hauling logs to the railroad sidings. While that was going on, how much, I guess percentage would be a good way to put it, percentage of logs were coming directly by truck?

SK: The company crews probably were doing something like maybe fifteen percent or so. Fifteen, twenty percent would be the high side of the production of the company crews that were logged and delivered directly by truck to Diboll or to Pineland. Then the logging contractors, we had gone in to the contracting business along in that period, too, after the Second World War in to that period, the logging contractors probably produced the higher percentage directly to the mill, maybe fifty percent. Then whatever the difference is there would be developed and delivered to those sidings and then reloaded and moved on in by the steam rail.

JG: Your title again was Logging Technologist?

SK: Logging Superintendent.

JG: Logging Superintendent, ok. Could you describe logging... I guess my question is really more geared towards... I am keeping in mind the transition over time of how the market has changed, and different types of products of course require different kinds of trees and that kind of thing. I guess your job was more in the legging technology rather than the growing cycle of trees. Maybe, just describe exactly what your job was.

SK: That, in essence, is just about it. Our forest management group was spearheaded by Kenneth Nelson, and by the way, Kenneth Nelson was a very early forester, self-educated, and very close to Dave Kenley. So much so, that I remember the story that was told on Kenneth where he came down to the office one day, and he walked in to see Mr. Kenley. He had applied for a job, and they wouldn't hire him because he didn't have an education, and he was just a big, old rawboned boy that wanted to go to work, and just they had lots of big, old rawboned boys then. So, Kenneth said, "Well, I may not have what you need, but I tell what I'm going to do. I'm going to be down here every day. I'm going to follow you around until you teach me what I need to know."

JG: He said that to Mr. Kenley?

SK: Yeah, and then he said, "Then you'll hire me." Strangely enough, that is just exactly the way it went. He just followed Mr. Kenley around. Dave Kenley was a civil engineer and was a surveyor, as well. So, he was in charge of all forest operations other than actual production. That came over to Mr. Thompson. Mr. Thompson was really in charge of the operation, requirements of running a sawmill. So he was the one who was always making sure that we got logs cut and delivered, and they were the right size and description to the right places. Mr. Kenley was more concerned with the acquisition of timberlands and timber, timber rights, as well as have managing crews that just looked after and managed our forests. So Kenneth Nelson came on board working for him in that position, and then in the late '40'S is when they hired Bill Nichols, the first degreed forester to come and

work for Southern Pine Lumber Company. So we were divided in to management and harvesting, and the harvesting end is where I was working with Clyde Thompson. So I was more concerned with the harvesting. The process that was in shape at the time when I came was old time. We shut all that kind of operations down in the Pacific Northwest years before that and converted to sophisticated logging systems. This was the idea that Arthur wanted to impose down here, was to look at what we were doing, and as fast as possible, upgrade it, streamline it, make it more productive, make it serving our purposes. So this is what we did. Shutting down these operations was difficult, more difficult on the old-timers and the people that lived, been brought with them. For example, Kenneth Nelson and Clyde Thompson and Dave Kenley and Judge Minton, I could go on naming the old people that were here. That was the hardest thing for them to give up and have somebody come in, a whippersnapper green from the West Coast and tell them that we needed to do away with the railroads, and do away with the animals, start designing equipment that was better at doing our jobs, converting our systems to long logs and skidders and bulldozers, building more roads, having better access, having inventories like we do now have at the mill where we have big cranes that store and stack up millions of feet of logs so that you don't have to worry about every day, "Are you going to have enough logs to run the mill?" There were many occasions in the wintertime when under the old system where that was a real problem, and we were always fighting running out of logs, and we would play all kinds of games to, maintain inventories in the fall. As an example, we would use the company operations in, well, not entirely, we used the contractors as well for this purpose, but around town, all of the streets, the public streets so to speak, really were all built on company lands, and all the housing and everything was company, we would bring these logs in, and the trucks would just roll them off the side of the truck into the ditch. All around town you'd see logs alongside the road, and these big, big loads of logs that were... The reason they were there is that the inventory at the mill was limited and could only hold so much, and when it got full, then we would continue...

JG: Excuse me, when you say "at the mill", were mill ponds still being used?

SK: Mill ponds were still being used (**JG:** Sot the millpond was full...) but with difficulties for the simple fact that when you got in to the second growth of timber, southern pine, specific gravity is greater than the water and they'd sink. So, you would wind up with a lot of logs on the bottom, and it was easier for them just to stack them on the ground around the mill, and then shuttle them to the mill by some process than to worry about trying to dig and dive for logs and drag logs up from the bottom and all of that. The mill ponds were used mostly as a source of storing water for the steam engines and for the mill. That was the big reason for the mill ponds, not to float or store logs in. That went out earlier when the old-growth timber which...the old-growth timber being larger and of lower specific gravity did float, and so they did use...they would bring them in, as you can see in some of these old pictures, the tilting approaches to the mill for the engines, log cars. They could just roll them right off and into the log pond, and then they'd float them over and pull them up with bull chain and in the mill and away they'd go. But, that got less practical as time went along, so they started storing them on the side, and Joe Denman, who was in charge of mill operations, brought in a big crane and

erected it that operated over the...where it could reach the mill's bull chain feeding input, as well as unloading logs from the trains and the logs on the logging trucks.

JG: Is that the steel one that's still there today? The elevated crane?

SK: It was called a gantry crane. It's not the crane that's there now. There was a gantry crane. Later on, as we started to get in to new innovations, that's when the big crane that you see over there now was brought in, and it was designed to handle much...

JG: That is not what you'd call gantry crane?

SK: No.

JG: A gantry crane was on a single pole and turned around.

SK: No. Fact of the matter is, it was spread over two rail-lines so that your railcars could actually go between the legs of it, if you can imagine that, of two lanes, and it had a great, big crane that was mounted on top of that. So as it would pull them underneath it could unload them and put them onto...

JG: So, it would actually pivot, it's like a pivoting crane, kind, of like what they would have at the shipyards.

SK: Yes. As a matter of fact, I'm not sure just exactly where Joe got that, this gantry crane, but that's a very simple comparison to it.

JG: But this one here, I'm not sure what it's called, the one that just goes back and forth on the two, long overhead rails.

SK: Well, now, they have a very long storage area with...on either side of it are built up these huge supports that the bridge crane reaches across, and they are called a bridge crane simply because it looks like a bridge across from one side to the other. It has wheels on both sides, so, once it picks up logs, the bridge crane can run down to the other end and put them on the other end, and then come back to this end and unload another truck and carry it down.

JG: Now, that was built during your time here?

SK: Yes, that was built after we embarked on our attempt to get into the plywood business.

JG: I was wanting to ask you about that.

SK: Well, that is just a little bit later.

JG: That was like '63.

SK: First of all, as we converted from the animals to skidders, the skidders had the ability to skid longer logs. Then we went to double logs; then we went to tree-length logs.

JG: By skidders, you're not talking about the old steam rehaul skidders?

SK: No, I'm talking about the skidders that are now currently used. They're four wheels, articulated, big diesel engines, a big fairlead, and a winch on the back of them and a cable. Now they also have them with grapples, big hydraulic grapples, and they are very agile and can draft a great number of logs behind them. They'll pick up several logs in that grapple or by chokers, and they'll skid them to a landing where they unhook from them, and they go back for more. At the same time, the loading equipment in the landing is loading trucks, and the trucks, of course, were very small trucks to begin with; and now, with these bigger logs, the requirement for much improved trucking. That's when we started seeing the twin-screw or the tandem axle, drive axle, more axles under them, and more of them driving. They had a capacity to haul twice as much, or maybe three times as much, as the old trucks did, and they would also come in, in long-length, and the advantage of the long-length logs is that, Jack Sweeny operating the sawmill could then take a long log and buck out the size or the length of logs required in his production. Before, once a sawyer cut a log in to twelve-foot, fourteen, sixteen, twenty-foot logs, that's all you could make out of them is just whatever he cut them in to. This way, Jack had them in long-length, and he could one day run and cut as many twenty-foots as he wanted. So it met our requirements and let us utilize the logs for the best return.

JG: You're talking about longer logs.

SK: Yes, they were bringing in with these skidders... first of all, they went to double-length. In other words, instead of a twenty-foot log, we would have two twenty-foot logs so it's a forty-foot log now. Well, that was an improvement, but we were still taking some of the flexibility away from Jack Sweeny in not permitting him to make that selection at his mill site. But when we went to the tree-length log, that means cut it off at the ground level as low as you can and trim it up and go to the top and that means go as little as four or five inch top. That whole log, the whole tree in length, was delivered to the mill, and when it got on... when Jack would put it in on his deck up there, he'd make his decision, "Do I need sixteens, eighteens, twenties?" What did he need? And he could cut out of them whatever best fit the market.

JG: So, he made the decision, then, at the mill, whereas before, the logging part of it, decisions were being made.

SK: Yes. And of course again, you can see, the decisions are being made by a ...what was known as a "flathead", the cutter.

JG: The sawyer.

SK: Yes, we called them a feller buckler on the West Coast; down-here they called them "flathead". But they...so, you have a less-educated, and I'm not belittling them or anything, but it's just that we could put a very sophisticated log technician on the deck to look at long-logs and to make a decision based on information sent to him from our sales department, from production development, and he would cut them, the trees, into the most profitable and usable form that we could use in our mill, and so it was a distinct advantage.

JG: What process is that called? Long-tree or full-tree harvesting?

SK: Tree-length logging. Of course, that also opened the door for another project that we were looking at, and that was plywood. We struck a deal with a couple of companies. It was U.S. Plywood and Monsanto. U.S. Plywood was in the plywood business, of course, out on the West Coast in a big way. But there was no southern pine plywood at the time. So, Kenneth and Joe ... I think it was Joe's big project...

JG: Joe Denman?

SK: Joe Denman. He suggested that with this collusion that we send some logs to the West Coast, and let's see what it's like to make plywood out of southern pine. So, we did that. We, Kenneth and I, selected them and had them cut, delivered on the old ... I remember we delivered them out on the 103 siding, and we still were operating steam locomotives at that time, and we encoded them and loaded them into gondolas and shipped them to the West Coast. U.S. Plywood suggested that the best operation to... for this experimentation was in Quesnel, Canada, and then Quesnel is up the Fraser River Valley in British Columbia, almost to Alaska. So, the gondola cars of our southern pine logs were switched out to the West Coast and up the Fraser River Valley to Quesnel, and after they arrived, they notified us. Then, Kenneth, Joe Denman, and I jumped in the airplane, and we flew up there. After we got there, we went about establishing a procedure to run this test and ran it in several days and got the answers we were looking for and brought back some plywood samples. Came back to East Texas and immediately started building the first southern pine plywood plant in the South.

JG: Now, what type of wood were they using at the time, up in British Columbia?

SK: Well, their typical local species up there, the majority of it is Douglas fir, but there are a number of western species that are used for plywood quite satisfactorily out there. But, of course, you can see the shipment cost of shipping and so on. If we could manufacture locally here, we could open a new market and that's exactly what Joe did.

JG: Did they have to do much modification, to process the East Texas logs? Set controls different?

SK: The process requires some...it's a steaming process really of soaking the logs in hot water and then bringing them out and running them on a certain kind of a lathe that simply unrolls. It's almost like, if you can just imagine a roll of toilet tissue, it just peels it

off in a continuous layer, just like that piece of paper as you walk away from the roll. And there were many opinions as to how long the logs should be soaked, should they be soaked, should they be drier, or should be this or that.

JG: What would they be soaked in?

SK: It was just water, hot water. What that actually does is soften the log and makes it easier for the cutting tool that actually cuts and unspools the thin sheet of wood, makes them tender so that they can do this without too much damage to the wood fiber. Otherwise, your wood fiber when laid up in the panel, has a...you lose some of the structural quality, strength of it by that, and, also, it will crack and break easily in drying, and a number of things. So, that's the kind of experimentation that was being done up in Canada. Also, the other and probably more major issue, the physical issue of cutting the logs into plywood wasn't nearly the complication as was the process of making glues that would do the job competitively with the Douglas fir on the West Coast. They had been manufacturing plywood on the West Coast for many years, and, of course, the major big companies, Monsanto and many other big companies had pretty well ironed out the requirements of gluing. But for southern pine, it's a whole new game because the growth rings in pine is much wider and much more dense in specific gravity. The gravity, as I indicated earlier, is much higher, and this gives you a real problem in making glues work satisfactorily, so we had a bigger chore in that process. But Monsanto mounted that one quickly and came along with satisfactory gluing techniques, and so much so, that Joe Denman was encouraged to go forward with the plywood plant development in short order. It didn't take him long, working with the U.S. Plywood people, who had a lot of experience in building plants, of erecting and making the plant. Our next problem there though, was trying to conclude a plant that would continuously perform with southern pine, as opposed to the softer and easier to work with species from the West Coast. That did give us a great deal of a problem because the major manufacturers of equipment were manufacturing equipment for those western species. But they were the available suppliers at that time, so we were actually using much of the equipment with West Coast equipment, while in fact, we really needed specialized equipment...

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SK: ...they did continue, though, to operate with our southern pine, using the western equipment, but we did eventually shut down that operation and go genuinely to southern pine that much of the world...You can see the carryover down in Pineland mill now.

JG: We'll stop the tape right here for a quick break.

TAPE STOPS

TAPE RESTARTS

JG: Mr. Knutson has been telling me about their barnstorming days, piloting. Go ahead and continue to tell about the professional pilots and the non-professional pilots.

SK: Yes, that was just kind of a pick-up over talking about the Pine Bough cafe down here on the street. I used to always look for that at night when coming home flying. Mr. McQueen and Horace Stubblefield and I used to do the bulk of the flying for the company, and almost any time that Arthur or Carol Allen or Latané, when they needed to go somewhere, we wanted to find out how to get them there. So, we were pilots of call, and one of the many hats that we wore. Coming in late at night, the Pine Bough sign was a very prominent...it was lighted, and you could see it a long way. So, we could fly 'till we could catch the highway and come down the highway and then we'd see that sign and rt a procedure turn that would turn us right over the current office building, the corporate office building, and then over the Lottie Temple Civic Center where the...

JG: Of course, that wasn't there then.

SK: ...but the big orchard of pecans that are still there, were there at that time. We'd come right over the top of those pecans trees, and the runway was right behind the old Tin Barn. The Lumberlast building is sitting right in the middle of the runway, and we'd make ...as we came in, we'd drop landing gear and turn on the lights and run the cows off the runway. Those belonged to one of our old logging contractors who had a grazing right down there and the darn cows would get out there in the middle of the runway, so we'd always have to run them off the runway and then come back around and land, and then go clean the airplanes up.

JG: Were you flying when you came to work in '59?

SK: I started flying with Mr. McQueen down here at that time.

JG: Down here you started. So this would be the early '60's?

SK: Well, no, this is the late '50's. Stubby had been flying continuously from the time he got out of service and...

JG: He was in World War II.

SK: Yes, and of course, John Booker was involved in many engineering tasks and didn't have quite the time to spend doing the flying, but he... I don't recall that he did much flying and neither did Joe Denman, and Joe was a Second World War aviator as well, but Joe didn't start...again, you had your primary duties, and Joe was more valuable to us as engineer, operations, promoter sort of guy, and John Booker, the same way, and I guess they could spare me and Stubby to do a little flying. We were more dispensable, let's put it that way. We used the airplanes, though, later on as spray planes to control undesirable weed species on much of our timberlands so that' the pine that we were primarily interested in would get a good jump and grow. So, we had spray planes. We had all kinds of activities going on, and, that was just one of the many things; everybody wore several hats. Also, at those Saturday morning meetings, we discussed all of the activities, and people were well knowledgeable of what the other guy was doing, and any...wherever

you could be of assistance to him in promoting and expanding the projects, that's what you were supposed to do, and you didn't get paid for going out and surveying on Saturdays either. That was just one of your jobs. Kenneth Nelson and Dennis Maynard did the bulk of that, though.

JG: Tell me more about Dennis Maynard. What exactly did he... he did surveying?

SK: Dennis Maynard was a forester from Stephen F. Austin and came to us shortly after Bill Nichols came. I mentioned Bill Nichols was the first degreed forester at the company, but Dennis Maynard was out of the military during the Second World War, as well, and went back and finished up, and so he wasn't far behind Bill Nichols. He was just a couple of years behind Bill, and Dennis was an astonishing, bright forester that really contributed to our operations and was a really a God-send to Kenneth and to Mr. Kenley. He was a great surveyor, and if you'll look at the land records or tax records, and so on, his mark is on them everywhere.

JG: What about Bob Farley? I have crossed that name.

SK: Bobby Farley. Bobby Farley was another employee of the Forest Operation, or Forest Division. He worked with Kenneth Nelson about the same time as Joe.

JG: Was he a degreed forester?

SK: I don't recall that he was ...no, no, he was not, but he was a very qualified land manager and worked with Kenneth up until the time that we started the new fiberboard plant and that was in the mid to the late '50's as well, late '50's. Bobby Farley went to work with Carol Allen at the fiberboard plant. So it's just another indication of how our people kind of flexed and moved in to projects that they would contribute to.

JG: We were talking earlier about the plywood plant. Maybe, go in a little chronological order, some of the different, or maybe new industries, or new to Diboll, other than just dimensional lumber. Like, shall we just start about the plywood plant. Maybe, go on up through the fiberboard plant, particleboard, and, then, get in to paper; and how those changes in manufacturing, and the market, and so forth, how that related to your job in the logging aspect?

SK: Well, all of these enterprises were virtually, directly come from our forest and our natural resources, and, so as we would move along with our sawmill, for example, we had... you'd just generate squares from sawing lumber. These squares were the raw material that went to the handle factory, and Mr. White, and his son Herb, would convert them in to handles, and they became the largest handle factory in the world. The same thing was true with the sawdust. We were having to burn it or haul it off. At the same time, Arthur had vision there of using that as a raw material for some product, and that's when the fiberboard plant came along. One of the most profitable enterprises that we ever, ever had. Even to this day that fiberboard plant is a very keen developer of earnings, and off and on, it's been miraculous, just the amounts that it generates. So, it's been a

[unintelligible]. Well, then along with that, Mr. Jim Love, who was very instrumental here in civic enterprises, whether it be music or the library, whatever, he opened up the Love Wood Products Plant. They used bark that we were throwing away, again, or burning as fuel, and he used that as a "Miracle Mulch."

JG: Yes, Miramulch.

SK: That became very profitable, and another one that he manufactured, wood flour.

JG: Tell us what was that from and what would it be used for?

SK: The wood flour was a very finely powdered, short of wood fiber, and it was used by, again, applying a resin to it and then into a mold and heated, and it made such products as you can imagine, molding toilet seats. We had some factories in Pineland that John Booker and Mr. Sweeny operated over there for years and very profitably.

JG: They used the wood flour from the logs?

SK: They used the wood flour, and that was an example. Then going on from that came from the fiberboard, to some high density type of board, and then from that to a different product called particleboard. Bill Oates was one of our early people working with John Booker over at Pineland where we bought, again here we are buying a factory from Europe because we just weren't generating that kind of equipment yet. So, we had to operate with the equipment available, so they brought in a factory from Germany and operated it very profitably. But as the technology improved, higher-grade materials and better products were being made by the improved factories. So, we leaped from that factory into a new one, and then eventually, just like with the one we are operating today, that John McClain is operating up here in Diboll. So, all of these are manufacturing opportunities of raw materials and technology and a mind-set, and that mind-set was always Arthur Temple's.

JG: I realize that a lot of that is, as you described, wood waste or waste from other processes. Did that impact in any way the forestry end of what types of trees to grow? I guess my question is, is there special considerations in forestry and in logging?

SK: Yes, and no. By in large, our improved forests are able to supply the materials that are requirements for all these processes, but there are some opportunities to do some special things with the improved forest technology. Example being now, while pine trees, per se, planted and growing in the natural, have limbs on them almost ... down close to the ground, and as they grow older, they kind of self-prune a little bit. But, these limbs create knots and other kinds of aberrations that aren't desirable to a lot of our products. So, today we have certain high-grade stands where they are going out and trimming these with long, long limbed saws, and they limb them, they cut the limbs off of them. The trees will clean up earlier and make more clear lumber. So, this is the case of growing clear saw logs so that you can have very keen, high-grade lumber that's very desirable to look at for clear purposes. We are doing some things like that. A number of projects, a

lot of them in hardwood, and hardwoods were such a cheap product. It just didn't have much interest except in ties and board row which we, I think everybody understands board row, used to lay down kind of a corduroy road so that vehicles can get to an oil site. And outside of that, hardwoods in Texas, by in large, were of lower grade than they are in the Mississippi...

JG: What time period are you referring to? You said that hardwoods were of lower grade.

SK: The hardwood species, whether it be in the oaks, the cypress, all of them were of lower grades. The higher grades were taken out early in the century by Arthur's predecessors.

JG: They had at one time three sawmills. One of them was specifically hardwood. Mill 2 was hard or pine. And then one was pine.

SK: And they very selectively cut only the best trees, so what was left were low-grade trees, and the low-grade trees just didn't find much interest except, as I say, in some of these other products. They just didn't have much dollar value.

JG: Were these being deadened when you came in the '50's? Intentionally deadened?

SK: There were some processes where they were girdling trees in order to just take them out of competition and let the pine that's growing intermingling with them.

JG: Was that true of the industry as a whole?

SK: Well, that's pretty true of the whole industry, but not all of them could afford that luxury, because it's a long-term deal to go out there and girdle trees that are thirty-six, forty, fifty inches, and these were...but were undesirable species. Post oaks, for example, nobody wanted post oak, but they were these big, huge trees, and when you girdle them and kill them, and then you're letting the little pines that are on the ground grow up. You can imagine how many years it takes to get your investment back. So that wasn't a very attractive enterprise for a lot of people. It was experimental, to a large degree. Then we started using herbicides and flying it by plane, and that's one of the issues, or one of the areas, that I worked with Mr. McQueen on. We had a couple of airplanes that were equipped to do spraying, and we would fly with various chemicals, and some of it later, we find, are chemicals that we probably would not use for that purpose again. But at that time, until we were knowledgeable, but once we did use spraying techniques, though, to combat the undesirable species and let our better species get a jump and use the soil attributes most effectively. So, that ...the hardwoods, we just didn't ...and now today, though, we have a very strong team in our Forest Operations under Jack Sweeny, Jr., that's his... and they are doing, are making some real strong efforts in developing hardwoods.

JG: He just recently hired a hardwood forest manager, didn't he?

SK: Yes. Not only that, but we're ...people, developing the technology, doing a lot of development of technology and experimentation that others haven't chosen to do, and we feel that in the future that will be a very strong plus for us.

JG: As I understand it, there is really no hardwood manufacturing site in our immediate area. So, most of the hardwood logs, aren't they being sold to others elsewhere?

SK: We do not currently operate any hardwood operations for lumber or solid wood products. In Center, a couple of mills up a little further into Northeast Texas or in to Louisiana, Arkansas. There are few mills around that will travel a great, great many miles to get good quality hardwoods, but, again, they're very selective and the value really still hasn't excited a lot of people yet.

JG: Comment a little bit more on the logging end of it with these new, and I guess I'm specifically thinking of paper, the beginning, I guess, in the early to mid-'70's with the paper mill at Evadale. What operations ...did you inherit or continue any operations that Eastex was doing? What was the relationship there?

SK: We affected the technology used there quickly and early after converting to the longer logs, the ability to put the skidders and the hydraulic heel boom loaders and the big trucks. Strange that that comes up, but I recall on a Sunday after a long series of heavy rains, Southland Paper Mill was in dire straits for fiber. They were running out, they were literally running out of wood. All their operations were four-foot wood. What I mean by that is they had crews out there that just virtually would cut with a power saw pine timber into four-foot sticks, and they would load it by hand on trucks and then drive the trucks to the mill.

JG: Stacked like firewood, crossways with the road, not lengthwise?

SK: Yes, in a cross-row they'd be ...so an eight-foot bed, that was the legal width that they were permitted to operate. With the wet weather, these small trucks and doing it by hand, they could not get into the woods to get sufficient quantities to operate that mill and Harvey Sprock, who was...no it was Hayes Smith, I am sorry, Hayes Smith was the...Harvey Sprock was the manager of forest operations. Hayes Smith was in charge of raw materials, and he called me on a Sunday and was asking what I could do to help him. The mill was going to shut down without wood.

JG: You're talking about Southland? Sprock and Hayes Smith was at Southland.

SK: Now, at that time I'm not sure that we... I think we were probably out of the partnership with them, but at one time we owned a portion of Southland Paper Mill, and Temple Weber, our chairman of the board, served on that board. But eventually, we liquidated our interaction with them. At the time I was referring to though, was where they were having trouble with wood supply, I don't remember whether we had sold our portion of Southland Paper Mill or not, but, at any rate...

JG: Is this before the Time-EasTex merger?

SK: Yes. Oh, yes.

JG: Before the Temples had their own paper mill.

SK: Yes. So, on that request from Hayes, then of course, we were all working together in East Texas. It wasn't just, they weren't always competitors. We had friends, even if they were competitors. We didn't want to see anybody suffer like that. So I said, "Well sure, I've got a couple of spare contractors that I could send over to them." They had the new technology, the skidders and the big trucks and the hydraulic loaders, and if anybody could pull them out of a strut, they could. So, I remember sending Dee Hannah, and I've forgotten the other contractors, but two or three of them over. In short order, because of the vast improvement in the ability of these skidders to operate in wet weather and to get the trucks out and on the highway and to haul large, long, and, of course, this was longwood, so they had to learn how to buck it up. Well, they found out that hauling long wood to the paper mill, and they had bucking saws put in, and they started cutting it up in...

JG: Bucking? You mean taking the limbs off?

SK: No, it cuts them into shorter pieces. It cuts them into pieces that may be sixteen-feet long. So, they cut them to these four-foot pieces that Southland Paper Mill customarily was set up to use. They have a...it's a ground wood process, and it uses four-foot sticks of wood. So, they would have to buck these long pieces at their mill to have the short pieces in order to feed them into the mill. But, the longer logs are, cutting them in long form is what facilitated and used the advantage of the skidders and the hydraulic loaders and the big trucks. If we were to try to operate on short wood out of the woods, it was a real problem; and you were asking earlier about the applications and how changing technology at the mills, how that affected forestry or logging, harvesting operations. Yeah, it does. It didn't take long after that illustration I just made with Hayes Smith and Southland for all those paper mills to convert to long wood. They all went to long wood and started using the skidders, and it converted the harvesting industry of southern pine as it will never be again. It used to be all the old "darkie" with a truck that would just barely run, and they worked for a dealer, and the dealer would supply them with gas and power saws and would help them get their trucks fixed, and whatever, in order to keep them moving four-foot wood. When it got to a point where they just couldn't supply the mills on four-foot wood, then they started doing something else. Now, it's gone on to even a higher degree of technology, where they have chippers that they take to the woods, and they literally skid these logs tree-length to a chipper, and it chips them and blows them into a van. So, when you see a van come down the road, you can't tell what's in it, but it could be chips on its way to the mill. Of course, we went from that technology to putting in what is called a chip mill out on 103, west of Lufkin. We have a very large chip mill, and we chip both pine and hardwood. So we are able again to use the hardwood that was... the small hardwood tree-length logs that were culled. They were given away,

they were burned, they were just, whatever; they were waste. We now bring them in truckloads, tree-length loads, as you can see coming out any day on 103 going out to our mill. And if you go out there, there are thousands of cords of this wood stacked out there, and it makes its way to a very gigantic chipping operation, and it chips tons and tons by the hour. So these chips then are transported by one of the local contractors to our mill at Evadale or Orange and/or whatever other paper mills may be required. And, so, that's another... and so that changed the...you understand the operations.

JG: Do you export any chips?

SK: Pardon me?

JG: Do you export any chips?

SK: No. There have been some operations that do, but we've always found a source for our chips here, locally. And, beyond that, we're expecting in the future to be receiving chips from abroad. Namely, our venture in Mexico, which was a joint venture, again, that didn't prove out, and so we took it over, and we're running it. It's a Temple venture now, and it is operating with some species that we are not familiar with here in the United States, but they are very fast growing, highly productive species.

JG: Is that eucalyptus?

SK: That's the eucalyptus, and they have some other species down there, as well, some other kinds of pine and other forms of hardwood. But, they are experimenting again. This is an experimentation as to what species are most suitable and have the right kind of fiber that fit in with our paper mill and interests. Also, the paper mill people, seeing this new product, are able to start working on the new technology required at their mills in order to utilize this material more effectively. And, so, it all kind of goes hand and glove, and the big thing that gets it moving, though, is someone thinking about a new vision. Arthur always had vision.

JG: Always thinking ahead. I mentioned I was in Beaumont from early '95 to the end of '98, and John Roby is the transportation manager of the port there in Beaumont. I had talked with him about the possibilities of what all was going to happen with sending those chips up. But, that's what they were working on then. This was several years ago that I first talked to him about it.

SK: Well, we did it with the Japanese when we sent them waste metal products prior to the Second World War; and some of our competitors who find the surplus of fiber beyond their mill requirements, or in looking at the markets of available standing timber and wood fiber, if they can get it harvested and to the ports cheap enough, and if the markets overseas would pay enough, they could make a buck on it. So, they're making money on it. It may come home to haunt us in the future though, when we start looking at the demand of fiber for all of these mills that are now operating probably, well, below

capacity, and they are operating below capacity because the paper industry, the paper markets, are flooded, and so there's not a profit in operating at those higher levels. But, if and whenever it does, and in time as the economies are inclined to do, some of them are cyclic, and as this comes back, you'll see these people will stop shipping that wood, or it will become vastly more valuable to Japan and other Pacific Rim operators, but I perceive that the plants that we have will need more fiber, and yet there will be many more plants developed all around the world for a lot of fiber is going to find its way off-shore, and that's something we're going to have to start, and that's actually the reason we're involved in Mexico, and why we're looking at it hard and fast now. We don't want to leave our shareholders without the assurance that we are looking at those opportunities and problems.

JG: Going back a little bit more to the logging end of it, what would you say the biggest technological change during your career, the logging end of it?

SK: Well, I don't know just exactly how to hit that one, because I started out whistle pumping in the woods with...in the western species, and it's come from animals to cable systems and vast logging operations by rail and these big skidders now, they've taken over the process of moving logs and wood fiber in the woods excepting in areas where it's very steep; and there again then we've got another one, because we even logged some by helicopter. Helicopter logging is a very acceptable process on the western slopes. It's special because of the high sensitivity to damage. The soil types, and so on, are very susceptible to damage, and that's the big skidders or the big cable systems and that, they do damage to the surface and site degradation, so the helicopters are finding a way in. So, we've gone from doing it by animal, and virtually horses and mules and oxen and everything all the way up to doing it with helicopters. In that process, the biggest innovation that I think had the most effect on the operations, though, was a simple tool that a guy in Enumclaw, Washington invented. He had a truck... a Buick automobile agency, and in the meantime, on Saturdays and so on, he'd work on ...he lived in the wooded areas of Washington State, had a lot of logging contractor customers, and so on. So, he worked on innovating a new tool, and it was the skidder, the logging skidder. The first one that he built, I was familiar with...

END OF TAPE ONE, SIDE TWO

JG: We are continuing now on a second tape, and Mr. Knutson was telling us about the skidder that was developed in Washington State.

SK: We were confronted with this, still with this situation of cutting short logs, and contractors still working with animals or with little farm tractors, and it wasn't efficient. It just wasn't getting the job done. So, I contacted this fellow that I knew in Washington State, from Enumclaw, Washington and asked him if he could ship one of his prototypes down here for us to work with, and he said, "Well, yeah, I'll send it down there, but if you return it, you got to pay the freight both ways." I said, "That's fine." So, he sent it down, and we put it on test mode with some of our logging contractors, and the idea, the technology was good. The difference was it just wasn't big enough, didn't have the power

that was required to skid and handle these big logs that we had here in the South. The western species, again, this type of technology was directed to small-log cleanup, kind of thinning operations, not full-blown logging operations. Full-blown logging operations out in the West were still with high-lead and various other cable systems. So, for some of those purposes, the small machine was satisfactory, but it wouldn't work here. So, I redesigned the machine and sent it back to him, and Dwight Garrett took those ideas in mind and converted the machine, put the big diesel engine in it, put bigger planetary axles on it, a bigger carco winch and fairlead, and some protection equipment for the operator, which wasn't customary to begin with, but we could see was needed to keep limbs and tops and things like that from injuring the operator. This was another issue of ours. Safety has always been a key matter, and that was one of the big things you asked that occurred in the logging business, and that's when we started applying concern for the people and making it a safer operation. Well, this did that, but at any rate we brought the bigger machine back down here, and as soon as we brought it down, it was an immediate, an immediate, clear picture that this was what was going to happen, and they were selling for something like just a few thousand dollars apiece at the time. Grady Felder, one of our logging contractors, Willard Grimes, I could go on with several others, but they all had their orders in immediately; and as these machines got to the South, it changed everything because they could jump in from those small, short logs to tree-length logs. And, when they could log the tree-length logs, and they had a blade, by the way, in the front so it could do a lot of rough logging road construction. You cleared the landings. It pushed up the logs. It did a lot of things that forerunners in the logging equipment could not do. At any rate, following that, came the concern for how do we handle these big logs and get them onto trucks. Well, then we had to bring the hydraulic heel-boom loader. This was another new one that we brought to the South, ordered them from the big western operations and brought them down here, and it kind of puts the butt of the log against the base of the boom, and then with a hydraulic grapple grabs it like you'd grab with your hand and lift it, turn around and put it on the truck. Well, they were very efficient...

JG: These were logs already on the ground?

SK: Yes, and they would be skidded to a landing and pushed up in the landing, and the loader would sit there and load the trucks as they returned to the landing. They could load a truck in just no time, and that truck was back on the road, going down there. It affected their production more than anything else ever did, and of course, with that then, is the next obvious thing, is that we have bigger logs and bigger loads, you have to have bigger trucks. So, here came the bigger trucks. Now, where do we do that? We got the big truck companies in, and we started devising the twin screw and the big diesel engines and the big trailers and so on. Now they were equipped and capable of handling of the sixty-foot logs. So then the big logs just pour in, and it just made the contractors more productive, more profitable. They became, many of them became millionaires out of the business enterprise, and, so, that was...and the skidder opened the door for all of that. That's the reason I think probably the skidder was the most influential thing in the harvesting operation, whether it be hardwood, pulpwood, the big saw logs, thinnings, clear-cuts, you name it, it still does it to this day. They are the primary tool of all harvesting operations.

The difference is, the skidders today are even larger than the ones that I quoted here a little earlier, and the cost is somewhere from \$350,000 to maybe a half a million dollars apiece. So, the price on them has gone up substantially, too.

JG: One of the questions I wanted to ask you and I neglected to do so, and I want to make sure I get it in. The term "sustained-yield forestry", that's a term that I come across quite a bit. Was that term being used in the late '50's when you came?

SK: No, no. That certainly wasn't. It's a matter though that kind of grew on us, and I made reference to, I think you on the side, Mr. Temple's concern about the hardwood bottoms down closer to Beaumont near our paper mill where he could see that we needed to protect and preserve some of these sites, and he was keenly interested in that. Well, our efforts and concerns started back in the '30's, and prior to that we used to cut logs, as from the forest, kind of on a diameter cut. So, they say, "Well, cut everything fourteen inches and larger," and, then, we finally went to Kenneth Nelson, and Dave Kenley worked with the U.S. Forest Service here in the southern forest. I've forgotten where this forester was from, but in developing a system and that system was selective harvest, and what they would do they would actually, and this was an extra expense, and this is something that nobody wanted to do. They would rather just say, "Go cut the... ", and they didn't have to pay for this, but we had markers that would go out and actually look at every tree, and they would use paint to put a spot on it (**JG:** Blue paint. Blue?) and identify it in a way that said, "Cut me, but cut me in to this kind of a form" or something: long logs, short logs, twenty-foot logs. This is a log that's suitable to make big timbers." We used to cut a lot of timbers. Mr. Weber was our chief salesman for that product, and he'd give me a little slip each day, and I'd go out there to the cutters and tell them, "Well, cut me so many logs of this size" that will make these big timbers. So, this was a way of improving our utilization, but at the same time, it was recognizing the early steps of recognition that timber management wasn't just simply going out there and getting trees growing and then later coming back and cutting them. There was a lot more to it than that. So, with this SFI project that's coming out of the National Forest Product Association and ...

JG: Can you tell what SFI is?

SK: This is the new designation for a procedure of protecting the forests, the sites, sustained forests ... I skipped some stuff, but it's a monitor, though, for a process, a program, and all of the major corporations, many of the agencies of government are committed to it. And, what they're doing with it, initiative is what... what it amounts to, is they're taking the first steps to get in and say, "Well, why do we wait for erosion and terrible results? We can start planning now. We can start doing the things that take care of it. We want the forest to be there in the future." They were eliminating or handling the criticism that is coming to you on clear-cuts. Clear-cuts, they used to do thousands of acres. I've seen twenty thousand acres in a clear-cut and very little and no concern for the creeks and streams and wildlife concerns, the endangered species that may be growing out there, whatever. Just clear-cut the whole thing, (**JG:** Is that in Texas? That you've seen?) wind-row it and burn it and plant trees and have a twenty-thousand acre tree farm.

Well, this SFI Initiative is just a lot of good foresters getting their heads together. They're getting the wildlife people in. They're getting the soil scientists, you name it. They're getting them all in and devising a program that if followed, will reduce or control those kinds of wasteful, terrible approaches to using the forests. And it is doing a very good job in...so much so that the world is being attracted to this process, and it's going overseas to all these countries very swiftly. So, it's a tool that will be used to more rationally utilize a God-given raw material resourceful enterprise.

JG: I don't want to put words into your mouth, but are you saying that maybe the intent was there to have a sustained yield forest, but the term is a relatively new term? The "sustained-yield forest"?

SK: It's only a few years old...

[Interview interrupted due to phone call and not restarted.]

END OF INTERVIEW