

Narrator: Donald Smith (DS)

Company Affiliations: Resource Engineering, C. D. Howe Company, V. B. Cook Company

Interview Date: 4 February 2011

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Summary: Structural engineer Donald Smith describes his career and how he came into contact with Thunder Bay's terminal grain elevators. Smith details how he began with C. D. Howe Company and moved to V. B. Cook Company before starting his own firm, Resource Engineering. He lists a number of grain-related projects he did for these companies, including dust control upgrades, storage annex expansions, computerization, and distributing system automation, as well as other projects like structural work for nuclear plants, the mining industry, and the pulp and paper industry. He compares new dust control systems to the antiquated systems, describes the process of slip forming elevator silos, and explains the wear and tear grain produces on shipping spouts. Other topics discussed include his work on elevators across Canada and in Ghana, the competitive nature of engineering firms but the cooperative nature of grain companies, the story of C. D. Howe, his schooling through military colleges, varying designs of terminal elevators, consolidation of terminal and country elevators, and his post-retirement work doing structural inspections.

Keywords: Structural engineering; C. D. Howe Company; V. B. Cook Company; Resource Engineering; Grain elevator engineering; Grain elevator design and construction; Thunder Bay terminal grain elevators; Grain elevator storage expansion; Dust control; Grain elevator equipment; Grain elevator conveyor belts; Grain elevator loading spouts; Sheet metal work; Concrete slip forming; Structural inspections; Surveying; Country elevators; Inland grain terminals; Barnett-McQueen Company; Saskatchewan Wheat Pool; Alberta Wheat pool; Manitoba Pool Elevators; United Grain Growers; Cargill; Richardson International; UGG Elevator M; Cargill Elevator; Richardson Elevator; Saskatchewan Wheat Pool Elevator 8 (Ogilvie Elevator); Canada Malting Elevator; Bunge Elevator; Vancouver; Quebec City; Montreal; Ghana; Egypt

Time, Speaker, Narrative
EE: Well, it's a pleasure to be here this afternoon with you, Don. So perhaps I can begin by asking you to state your name for the purpose of the recording.

DS: Donald Smith. I'm known locally as Don Smith.

EE: Right. And perhaps you could describe how you became involved with the grain trade, although in your case, maybe what we should do is simply--. Well, tell us to what extent the work that you did related to the movement of grain through the Lakehead.

DS: Well, I first got involved with the grain trade when I took up employment with C. D. Howe Company, and I started with them in late 1964 in Montreal. I hadn't been--. And the purpose, they were hiring engineers at that time. They were just starting on the big grain terminal in Vancouver for Saskatchewan Wheat Pool. So I worked there for a number of months, and work was also being done here in Thunder Bay, which was the head office of C. D. Howe Company. So they advised me that they would like me to transfer to Thunder Bay for a year. That's what it was suggested. It's now 45, 50 years later—45, I guess—I'm still here, but anyway. So I arrived here in '65 and started work in Cumberland Street. Syd Halter was there. He was assistant manager. Carl Byers was the manager, and Murray Fleming was one of the owners—not too active, but he showed up quite often.

So I worked with C. D. Howe Company for eight or nine years. Not all of that time was in the grain industry. Three years I was off on another assignment in Taiwan on a nuclear project. Actually, C. D. Howe Company had been involved in Chalk River when it was built during the war. Maybe that relates back to C. D. Howe and his connections. But anyway, they did a good part of the structural and mechanical work at the Chalk River nuclear plant. So as a result of that, they ended up getting the structural work at the nuclear plant in Taiwan. I was sent off to Taiwan for three years to look after the structural part of that.

EE: Was that in this nine-year period from '64 through '73 or so?

DS: Yes. Yeah. So that would have been from '67 to '70 or so. And then when I came back, I got--. Prior to going to Taiwan, I was involved mainly in structural things in the elevators. At that time, they were building two new storage annexes down at it's Viterra B. At that time, it was known as Federal Grain or Searle. Maybe a combination. So the inshore annex that you see closest to the road on the B Elevator and then the far outshore annex, those were built about '65-'66. So I would have been involved in the piling and the sheet piling and the structural design. That would have been for a year or so, and then I went to Taiwan. So my initial initiation in C. D. Howe was mainly structural design.

When I came back, I got involved in other things with C. D. Howe Company on the grain side. At that time, they were just starting to do a lot of dust control work. So having come back to C. D. Howe, I was with them for a couple of years working on a breakwater project down in El Salvador for a year or so. Not a resident there a lot but made quite a few trips down there. And at that time, I decided to switch employment, and I went over to V. B. Cook Company. V. B. Cook Company was a division of Barnett-McQueen—Barnett-McQueen being the construction wing, and V. B. Cook being the engineering wing. Initially, I was

employed as the chief structural engineer, and after a year or so of that, I took a different position as the chief grain manager. So during that time, again, we were working on a great number of dust control projects around the harbour, and we were also awarded the design of an elevator extension in Vancouver for Alberta Wheat Pool, which was a large storage annex of about 2 or 3 million bushels.

[0:05:07]

EE: Jim Cook is very proud of that particular structure he told us.

DS: Good for him.

EE: And after Alberta Pool Vancouver?

DS: Well, some of the other projects I worked at at V. B. Cook Company, I was off in Ghana a few times. The government over there had hired a number of projects throughout the country, and they were all started, but it fell apart eventually. I think Nkrumah, that was the days of Nkrumah, and the government changed, and they kicked the Italians out. So all of these unfinished facilities were in the country, and V. B. Cook was asked to see if we could do anything with one particular one. So I went out there a number of times.

EE: Where was that?

DS: In Accra.

EE: In Accra.

DS: Yeah.

EE: I spent the summer of '62 in Ghana, so I listen with great interest. And Nkrumah disappeared, I think, about five years later. Someone tried to--.

DS: Yeah. That would have been about the time the Italians started. They spent a couple of years--. Oh, he was kicked out five years before?

EE: Five years later. I think it was about '66 or '67 that Nkrumah was driven out.

DS: Well, these facilities that I was looking at, the structure had been pretty well finished and some of the mechanical features had been completed, and there were all kinds of crates on the property that had never been opened. So it was kind of interesting opening up to see what they had.

EE: Christmas in Africa, eh? [Laughs]

DS: One of the other projects I worked on with V. B. Cook Company was in Bunge in Quebec City.

EE: Mmhhh. The Bunge Grain Company?

DS: Pardon me?

EE: The Bunge Grain Company?

DS: Bunge Grain, that's right. That was a major automation project. Bunge is quite a large terminal there, so there was an upgrading of conveyor belts and upgrading of their unloading facilities. A lot of small projects throughout the elevator. Again, at the same time, V. B. Cook Company was employed to work for Canada Malting.

EE: Here at the Lakehead?

DS: Well, no.

EE: Toronto?

DS: Initially it was for a brand-new malt plant in Montreal. So I was the project manager on that project for a couple of years. Spent a lot of time going back and forth between Montreal. This was for a brand-new malting plant, like a green field plant. And about the same time, we were working on numerous projects in Calgary, Winnipeg, Thunder Bay, and to some extent in Toronto. About that time, they had decided that the way they dried the malt through a direct-fired kiln, that that was going to be--. It was a carcinogenic process with the direct fumes contacting the malt could be a problem. So all of these malt plants were refitted with furnaces and indirect firing systems so that fresh air, hot fresh air, would heat the grain, not fumed. Air was fumed and--. So I worked--.

EE: So--.

DS: Go ahead.

EE: So beer in the earlier era—because the hops were, the malting, was going into the beer production, I presume—so there was concern that beer might be carcinogenic as was--?

DS: Yeah. There was a study done at that time. I don't know whether it was a Canadian study or American. It was sort of accepted worldwide because a lot of the buyers, the market, for Canada Malt was in Africa and in Europe. So the clients were demanding that the malt not be heated by direct fire.

EE: It was the flame or the hot air right off the--.

DS: Well, basically, the process before was they had a couple layers of drying beds up above with big gas-fired flames down below with all of the flames and the hot air from the flames passing directly up through the malt.

EE: Really?

DS: So it was a major project to--.

EE: This was natural gas they were burning?

DS: Natural gas, yes.

EE: Yes. Pleasant thought that. Anyway, press on. [Laughing]

[0:09:51]

DS: So I worked with V. B. Cook Company until 1982, and at that time, I had always wanted to strike it out on my own, which I did in '82 along with a partner. We started up a company called Resource Engineering. Resource, we selected that name for the grain industry and the sawmills and the mining, for any resource-related industry we were interested in. So my partner eventually disappeared, and the company became mine. And it took us a while to get started, but eventually we accumulated clients

throughout the grain industry with Richardson's, Saskatchewan Wheat Pool, Cargill, and to some extent Canada Malting—various projects, mainly upgrading projects, upgrading conveyor belts, and new conveyor bucket elevator systems for elevating the grain, and sampling systems. We did not get involved in dust control. That was the domain of my friend Pritam Lamba that you might have run across in your travels.

EE: I have indeed. This was at V.B. Cook, was it, that he was doing that work?

DS: No, he--.

EE: Or did he have his own firm?

DS: He stayed on. He joined C. D. Howe just a number of months after I did in 1965, and he stayed on with them for a long number of years. In fact, right up to eight or ten years ago when C. D. Howe Company was being sold and transferred from one company to another. For a while it was Montreal Engineering, and eventually it became AMEK, a British-owned firm. And for whatever reason, they decided that the grain industry wasn't lucrative enough, so it kind of fell apart. And at that time, Pritam Lamba started up on his own, concentrating on dust control. So he remains in that business today in his own firm.

EE: I see.

DS: So.

EE: Well, that's--.

DS: I have to collect my thoughts here for a minute.

EE: Well, you've been doing a splendid job of scanning your career. So when did the Resource Engineering, was it--?

DS: Resource Engineering, yes.

EE: How long did--. Does it still continue, or did you wrap up the firm?

DS: Well, it was started in 1982, and my partner disappeared about five years, six years later. At that time, I was doing a few projects with UMA Engineering in Winnipeg. They were not large in the grain industry, but they would tackle the odd grain

handling project, and on a number of them they called upon me to give them some assistance—Churchill, Manitoba, being one of them. So I had an association with them, and at some point. It was about '89 or '90 they asked me if I wouldn't like to join them.

EE: They takeover your firm?

DS: Takeover the firm, yes. So for the next eight or nine years, the company—the firm, in Thunder Bay—was known as UMA Resource Engineering. They maintained the Resource Engineering name, although it was in name only. It was not an incorporated name. It was just an operating name in Thunder Bay. So we served the grain industry. We did a lot of work for Buchanan in the various sawmills. We worked in Longlac at the board plant there, and quite a number of the paper mills here in Thunder Bay as well as in Kenora. So at that time, our work was kind of spread maybe three ways between mining, grain, and the sawmills.

EE: What mining projects were you involved with just to fill it--?

DS: Well, when I was with V. B. Cook, I got a fair bit of experience in underground hoisting in Utah and in Arizona on headframe construction. So at Resource Engineering, we did a certain amount of work at camp development in Hemlo. Hemlo was started up about 1982. And later on, we worked at the Lac-des-Isle one on smaller projects. These projects that we were taking on, a good number of them were for contractors not for the mine themselves. A contractor would have an idea and work it up with the mine, and then the contractor would come to us and ask us to work with them to provide the detail drawings and the supervision of the work.

[0:15:24]

EE: I have the sense from what you were describing about the elevator work that it was sort of process advancing machinery and systems that you were particularly focused on.

DS: Yeah, it was mainly upgrading. The major upgrading at that time was the dust control work, and although when I was with V. B. Cook Company-- V. B. Cook Company were quite involved in dust control work, and I was never involved directly in the mechanical ventilation system, but I was involved on a project basis. So later on, when I went on my own, I didn't pursue any of the dust control work. At V. B. Cook Company, we worked on the dust control at Pool 6 down here. We worked on UGG M [United Grain Growers] and UGG A. And at the same time while the dust control work was going on, we built the new office building down at Pool 6, and there's a new office building at Elevator M as well.

EE: Sure.

DS: I was involved in both of those projects.

EE: Oh, yes. This dust control machinery that was being installed in the '70s replaced equipment that was put in after the Second World War, I gather. Can you say something about the earlier attempts and then what was happening at this point?

DS: Well, a good part of the elevators were built in the 1920s and '30s, and when they were first built, they didn't have any dust control at all. But what dust control they did have consisted of a fan and a cyclone. There were no filters as such, so the cyclones would suck out some of the dust, but they were not nearly as efficient as the filters. The modern filters actually work like a household vacuum cleaner with air being passed through bags. Like a household vacuum cleaner might have one bag, but an industrial filter might 40, 50, 60 bags in that one compartment.

EE: One sees these things on the outside of the terminal elevators here.

DS: Yeah. Usually, quite often, they're perched up on top of the track shed. Sometimes--. On most of the elevators, there's a ledge. Up on the scale floor ledge, and sometimes they're located up there wherever they can find a space. Normally they take up more room than the cyclones did. The cyclones were quite a bit smaller, and they just consisted of a fan and a can with a cone bottom. And the air came in on one side, and the geometry of the can made the air swirl around. And the heavier dust particles would spin to the outside--. Or the heavier straw and grain would spin to the outside, and the dust would fall down the middle.

EE: Now was that the 1940s work, these cyclone devices?

DS: No, the cyclones were--.

EE: Or were they even older than that?

DS: No, they go way back to the '20s and '30s.

EE: So that's the original attempt then to deal with dust?

DS: That's the original. And a good number of those cyclones stayed there with repair and the odd replacement right up into the '70s.

EE: Right. Do you have any sense what happened after the Second World War then when there was some initial attempt to go beyond the cyclones then?

DS: Not that I know of. When I first came to Thunder Bay, I can't think of any dust systems that used filters. And I've lived in this house for a long, long time. I moved here just a year or two after I came to Thunder Bay. And you look down towards the elevators, and during the summer there was a continual haze of dust coming off the elevators. You don't see that anymore.

EE: No. No, that was what the equipment installed in the 1970s, the filters--.

DS: '70s and through partly into the '80s.

EE: Right. Was there improvement in the type of dust control through this period or was there a new state of the art that was installed over that period of time?

DS: Well, the original systems were rudimentary. They'd just be the cyclone which would connect to a sheet metal pipe, and they'd have rudimentary pickups throughout the elevator. But as the filter systems advanced and were installed, they made a much bigger effort of the pickups and collection and putting shrouds on the equipment and then attaching the dust control pipes to the shrouds so that trying to minimize the dust at the source.

[0:20:15]

And the other thing that most of the elevators did, they hooded their belts. All of the elevators have almost miles of conveyor belts, and initially the conveyor belts had idlers that would carry the belt, and these idlers would be located every eight or ten feet. The belts were fairly flat. They didn't turn up too much on the edges, so you weren't able to carry a lot of grain. But in order to make up for that, they speeded up the velocity so that the grain was moving along maybe 800 feet a minute. So every time it went over one of these conveyors, it was like a little waterfall and the dust would accumulate. So in the upgraded versions, they put new conveyors in with the idlers much, much closer together—three or four feet apart—so that the belt didn't sag between conveyors. And then they put, in some cases, they made the belts wider, but in a lot of cases, they turned up the sides of the belt on about 45 degrees, so they were like a deep trough. So with the larger carrying capacity, they could slow the belts way down. So instead of going 800 feet a minute, they might be going 450 feet a minute. As a result, there was a lot less dust.

And then on top of that, they actually put continuous hoods right on top of the belt like a box shaped profile right over the belt from the tail of the belt, the tail pulley, right to the head where it discharged. It would be all fully enclosed. Then this box enclosure system would be connected to the dust control system, so any dust that did accumulate or get airborne would be picked up by the dust piping and conveyed to the filters.

EE: So getting all of that equipment in was a pretty large job in any elevator.

DS: Oh, yeah.

EE: Would you be doing the conveyor system, perhaps, at the same time that the other dust control--.

DS: Well, most of the major jobs were done in January, February, March.

EE: During the slow time.

DS: When shipping was halted. So even as late as two years ago, I was working on projects at Saskatchewan Wheat Pool on replacement of some of these conveyors in the track shed basement. This equipment was the original equipment that had been there 30, 40, 50 years, so it's now being replaced.

EE: I see. The technology that was involved, who developed this equipment? Was there a particular place or company somewhere or other that did all of this?

DS: Well, perhaps the dust control was specialized because grain elevators are very explosive, and all the equipment has to be explosion-proof. But grain handling is a worldwide facility, and I can't really say who developed this and who developed that.

EE: You're not aware of any leader of the industry anywhere.

DS: Yeah. And conveying systems, again, are used in many, many industries—sawmill industry, the pulp and paper, and mining—but each one has its specialities, and they--.

EE: I guess the question in a sense would be was V. B. Cook, for example, the engineers here, were they achieving initiatives--. The language fails me for a moment. Were they making innovations in the work?

DS: Innovation in some respects. I like to think that the work we did at Elevator M, UGG, was an innovative project. That was one of the—I guess it was the only one—that was ever done in Thunder Bay, like, the distribution system in the workhouse. The original elevators were designed so the grain goes up to the top, it's weighed, and then there's a distribution floor that basically consists of a bunch of moveable spouts that have to be manhandled around. Some of them have a double hinge on them that are known as a mayo spout, and others are just a simple telescopic spout, but they all have to be manhandled around from one location on the distribution floor to the other. So at Elevator M, we took all of those out and put a large rotary automated turn head that the grain would come into, and then the turn head would turn around to one of about 12 or 14 locations to dump the grain. So this was all done remotely by local sensors and computer control. So that was a major undertaking that we undertook at V. B. Cook Company.

[0:25:45]

EE: Right.

DS: Now, the other thing is I was always impressed with the grain trade as such because they all seemed to cooperate a lot. If somebody got a good idea at Saskatchewan Wheat Pool, they didn't seem to mind if UGG came over and had a look at it. So in that respect, any good ideas seemed to be shared. And that's not only Thunder Bay. I remember going to Cargill, and I remember going to Seattle and a number of other places. You'd hear about a—and a number of places in the US as well—you'd hear a good idea that they had, you'd make a contact, and ask if you could come down and have a look at it. I was never refused.

EE: So this would suggest that the grain trade wasn't rife with patents being obtained.

DS: No.

EE: Exclusive rights, licensing being sought, all that kind of stuff. If someone had a good idea, they were pleased to have made that and then shared it with the industry.

DS: That's right.

EE: Yeah. Well, money was being made in the movement of the grain and the better that happened, I'm sure.

DS: Well, I just wrote down a couple of notes here. I was thinking about the number of firms that were involved here. When I first came, there was quite a number of firms that were involved in the grain trade, like Woodside's, Thunder Bay Northland, J. M. and H. O. Holmes--.

EE: You might just say something about each of those. Woodside, that's the foundry here?

DS: Yeah.

EE: What sorts of things did Woodside do, for example?

DS: When I first came, Woodside's were not as active as they had been, but they were still operating. But they made cast iron fittings. Like I mentioned, mayo spouts—the spouts that were 19, 20 inches in diameter made of sheet metal. But all the elbows and the fittings and that were made of cast iron, so that would have been a Woodside project.

EE: And the foundry was at work doing that.

DS: The bollards on the dock, the big heavy tie where the ships tie up, those were all made by Woodside's.

EE: I see.

DS: And one of the first automatic sampler systems was a Woodside sampler, and I think there may be still one or two of those around, which was a mini bucket elevator with little cups that were maybe an inch and a half wide and maybe three rows of them that would dip down into the grain on a conveyor belt, elevate it up, and then dump it into a conveyor system. So those were generally in use for many, many years. They were developed by Woodside.

EE: You don't know who at Woodside developed that?

DS: No, I don't know who. No.

EE: Right. Well, that's--. I visited Woodside once when it was in operation pouring some irons, cast iron. So it fits in nicely.

DS: So then there was Thunder Bay Northland, and they were a big, going concern. They made cleaning systems, various types of cleaning systems, and they made them here in Thunder Bay, and they were shipped Canadian, US, and worldwide.

EE: This was cleaning whatever--.

DS: Grain cleaning.

EE: Yeah. For cleaning the grain.

DS: Some of the units were very big. They'd be eight, ten, twelve feet high and six, eight, ten feet wide. Pretty complex machines.

EE: And they fabricated those here and shipped them off?

DS: Yeah, fabricated them. And of course, they also employed subcontractors in some of the materials that they would use, so they were quite a large firm. And then there was J. M. and H. O. Holmes. They did a lot of elevator work, sheet metal work, and roofing. So again, there's a lot of sheet metal in the elevator, whether it be spouts, spouting, or dust control systems.

EE: We've been impressed in our visits to elevators with the wear that those spouts take, how thin the steel becomes in a while.

DS: So in later years, they started lining the spouts with ceramic or in some cases some different types of plastic.

EE: Which is better than steel when it comes to the abrasiveness of grain?

DS: Yeah.

EE: I mean, that's the astonishing--.

[0:30:01]

DS: Yeah, you get some interesting wear patterns on steel. As grain flows over it, it almost developed patterns somewhat similar to what you might see in sand dunes in the desert.

EE: We've seen some of that, actually, at Western Grain—a piece of steel—and it really does have that kind of windblown sand pattern to it. [Laughs]

DS: Right. And then there was Thunder Bay Harbour Improvements [TBHI]. They're still active but not in construction anymore. They're equipment rental. So Thunder Bay Harbour Improvements, they date back to, I guess, 1920, thereabouts. They were a big piling contractor and heavy civil contractor. Anything concrete—foundations, piling—and the slip forming of the structures themselves. You've probably run across the slip forming technique in your conversations.

EE: Well, there was a gathering of engineers in, was it, 1987? An anniversary event, I believe. And I was looking at the papers, and Patricia Vervoort—who does visual arts history at the university—presented a paper on the construction of elevators and described the slip forming there. So that's a specific reference we can make. That's a fine way-- Well, you might describe slip forming, creating those silos.

DS: The slip forming consists of building forms for very, very tall structures such as the elevators might be. But the forms themselves are only four feet high, and there's a system of jacks. They jack themselves up steel rods that are located in the concrete. So the initial form is set at the foundation level, they're filled with concrete, and after initial set, the forms start to move. They start to crawl, climb up the jacking system. So once they've started to move, they don't stop. They move an inch an hour. Depending on the temperature, it might be two or three inches an hour or faster, and you just keep concreting as the forms move up.

EE: Continuous pouring?

DS: Yes. Night and day.

EE: How long would it take to get to the top?

DS: Oh, six, seven, eight days.

EE: So it's more than a week of--

DS: In the hot summertime it might be faster, and in the fall it would be cooler. Cement sets up according to the temperature.

EE: So the thickness of the wall would be what?

DS: Six, seven inches.

EE: Six or seven inches. And by the time the bottom foot is becoming exposed, it will have been--

DS: It would be strong enough to support itself, yes.

EE: Right. How long would it have been setting by that time?

DS: Well--.

EE: Or how--.

DS: Eight, ten hours. Twelve hours.

EE: Eight or ten hours and then the movement would start?

DS: Yeah. Mmhmm.

EE: And then it's continuous after that.

DS: And the forms themselves would have a deck located near the bottom of the form, and actually, once the forms got up a bit off the foundation, the deck would be constructed. So it's about five or six feet below the bottom of the forms. So there's a complete deck around the exterior of the structure, and you'd have a number of cement finishers that would work on that deck because when the concrete is exposed--. As the form moved up, the concrete is exposed, and then the cement finishers would trowel it and smooth it and make any repairs if necessary.

EE: Right. Remarkable stuff, concrete and what Portland cement can be used for, the way in which the silos can be built. Very impressive.

DS: So some of the concrete they built way back when, in my estimation, is as good or better than a lot of the concrete they use now. In those days, they used basic Portland cement. Now, they add additives to it to try and reduce the cost. Mainly to reduce the cost of cement. Other additives reduce the water content and things, and in some cases—I guess this could be disputed—but in some cases, I think they do more harm than good. The basic recipe of Portland cement—aggregate and water—is about as good as you can get.

EE: It was developed, I think, by the end of the 19th century. I have a chapter in my thesis on the cement companies, so I take a certain interest in Portland cement and the structures built from it. You can always economize on concrete. My father did a barn floor, [laughs] and he laid down quite a number of stones, and so the concrete was poured over that. But every place where there was a stone, there didn't have to be any concrete put, so he was saving money that way.

[0:35:15]

DS: Mmhmm.

EE: Of course, rebar is a more respectable way of strengthening. I don't think he was strengthening at all.

DS: Of course, when slip forming the bins for an elevator, you'd have horizontal bars that you would have to place in the concrete as the form moved up.

EE: They'd be, what, eight or ten feet long this steel, or was it longer than that?

DS: Maybe a little bit longer, and they were curved. They were bent ahead of time. You didn't try to warp them into shape. Like the bins were 18, 20—some maybe 16—but most of them were 20, 21, 22 feet in diameter. So these hoop bars they called them, they would be pre-bent to that diameter, and then they would have to be dropped in the form and tied to the vertical steel. In the lower sections, the pressure on the wall would be much higher. So in the lower sections you'd maybe have one half-inch bar every six inches. Whereas you get up near the top of the bin, you may only have one bar every foot or maybe every 14 inches or so.

EE: Yes. The walls were the same thickness from top to bottom, was it?

DS: Mmhmm.

EE: So only the steel was being used--.

DS: Yeah, very difficult to change the form line as you move up, although there are modern structures that do that. Like the CN Tower was built with slipforming, but they had a very sophisticated form work that the form lines would adjust as you went up.

EE: Sure. Because it is tapered somewhat.

DS: Right.

EE: Yes. Right. And so, this was TBHI then.

DS: I mentioned--. Oh, sorry?

EE: That's what TBHI, the sort of work that they did?

DS: Yeah. They were one of the major contractors when I first came to Thunder Bay. If there was anything to do with piling, concrete, dock repairs, you'd get a quote from them and also from Barnett-McQueen.

EE: Well, I was going to say, Barnett-McQueen were the original builders here almost.

DS: Yeah. So they were competitors. Yeah. Barnett-McQueen dates back even before Thunder Bay Harbour Improvements, and at one time, Barnett-McQueen actually did some of the design work. They design and build, and they worked on quite a number of the elevators out west. The Canadian Government Elevators at Moosejaw and Calgary and Edmonton. I'm not sure whether all of those--.

EE: There's one in Lethbridge as well.

DS: But those are some of the elevators that they might have been involved in.

EE: Yes.

DS: Another company that was known in town here was Daycon, Daycon Mechanical, and they were dust control specialists. They went way back. They were eventually bought out by an American company and changed hands a few times, and then eventually they disappeared.

EE: Daycon. And the spelling, is it D-A-C or is it D-A-Y?

DS: No, D-A-Y-C-O-N.

EE: Right.

DS: Mel Harnett would have been involved. Oh, no. No, Mel Harnett was more involved with Thunder Bay Northland. And I was trying to think of the name of the fellow at Daycon. His name just escapes me right now.

EE: Brent Scollie passed on some information. He was reading old newspapers, and he came upon an item dealing with the Day Company as it was, I think, at an earlier point. And he passed that on.

DS: Right. Yeah, that Day Company, that's where Daycon's name comes from is the Day Company. I guess it was originally known as Day Company, and eventually through one of the ownership changes, I guess, it became Daycon.

EE: Yes. Right.

DS: So those are some of the companies that were involved—the main ones that were involved—when I was first involved with the grain trade, well, at C. D. Howe and at V. B. Cook Company. But then I was just thinking, at the same time, all those companies are gone. There's not one of them that-- J. M. and H. O. Holmes, I'm not sure. They might still do some roofing, but I don't think they exist anymore either. So the only ones that exist now that do any amount of work in the elevators, one is Nu-Tech. They do conveyor systems, spouting, mechanical work. Sacchetti Construction, they do piling, dock work, dock repairs, structural work. And then there's another firm, G. E. M, and they're not that active. I haven't seen or heard of them for the last year or two, but they may still be involved in the mechanical side. G. E. M. initially standing for Grain Elevator Maintenance.

EE: Oh, yes. I see. *Gem*, of course, is a nice word too. [Laughs] Yes. What would you blame this disappearance of firms—or closure of them or whatever happened to each of them—what would you blame that on?

[0:40:12]

DS: Well, the elevators have consolidated. Whereas, when I first came to Thunder Bay—I'm not sure what number—but there were probably 15 or 16 elevators at that time.

EE: Elevator companies?

DS: Elevator terminals. Terminals.

EE: Or you mean actual facilities, terminal facilities?

DS: Different terminals. So now, I'd have to count them on my fingers, but there's only four or five now.

EE: And the decline in the number of companies as well. There were more of them--.

DS: That's right. Right.

EE: Back in those days in addition to the number of--.

DS: And the volume of grain that moves through Thunder Bay is down drastically. I'm not sure what the volumes are now, but it's probably—I'm just guessing—about 6 million tonnes.

EE: Give or take, I'd say.

DS: Compared to 18, 20 million tonnes.

EE: That's right. We used to aspire to move 20 tonnes a season, wasn't it? 20 million tonnes.

DS: So then a lot of the improvements that were initiated in the '60s, '70s, a lot of those were finished and made, and there was no big requirement for--. For instance, there hasn't been a single pile driven at elevators that I'm aware of in the last 15, 20 years.

EE: So TBHI--.

DS: That would have been TBHI's specialty.

EE: Is out of work. One could look at it at the end when the firms go into decline, disappear, close down, or whatever. Another way of looking at it, of course, is the other end—which you were just doing—the work that was needed, and the companies had appeared to do that work. I suppose the spin off, if you will, or the organization of V. B. Cook in competition with C. D. Howe was a response to opportunity. Your own Resource Engineering, I suppose.

DS: Yeah. Exactly. When I left V. B. Cook Company, I guess I took a good part of their--. I actually assumed a good part of the work that they had been doing in the grain elevators, and at the same time, they got more interested in mining projects. So it maybe worked out good for both of us.

EE: Specialists. [Laughing] What were the relations like between C. D. Howe and V. B. Cook?

DS: Well, there was always a very competitive atmosphere there. I would say they were not as good as the relations between individual grain companies. It seemed like the engineering firms were more protective and didn't really cooperate that much.

EE: Yeah. Well, you were competitors.

DS: Yeah, competitors. Yeah.

EE: The grain companies really weren't competing with each other except to move the grain as cheaply, ultimately, but as efficiently as they could because they weren't buying or selling the product, were they?

DS: Yeah. Their main interest was efficiency. I'm not exactly sure what the ruling was, but the way the Grain Commission and the government worked--. You see, most of the grain—the wheat, oats, and barley—at that time was all government owned, so the distribution of it as it came to Thunder Bay was so many cars distributed to Sask Pool and so many for Richardson. And that was kind of a formula that they followed. So they didn't really compete for cars. That was written in stone what percentage you were going to get.

EE: There were discussions in Winnipeg, I'm sure, with the Canadian Wheat Board was the--.

DS: Yeah. The Wheat Board. That's the Wheat Board, yes.

EE: Would be making the decisions and keeping each of these companies happy.

DS: Right.

EE: Which was probably easier to do than keeping the farmers happy sometimes. When there weren't enough sales being made, and the farmers all wanted to sell, and the--. Well, we won't get into line elevators and rivalries and elections and all the rest of it. There's good stuff from the '50s one could talk about in that connection.

DS: So one thing I jotted down here, it was not only that the industrial companies have kind of gone by the way, it's the engineering firms. C. D. Howe eventually was taken over by Montreal Engineering, and then eventually was taken over by AMEK,

a British firm. So they're not Canadian anymore, they're British. So just recently, V. B. Cook Company was taken over by Genivar from Montreal. So that's not locally owned anymore. I wrote down Wardrobe. They weren't really involved in the grain trade, but they were an industrial contractor around town and commercial as well. They were overtaken by Tetra Tech, a firm from California. So then I mentioned my firm, Resource Engineering, was taken over by UMA Engineering.

[0:45:27]

EE: Not that far away, though, when it's in Winnipeg as against--.

DS: It was Winnipeg. But now they in turn have been taken over by AECOM out of California, and AECOM is the largest consulting firm in the world now. It's strictly involved in design. There are other firms that are larger that are design, construction, and project management, but they specialize in design only. And as such, they're known as the largest one in the world.

EE: So your little company has ended up in the biggest design company in the world.

DS: Yeah. So then just--. Yeah. Thinking about firms, there was my firm--. Oh. I eventually retired from UMA Resource Engineering about almost ten years ago. Nine, ten years ago.

EE: So it's about 2000, 2001?

DS: 2001, 2002. And I didn't want to retire completely. I was going to work part time, but it didn't really work out that way. I've been working pretty well full time except for the last month or two, I've sort of tapered off.

EE: Downtime to be interviewed. [Laughing]

DS: So I'm still here, and Pritam Lamba is still here. So the two of us are about the only people involved in the engineering business as relating to the grain trade that are left, and we both came to Thunder Bay in '64-'65.

EE: So that's--.

DS: We both have ideas about quitting completely in the near future. [Laughing]

EE: So that's about 45 years then that each of you has been at work here.

DS: That's about it, yeah.

EE: Better add him to the list of people to be interviewed.

DS: So.

EE: And of course, others, I think, from St. Paul's United. Murray Fleming was a name that I heard at St. Paul. I didn't really get to know him, but one of the important people in our membership.

DS: Murray Fleming was a well-respected engineer when I was at C. D. Howe Company. He didn't get involved in a lot of things, and he didn't appear at the office very often, but he came in fairly regular. And anytime there was a major discussion or a major decision, a major approval on the way to go on a particular project, Murray Fleming would come in—or would be asked to come in—and would take a look and usually gave us some pretty good advice on which way to head.

EE: Do you think he ran the company when the name principal was in politics?

DS: Well, I wondered about that, and a matter of fact, I looked that up on the internet just the other day, but I didn't find anything on Murray Fleming. C. D. Howe, he started a company in about 1930 or so. Initially, he's an American, and as a very young man—21 or 22—he moved to Nova Scotia to teach.

EE: At Dalhousie.

DS: At Dalhousie. And within a year or two, that was about the same time that the Grain Commission was initiated as I understand it, so they hired him as chief engineer, which I found kind of surprising because he had no experience whatsoever. As a matter of fact, on the internet, some words were attributed to him that he had never seen a grain elevator when he was hired as chief engineer.

EE: Well, there's a little patch to check out. There is one biography. I'll take a look at it. Kilbourn and Bothwell, I think it is, at York University wrote that.

DS: So he started up the engineering firm. Oh, no. He worked for the Grain Commission for two or three years, and then he decided to strike it out on his own, and that was a time of major expansion in the grain business in Canada. So he was headquartered in Thunder Bay, and then they had an office later on in Montreal, but a good number of the projects were done here in Thunder Bay.

The head office was here. And they worked Moosejaw, Calgary, and some of the elevators down in the Great Lakes and elevators in Montreal. So they were very active for 10, 20 years, I suppose. And then he went into politics about--.

[0:50:02]

EE: Well, he was elected in 1935.

DS: So he had maybe 20 years.

EE: He was in Parliament until '57, for 22 years, and minister all the way through that period, a number of different ministries. "Minister of Everything," of course, was the term that was applied to him by the '40s.

DS: So when I started in '64, of course, he'd been gone from C. D. Howe Company for 30 or 40 years.

EE: Yes.

DS: But he still walked the halls. [Laughs]

EE: Well, that makes me wonder whether, in fact, J. M. Fleming—if I remember correctly—Murray Fleming will have been the operating partner, the main partner in the firm, or whatever his position was.

DS: Well, he was a major shareholder when I was there, so. Another one of the shareholders was Bob Steadman, who was a manager in Montreal. And Bob Steadman's wife was C. D. Howe's daughter.

EE: Oh, yes. Well, that's another one of the ways in which family firms add personnel. [Laughing] Take the son-in-laws in. Sons in law.

DS: Well, I've kind of--.

EE: Well, you've done a--.

DS: Gone through my notes here. I don't see anything that--.

EE: Well, we can always go back to the questionnaire. You've done a splendid job. It's not so much a typical day, it's been the life of an engineer over 45 years or so and still--. We might note for the tape in regard to your ongoing work, your email address, of course, suggest that as the DBSprojects@shaw.ca, so there's the invitation to get in touch with you for work to be done.

DS: Mmhmm.

EE: Well, the questionnaire includes--. Well, we won't bother with when. How long, who did you work for. We've answered that. What kind of work did you do? Typical day. What would you like people to know about the work that you did in the grain trade over these years? Maybe sort of focusing within what you described in the various kinds of work.

DS: Well, any of the projects that I was involved in personally, I made an effort to make it one better than the guy did before. So whether it was mechanical systems or structural--. I was always known as a structural engineer mainly, but I got involved in material handling conveying systems and weighing systems. Any of the projects I worked on, you wanted to make them one up than that particular had had before or that you might have seen down the road that your competitor had done.

EE: Yes. What was your education?

DS: Pardon me?

EE: What education did you have as an engineer? You didn't mention any of that.

DS: I went to military college.

EE: RMC Kingston?

DS: I went to Royal Roads for two years and then two years at--.

EE: Oh, in Victoria?

DS: Hm?

EE: In Victoria?

DS: Yeah. In Hatley Castle, Victoria. And then the last two years in Kingston. At that time, they weren't granting degrees, so I graduated as a full lieutenant from RMC, and then the government wanted me to be a full-fledged engineer, so they paid my way to the University of Alberta for one year. So it took five years.

EE: So the engineering faculty at the University of Alberta took these four years of engineering and other things as well, I suppose. You were being trained to be an officer, so it wasn't all engineering, I suppose.

DS: Mmhhh. Well, yeah, that was a good year because they gave me credit for almost everything I had. I didn't work very hard at Alberta. Like it seems to me I only had three or four classes a week.

EE: Oh, that's not engineering at all. [Laughing]

DS: They gave me a credit for most of the work that I'd done at RMC. So it was a pretty light year at the University of Alberta. I had gone through military college at the beck and call of the Queen, so to speak, so in return, I was obliged to spend three years in the military, which I did plus a little more. I spent upwards of four. One year of that I spent in Egypt, which is interesting. So I watch the news these days with interest. Some of the places I'd been, in Cairo and Alexandria et cetera.

EE: This was the peacekeeping work?

DS: Yeah. That was Pearson's--.

EE: Right. 1950 to '56.

DS: Peacekeeping. United Nations emergency force. So I was there for one year, '61-'62.

EE: Right. Yeah, so you would watch the news these days with interest too out of all of that. And did you do some projects in Canada as well as an engineer for the military?

[0:55:07]

DS: Well, I went to Egypt right out of University of Alberta, and they had me over there before my graduation ceremonies even happened. So I missed my graduation ceremony from the University of Alberta. When I came back to Canada, I was posted to Petawawa in Ontario, that's where I met my wife.

EE: I see.

DS: She was a high school teacher, French/Latin, in the school, the military school.

EE: In Petawawa?

DS: In Petawawa, yeah.

EE: And were you there then for the rest of your service?

DS: Yes. One year in Egypt and then two and half years in Petawawa. I was part of a field squadron in there, which is a group of several hundred people. Field squadron projects were military training in bridging, airfields, water supply, and that sort of thing.

EE: You weren't by any chance involved in the improvement of communications at Westwin in '64? No, sorry. No, it would be after. It was '66 when there was work done on improving the communications facilities out at Headingly, but no, that was after your service.

DS: Okay. So--.

EE: I was a surveyor's helper on that project, so.

DS: So part of our training every year was to drive in convoy fashion to Gagetown. So we'd spend the summers in Gagetown, six or eight weeks or so. Nine weeks in Gagetown, and then drive back in convoy fashion. It was a military concentration there, so it would be whole brigades, brigade groups that would be practicing, and you'd be employing your engineering squadron along with infantry, artillery, and armour corps.

EE: Well, you may have run into my wife's second brother who was in the service corps and had been a sergeant later on and so on. Gagetown and other places. One of the places you met a lot of men, I'm sure, in the forces over those years. So we were talking about what you'd like people to know, and you were talking about the improvement. Incidentally, there's a firm in town—or used to be—Fleming Systems, this isn't Murray Fleming or--?

DS: No. No relation. That's computer people.

EE: Right. Did you have anything to do with any of the work? Did you have any sense of what they were about? Did they do grain trade work?

DS: Well, they did some. When I was at V. B. Cook Company, the Grain Commission initiated a project at Elevator M. That was just when computers were first coming in. I can't remember the exact terms of it, but they wanted to put in a small computer at Elevator M to monitor the inventories, the grain in, grain out, and the scaling and all that. So we decided to bid on it, but we didn't have anybody at V. B. Cook that was computer literate, so I got a hold of George Fleming, and we put a team together. And we got that project. So I worked with George on that project, but I don't recall if I worked with him any more. Oh, off and on, he supplied-. After that, he supplied some computer services to V. B. Cook Company.

EE: So you got Geroge Fleming into the business in a sense because he was teaching at Lakehead University, was he not?

DS: That's right, yeah.

EE: And you got him into the grain trade doing practical work.

DS: I'm not sure how much he does anymore.

EE: Well, I don't know either. I think the firm may be gone. They were over on Balmoral, I think. The building was there. Fleming Systems.

DS: Yeah. Well, as far as I know, they were still active, but I'm not sure.

EE: I don't know that they are, actually. I remember Lloyd Axworthy once asking me in the '80s when I was in the House whether I knew George Fleming or not. I guess he'd run across him at some point or other. So it was the Grain Commission that had a contract to try to apply computers to grain storage and movement and so on and so forth, monitoring of it, that brough George Fleming into the business thanks to your initiative.

DS: And I used to see George once in a while, but I haven't seen him for a year or two now.

EE: Yeah. Well, that was what you'd like people to know, and the process of improvement is a fine one. Did engineers here in the city obtain any patents themselves for anything that they did?

DS: Pardon me?

EE: Did you obtain patents for any of the design work?

DS: Oh, no. Never. Never did. There was a couple times that we thought we might, but we didn't go through that routine.

[1:00:04]

EE: No. Well, when you're in the process business, which so much of this it, achieving more efficient movement of grain and so on and so forth is probably not much point to--.

DS: There was one thing that contributed to the general education is an organization called GEAPS. You may have run across it. G-E-A-P-S.

EE: Tell us something about--.

DS: Grain Elevator and Processing Society. It's an international firm or organization, but it's mainly US based. So in my C. D. Howe and V. B. Cook days, that was a big item. We had monthly meetings, and there'd be many people in attendance—the grain companies and the individual suppliers and the engineers—and they'd have an annual dance or Ladies' Night, they called it. It would be 150-200 people there.

EE: This was all here at the Lakehead?

DS: In Thunder Bay. But that's the local chapter.

EE: Yes. Yes, of course.

DS: But in comparison, I just received notice last week that the annual GEAPS dance is cancelled this year because of lack of interest. [Laughing] But anyway, I meant to tell you they'd have an annual convention every year, and a good number of us engineers, grain people, suppliers, would go. Mainly it was in the US, Houston or Cincinnati or Phoenix or wherever. One year it was Winnipeg. They swore they'd never have it there again because it was about 40 below.

EE: A wintertime gathering, you want warm climates. It was necessary in a--.

DS: And they had it in Vancouver a couple of times. I went there once. The Americans liked that. They were very impressed with Vancouver.

EE: Now it wasn't necessarily held in a grain-moving city, or was it?

DS: No. Well, usually it would be some grain connection because they needed a large committee to run it. So they needed a local chapter to organize it and run it. So part of the convention would be a big industrial exhibit. Many, many exhibitors from every aspect of grain handling, whether it's conveyors or electronic scales or even pest control and painting and waterproofing, all those suppliers would be there. And every year somebody would have a new gimmick that would impress people.

EE: Draw the crowd.

DS: Yeah. So I must have gone to 15. Probably 15 or more of those conventions. They were a two- or three-day event. I'd always bring something home from those.

EE: Yes. To what extent have you visited terminal facilities in other parts of North America?

DS: Well, of course, I know all the ones in Thunder Bay very well, and when I worked on Alberta Pool in Vancouver, I got to know that one well. But I didn't get to any others in Vancouver. But then I've spent a bit of time in the old Canadian Government Elevator in Edmonton and the one in Moosejaw, and then the elevators in Montreal. Two big port of Montreal elevators. I went to Duluth, the Cargill in Duluth. I went and toured that one year. And in Seattle-Tacoma or Seattle, one or the other—I don't remember. And then the one in Ghana.

EE: Buffalo?

DS: No, I've never been to the one in Buffalo. But I've been to some of the smaller ones on the Great Lakes in--. I can't really--.

EE: Sure. Port McNicoll and--.

DS: Yeah. A couple of those.

EE: There's one in Goderich as well. There were various locations.

DS: I've been to the one in Goderich. I didn't do any work there. I put in a proposal to do some work there one time, but it wasn't successful.

EE: You mentioned Ghana again. We visited the--. We were in the university for a week and then up north, and it was up while we were in the north that someone through a grenade at Nkrumah. And it didn't kill him, but it did injure the commissioner, regional commissioner, for the upper region who was in the entourage that day. There was a Greek consortium, I think it was, building Tema the port city, which you probably—or port town—that you probably visited east of Accra. Accra being the capital, of course.

[1:05:10]

DS: It was Greek, not Italian?

EE: It may have been Italian, actually.

DS: I think they were Italian. That's what I was led to believe. We never had any contact.

EE: And they were run out after Nkrumah was run out, you're suggesting?

DS: Yeah, yeah.

EE: I see. Did you manage to get grain storage reestablished in--. Or established, I guess. That was the intention, to provide facilities.

DS: No. There was one terminal we were looking at in Accra, went out there initially, and then awarded us the contract. So then I went out with two or three of the other people from V. B. Cook, and we spent a week or so out there measuring things up and opening up these crates and trying to figure out--. There were no drawings available. Nothing available on paper. So trying to figure out what could be made of it. Then we came back home. And we had a contract with them that they were going to pay us in advance on a monthly basis, on monthly installments. We worked the first month, sent them the bill. I think they paid us a down payment or something first and that's what we started on. We worked the first month and sent them a bill, and they paid it. Then we were working on another month, and they didn't pay it.

EE: Yeah. That's the end of the work. [Laughs] Has to be.

DS: And we worked another couple of weeks and quit. Then a month or so later, we heard that the organization had folded or didn't wish to pursue any more.

EE: We were building a rural post office, or helping mostly Ghanaian workers build a post office, up in the north. The intention being, of course, to put all of these little farms together and use machinery on them. Probably not the wisest idea to apply way up there where I'm not sure that the individual farms were that much less efficient than collective-type operations, which I suppose what Nkrumah's people had in mind.

DS: Did you ever get out to the slave port?

EE: Yes. Oh, we saw Cape Coast, Almina, and so on and so forth. They're very impressive, aren't they? Or depressing, however you want to describe it. Yes. It was very interesting. What might interest or surprise people most about the work that you've done over the years?

DS: In the grain trade?

EE: Yes, we better keep to the grain trade.

DS: That I've done or just the things in elevators in general?

EE: Well, either way.

DS: Speaking about elevators in general, everybody in Thunder Bay looks at the elevators and recognizes it's quite a large structure, but until you actually go through them and see that there--. In the workhouse itself there are five, six different levels, each one with large, huge pieces of equipment and a lot of complicated spouts and electrical wiring and gizmos that they've never seen before. Most people would be amazed at what you would find in an elevator.

EE: Sort of overwhelmed, really, by what is inside it.

DS: Mmhmm.

EE: Yes. Because it's so easy just to look at the great façade, the silos, and so on and so forth, and not think much more about it. And then to learn about the various stages of movement—the grain cars coming in and the spouts down to the ships on the other side—but everything that happens in between those too. Yeah. What are you most proud of in the work that you've done over the years? In addition to the high quality of it, of course.

DS: Well, I guess I'm proud of the small innovations that I made along the way. I can't point to any one thing and say, "There's a marvellous piece of equipment that I invented," but I could go to little things here and there and little improvements that I've made to what was previously common in the elevator. I guess it's putting things--. We use the term "putting a little icing on the cake" on some existing, common designs that projects use commonly, but things that I think that I've done a little better than the previous one.

[1:10:00]

EE: Right. You mentioned the readiness of the grain companies themselves to share information and sort of to cooperate in improving the efficiency of the industry. When you made one of these improvements—innovations, perhaps, it might well be—would the word spread?

DS: Oh, the word would spread, and sometimes that would result in a bit of extra work. Like on the work that I did on the waterfront, I didn't start working for all of them at the same time. I don't maybe remember which one I started with, probably Saskatchewan Wheat Pool, and then you do something for them that they would take note of, and pretty soon you would maybe get a call from one of the other companies saying, "We heard you did a good job on this job. How would you like to do another one? We have a similar situation." So.

EE: This would suggest, I suppose, that the superintendents or whatever the titles were of the people in the various companies were interacting as well, talking about--.

DS: Well, they have their own little association. I mentioned the GEAPS group, which includes engineers, suppliers, and grain elevators, but the superintendents themselves have their own group that they meet monthly. They used to. I believe they still do. They toss around things like this, and it's like a tea party where they talk about what's going on in their house and what's new and that sort of thing.

EE: One of Adam Smith's lines in *The Wealth of Nations* is that people in the same business, the people in the same trade, never get together even for social gathering, but it results in a conspiracy against the public interest. Now in this case, one could flip that over and say these were gatherings that, in fact, served the public interest by making the grain trade more efficient.

DS: Thinking back over the years, I know there's some pretty good friendships had up between the superintendent of one elevator and the superintendent of the other. They all seemed to get along very well.

EE: Would you have any comments on the various companies and the way in which they operated in your dealings with them?

DS: Well, they're all a little bit different. I liked working for Richardson. They were very easy to get along with. There was no red tape. They'd phone you up and tell you to do something, and there would never, ever be any question of how much. They just wanted to know how soon you could do it and, "Keep us posted how it's going." Other companies—I probably won't mention the name—but they would be more centred around their head office out west somewhere. There would be a fair bit of involvement that you would have to keep them happy as well. Whereas when we worked with Richardson-- The same thing applied for Cargill. We worked with them on a verbal basis. They'd say, "Do it," and we'd do it. Whereas a few of the others, you had to write proposals and draft your own terms of reference, back and forth to get the terms of reference approved, and then iron out a financial policy. Where those other two companies I mentioned, we didn't worry about that.

EE: No. There's a great difference, I'm sure, between a closely held company—I think that's the right phrase for the Richardson and Cargill operations—in which probably one man ultimately makes the decision.

DS: That's right.

EE: And his subordinates deal with him, and you get the word, and so on and so forth. As against a company—Manitoba Pool or Saskatchewan Wheat Pool or Alberta—where a board of directors probably including farmers, or maybe largely farmers back in those days is making decisions.

DS: Well, some of the boards of directors were farmers, and maybe they still are.

EE: And they had to be convinced that this expenditure would be a wise one because it was coming out of their pockets in a sense, I guess.

DS: I haven't kept up the names. Viterra is the name now. Somebody says, "What's Saskatchewan Wheat Pool called now?" "Oh, gee. I don't know. I think it started with a V." [Laughing]

EE: Yes, it does indeed. Yeah, we came by the Viterra headquarters in Regina in, I guess, it was the summer of '08, and I think the change had just taken place. And in fact, the office staff were on strike against the management. I don't know if that was the first strike or not, but things are very different at Viterra now, I suspect, from what they were back in the days. A lot happened from the mid-'90s, I guess, in Sask Pool. They worked towards being listed on the Toronto Stock Exchange, for one thing, which was an enormous change.

[1:15:14]

DS: Yeah. And then they had some bad years there. I think they had some bad investments in Poland or Europe. That set them back a ways. I think they're on a good--. They seem to be doing well now. They just bought a firm in Australia.

EE: So I saw. Yes. Well, let me see here. There's no question that the work you did contributed to Canada's success as an international grain trader. [Laughs] You hardly even need to say, "Yes." Although, it does say, "In what ways?" Well.

DS: In what way? I think I've made things run smoother in Thunder Bay.

EE: Yeah. And perhaps a bit more cheaply.

DS: I liked to work in the grain elevators. I got to know most of the major facilities fairly well, so I could go into them and find my way around. If somebody wanted to start a new project, they didn't have to give me a complete course on finding my way around.

EE: No. Or how the elevator worked.

DS: Yeah.

EE: Were some of the innovations that you were alluding to ones that you proposed to the company from having walked around the elevator and spotted things? How did the improvements develop? Your bright idea, or--?

DS: Well, when we first started off Resource Engineering, we were without a contract for a number of months.

EE: Right. That focuses the mind! [Laughs]

DS: So in that regard, we would go into an elevator and look around. For a shipping system for example, you would find out that the shipping was very, very slow in the way that they handled the grain and get it into the shipping bins and then get it out to the boat. Look for bottlenecks and then write up a bit of a proposal to say, "Hey. We think we can speed up this particular part of your operation, and this is what we're proposing to do, and this is what we think it might cost in the terms of engineering," that sort of thing.

EE: Would you have comments on the skill with which some of the elevators were originally designed and built? Were there elevators that were better designed for the task of moving grain through, with cleaning, grading, and all the things that need to be done? Were some of them better designed than others?

DS: Oh, definitely. Quite a few of them followed a similar pattern. Like Richardson, Cargill, Sask Pool, those elevators have a lot of similarities. Pool 8's got to be the worst thing I ever saw. It makes no sense whatsoever.

EE: That's the one at--.

DS: Over on Syndicate.

EE: Oh, yes. Down south of the CPR [Canadian Pacific Railway] Station.

OM: Ogilvie?

DS: Yeah. It originally started as a feed mill, and it just kind of grew. It didn't look like any other elevator. It's a mess. [Laughing]

EE: It must have been quite inefficient then, costly to operate.

DS: Yeah.

EE: When did they abandon it? Or they had--.

DS: I never could figure it out. I've been there many, many times and could never figure out the grain stream, how things were supposed to happen. Whereas the other elevators, once you basically knew the basic flow diagram, you knew exactly where you were in the elevator. Pool 8 was a mess.

EE: Did you want to ask something about 8?

OM: No. My dad was a grain inspector. He spent a lot of time at 8 back when it was known as Ogilvie's back then.

DS: Yeah, yeah.

EE: Oh, wow. So it started as--.

OM: It's the first one to fall into the river too, I think. It started--.

DS: Hm?

OM: It had an auspicious beginning. It fell into the river one time.

DS: Oh, yeah. I don't think it fell into the river. It tipped over.

OM: It tipped over.

DS: And as far as I know, the good engineers at the time, whether that was Barnett-McQueen or V. B. Cook—it wouldn't have been V. B. Cook or C. D. Howe, it might have been somebody else—I think they were able to right it.

EE: How would you do that? The tilting, the tipping, would be a result of, what, failure of piles underneath?

DS: Piles, yeah. I'm not sure they did right it. I could be wrong on that. But I mention that I did some work in the mining industry at V. B. Cook, and we designed a headframe concrete structure that was several hundred feet high. They built it first before they started to sink the shaft, and then they sunk the shaft down through it. They had some kind of a cave in, and it started to tip. It tipped over two or three feet at the top, which was a big problem because the hoist is at the top and the ropes that handle the skips and the cages have to hang vertical. So being two or three feet out of line, it was inoperable.

[1:20:27]

So there was a firm that came in and said that they would fix it. And they managed to sink a lot of holes in the ground around the side that was low and grout them with concrete—cement—and in effect, they formed a ring. And once that ring was finished, then they poked a few points down in the middle and started pumping mud in there under high pressure. They were able to bring it back within reason—not exactly—but they brought it back close enough that they could put that mine into operation.

EE: Yeah. So they used a hydraulic process in a sense.

DS: Hydraulic, yeah.

EE: And mud to push it back up.

DS: I'm not exactly sure what happened to Pool 8, whether they--. One side of me thinks that they were able to right it, but I'm not sure if that's right or not.

EE: It would be a challenge. So it began as an Ogilvie Elevator, or actually would it have been a flourmill?

DS: It was feed mill originally. I'm not sure if it was Ogilvie at that point or not.

OM: I don't know. I didn't go back that far.

EE: Yeah. Well, when it bears the name, one suspects--. Because Ogilvie's were in operation 110 years ago and even earlier, I think, and so they could well have had a pioneer flour mill here, which, as the years passed, bigger mills were built elsewhere. It would have been turned over to feed. That would be my guess. I have a section--. One of my chapters has flour mills in it as well, my doctoral thesis, but I didn't have all the engineering detail that I would have liked.

DS: There's a starch plant there in the same vicinity as Pool 8, and I'm not sure where the ownership--. The two structures kind of ran into each other.

EE: Sure. Yeah. Well, we'll have to spend some time at Land Titles as well as other places, or the Tax Office. City taxes are a good place to sort things out too for that matter. Well, let me see. You mentioned some of the changes, the latter years in particular, and

your work was involved with improvement, changes, and so on. Would there be anything else you'd like to say about changes that took place in the trade and your work within it?

DS: Well, the shipping system. The shipping gallery and the shipping spouts at Cargill, worked on that, redesigned that. I guess a shipping spout is a shipping spout, but the ones that were originally built, the original design, were very limited in how much they could reach. They rotate from the spout way up top, and they rotate to fill the hold on a ship. So the one at Cargill, we redesigned it. We used the same shipping gallery, but we redesigned the spouts themselves so that they were more efficient. One of the problems with the spouts at Cargill, they were initially kind of square spouts, and all the grain had to run on the bottom of the spout. So, you know the wear problem.

EE: Could you spin them?

DS: No, you couldn't spin them, that was the big problem. [EE laughs] So when we redesigned it, we redesigned them as circular spouts. So that was one aspect.

EE: And so, they could be turned as well?

DS: So that they could rotate them a third or a turn or--. I think they use a third of a turn. So a spout will last for three major refits maybe two or three years apart, then they have to put new spouting in completely.

EE: So you might get almost, what, eight to ten years out of--. Or six to eight out of this?

DS: I could be wrong on that, but I think they could probably get 10 years out of--.

EE: Out of one of those spouts before it was worn away.

DS: Maybe eight or ten, yeah, depending on how much. Yeah.

EE: So the wearing away means that microscopic bits of iron are travelling with the grain, I suppose, does it?

DS: Well, it might be a little bit of organic dust, but I think basically, the kernel of grain itself and--.

EE: Well, it's wearing, but if it wears it down—you were describing the result on the surface of the steel plate where this happens—that does mean that microscopic bits of the iron have been worn away, carried away with the grain.

DS: Well, exactly. Yeah. Yeah.

EE: Enriched flour. [Laughs]

DS: So I've had people kind of tell me—and I never really believed them—but I've had people swear up and down that when they're shipping at night on a particular spout that happens to be a good stream of grain right from the shipping bin straight away into the bin, they swear that the end of the spout gets red hot. And I never really believe that, but I'm sure it gets warm. I just can't believe it gets red hot.

[1:25:25]

EE: Well, if it would be red hot, the grain surely would be igniting.

DS: Well, you'd think so! [Laughs]

EE: Or it would be being roasted or something.

DS: But say you're dropping that grain from 80 feet up in the air, and if you've got a spout that's in the hold fairly close to the dock, it's pretty well not vertical but fairly close to vertical drop. So that grain must be going 100 miles an hour or so, and just the straight velocity and friction between the grain and the spout causes wear.

EE: Yes. Yes, of course.

DS: And then there's a certain amount of organic dust or fill or remnants of the grain fill—probably shouldn't be a lot because most of it is picked up in the cleaning and aspiration of the dust control.

EE: The intention is to remove all of it. That's the principle, isn't it?

DS: Yeah.

EE: It's an argument for winter movement of grain, I suppose. It will be--.

OM: Would there be an issue on static electricity in that at all or--?

DS: Well, explosions are a big item in the elevator, and static electricity is one of them. Like all the belts that they use, a normal belt travelling in a circular fashion could develop static electricity, but most of the belts have a little wire or grounding system that's supposed to dissipate that. All the electrical systems have to be explosion proof. Even when--. Nowadays, they use an electronic device to sound the level of grain in a bin—in most cases they do—but in the old days, they used to use a rope and a sounding weight. So that weight was always made out of bronze or brass because you didn't want it striking against the concrete. If it were made out of cast iron, it could create a spark. So there were a number of things that were made in the elevator out of bronze and brass that were explosion--. Because there have been a number of explosions here in Thunder Bay, you're aware of.

EE: Yes, there have indeed been. Yeah, the big one that took place in August of 1945 is the one that I think of most of all. Wasn't as big as Hiroshima, but boy, it was certainly remembered as a big, big explosion. What other challenges beside change that took place did you find in your work?

DS: Well, being a multifaceted firm, we were trying to keep the grain people happy and the sawmill happy and the board plants or the pulp and paper plants. I guess that was a bit of a challenge. Trying to juggle them all at the same time. You hoped that you'd never get a job from all three or four of them at the same time.

EE: Scheduling.

DS: In engineering, in not only our firm but all of them everywhere, I think it's a big challenge of how much staff you should have. You go from feast to famine. Sometimes you have no work at all, and then other times you can't handle it. The trouble is, when you've got so much work, you don't go out looking for any new work, and then you just wake up one morning and say, "Gee, I don't think I'm going to have anything to do next month." That's one of the big challenges.

EE: How large in personnel would these--. Let's say C. D. Howe, V. B. Cook, maybe those two firms. How large would they actually be in terms of personnel?

DS: Well, when I worked at C. D. Howe, I'm not sure how many. We might have been 50, 60 people there then.

EE: 50 or 60. Now, not all engineers, of course?

DS: No. No, I'd say a tenth of them or maybe 20 percent of them were engineers.

EE: So you might have ten engineers?

DS: Pardon me?

EE: Ten engineers perhaps, and--.

DS: Yeah, maybe eight or ten.

EE: And then the rest would be support staff of various sorts.

DS: Mainly drafting people and secretarial.

EE: Draftsmen and so on and so forth.

DS: And then at V. B. Cook, they were quite large at one point before I left. They got to be 100, and then they dropped down quite a bit. There are over 100 right now at Genivar. But I'm not aware of them doing any work in the grain trade right now. They're heavy into bridges and mining. And that's one thing I've been doing a lot since I retired is bridge inspection.

[1:30:21]

EE: And that was encouraged by Montreal and Minneapolis collapses, I suppose, was it this bridge--. Or was it simply the routine work of the Ministry of Transportation, I suppose?

DS: Well, the Ministry of Transportation used to do all of their bridge inspection themselves.

EE: And then in the late '90s the Harris Government farmed it out, I suppose.

DS: I guess that's when it was, about eight or ten years ago. That would have been Harris, I guess.

EE: Yes, I think so.

DS: So at that time, the MTO would have three, four, five, six inspectors on any one bridge site, and they changed the rules. They said, “As of today or whatever date, we’re not going to do this anymore. The onus is going to be on the contractor themselves to hire an independent engineer known as a QVE, Quality Verification Engineer, that has to pass/approve milestone events along the course of the bridge construction.” And they would identify the milestone events.

EE: The ministry did?

DS: Yeah.

EE: You had a check at each of those points?

DS: Yeah. So I got involved in that about the time I retired, and I’ve been doing a lot of that. Even last year I was working on--. Even with my cane—I’m kind of crippled you know—working on McKenzie River. That’s a twin bridge out there at McKenzie River—big, big steel structure. Quite impressive. So I spent a couple months out there before Christmas. I wasn’t able to do it all by myself. I have another engineer, a good friend of mine, who is a resident in Fort Frances, so the two of us took it on together. He’d come—he was more mobile than I was—so he’d come down one week, and I’d go down there the next week. My week, I’d pretty well sit on the abutment and watch what was going on because I didn’t dare walk on the steel.

EE: No. No, I daresay.

DS: So over the last eight or ten years, I’ve been involved in almost every bridge in Northwestern Ontario—Sioux Narrows and Longlac and Hurst and the Highway extension here, the Harbour Expressway extension, and Steel River. I was working on Steel River down the other side of Fort Frances last summer.

EE: It must remind you of the old Bailey bridge as well.

DS: Pardon me?

EE: Remind you of the old Bailey bridge in terms of--. [Laughs] You would have had instruction it--.

DS: Yeah, yeah. That was one of the things we built at Petawawa as an ongoing annual exercise to build a Bailey bridge to keep in touch. The one in Sioux Narrows that I worked on three or four years ago, it had a large Bailey bridge as a temporary bypass.

EE: Oh, yes. Right. The seeking of work, would one of you in the firm have that as the chief task? You may have had that challenge.

DS: Pardon?

EE: Looking for work for the firm, back to V. B. Cook or in your own firm, of course, you would have to be doing that. Did one of the engineers at V. B. Cook, did Jim himself do much of that work?

DS: Oh, yeah. Like they had a number of different divisions at V. B. Cook—mining and pulp and paper and then the grain—and there was general industrial covering more, not residential, but commercial work. So each one of those department heads was responsible for promotion, and Jim Cook was over there at that time too. He was quite involved. He had a lot of contacts. Quite often, you'd pack up and go along with Jim. Jim had the contact, and once you got to know them then it was yours to pursue.

EE: Yes. Keep finding the work. Speaking of work that might be done or materials obtained, whatever, did Port Ship ever play into any of your work?

DS: Well, I did a lot of work for Port Ship quite a number of years. That's before they demolished a good number of their buildings.

[1:35:03]

EE: Yeah. When they had the big shops and so on.

DS: I did a lot of inspection and approval work. Like the Ministry of Labour would go in there and say, "This hook you got for the 10-tonne crane has been there 40 years. Has anybody ever looked at it?" So I'd have to go and look at it, but in most cases, I'd get them to ship it away and have it x-rayed or something and somebody to do a physical test on it. I would look at it and do whatever I thought was necessary. In the end, I would give them a certificate that would make the Ministry happy.

EE: Yes. That was the key thing.

DS: And I did that for their drydock gate. You know that big gate that they would tow in and out of there?

EE: Right.

DS: So I inspected that a number of times. And then the last thing that I ever did there was the new crane runway. They brought a crane up from Collingwood and replaced the old one that they had.

EE: This was when Collingwood was being taken down, I suppose.

DS: Hm?

EE: They probably transferred equipment up from Collingwood when the shipyard there was being closed.

DS: And they needed a new runway designed, piling, and rails, and support systems for the crane to run on.

EE: Sure. Ok.

DS: They had some interesting equipment down there. I think most of it's gone now.

EE: I think so. Yeah. Port Ship used to be quite a facility, the design shop. The woodworking shop was really quite lovely. They did all kinds of work.

DS: They built corvettes there.

EE: Well, yes. And then when you actually think of the ships, that was pretty well done by the time I saw the place. The corvettes that were built there. You're right, back in the war days when C. D. Howe was Minister of Munitions and Supply. Some of the work should come back to Port Arthur, shouldn't it? Do you want to say anything about major challenges the grain industry faced over these years? Sort of in your--.

DS: Well, Thunder Bay in particular has been a bit of a challenge with consolidation of the elevators. All the famous names are all gone. United Grain Growers is gone. Saskatchewan Wheat Pool is gone. Richardson and Cargill have maintained themselves.

EE: Well, Cargill came in late. Richardson has been here for quite a long time. That would be the one private name left from the Canadian trade, wouldn't it?

DS: I don't remember what Cargill was called before it was Cargill.

EE: It's an American company. It may always have had that name perhaps. Although, I don't know what Cargill actually is derived from.

DS: I mean the terminal at Cargill. I'm not sure what--.

EE: Oh. It was Grand Trunk Pacific Railway's.

DS: Oh. Okay. I was never there under that name. I don't know when they transferred.

EE: Well, Grand Trunk Pacific became part of the Canadian National Railway [CNR] system about 1920 give or take, and so I suppose it must have become a--. Did it become a CNR elevator then, or did they hand it over to someone else? They may have sold it at the time.

OM: Where did Searle fit into that? It must have been close by.

DS: Hm? Searle?

OM: Searle?

DS: I think Pool 15 next to Cargill, I think that was Searle.

OM: Okay.

EE: Got the map in the backseat, the extra one. [Laughing]

OM: We have to bring it in sometime.

EE: Unroll it, carry it in like a scroll. I should put ends on it so we can unroll it. Use whatever section. This is a mid-'30s, I think, map of the waterfront.

DS: Oh, okay.

EE: Which we got our hands on, and I had several copies made. They made an extra one because I asked them to laminate one of the copies, and so they ended up making three and laminating another one. So Owen's been a beneficiary of that particular little project, if you will. You were saying that Thunder Bay itself--.

DS: Well, that's been the main challenge is with the grain shipments way down a third or so what they used to be. That affects the railroads. The railroads are down. And now a lot of the grain that would normally stop in Thunder Bay for cleaning and upgrading, it bypasses Thunder Bay by rail to St. Lawrence ports.

EE: Did you have involvement with any of those throughput elevators, the sort of inland terminals that the private companies built? Did you work on any of those or ever visit on?

DS: No, never did. I never got involved in the newer ones that--. I drove out west just in November, and I was amazed at just how many there were. Because I remember back in the '70s, there was a big fuss over this big one they built, I think it was Rosetown. It was the first one. Everybody talked about it. But now you drive out west, I think there's one every ten miles or so.

[1:40:05]

EE: So there's one at Rosetown, you think that was the first one?

DS: Well, Rosetown or--.

EE: Because Cargill built one at Elm Creek, which is where I went to high school in Manitoba.

DS: Oh, Elm Creek was much later, I think.

EE: Elm Creek's later then?

DS: Yeah.

EE: Because I thought of it as maybe the first in Manitoba. Yeah, there was controversy around all of those constructions originally, but now you take the 50 miles out of Winnipeg along Number 2 Highway to Elm Creek, there are several of them along

at Starbuck and Fannystelle. Each of these towns has been selected—or hamlets, certainly, in some cases—selected to be the location.

DS: There are not too many of those wooden elevators left. Of the few that are left, it looks like they moved them into a farmer's yard, and the farmer uses them for his--.

EE: Some of them have been moved to farmers' yards without doubt. Lots of others have been just taken down, or I don't know whether some of them had been burned down and so on. Now one of the odd experiences I had years ago, Plum Coulee has one of those old elevators which Miss Lambert from the Bronfman family in Montreal, they had connections with that area in southern Manitoba. So she acquired this elevator to have it developed as part of a community centre. And so there it sits next to the railway track and, of course, the main street along the railway track and the shops and so on and so forth. And in '97, we were in Texas visiting our friends in the Dallas area, and we visited Crawford, which is next to--.

DS: Oh, yeah. With George.

OM: George's ranch. Ex-ranch.

EE: Next to George W. Bush's ranch out there. And the darndest thing was it reminded me of Plum Coulee, which is a very strange thing to say about a place in Texas. But there was a grain handling facility in this small town. Not an elevator, but a different kind of facility. There was a street with all the curio shops, all the souvenirs you could buy—a life-sized porch cutout of W. so you could stand next to him and be photographed or whatever—and all of this. On the other side of the grain handling facility there was a small building which turned out to be a Peace Centre of all things. Crawford is a Democratic territory. They voted Democratic there as against the Republicans all around. But it was the uncanniest thing to be in Crawford and say, "Darn. This makes me think of Plum Coulee, Manitoba." Only you had to have both experiences. Anyway, we're down to significant events if you wanted to add any, Don. You've said a lot of interesting things. What are your most vivid memories about the work that you've done?

DS: Most vivid projects or just things in general?

EE: Well, why not.

DS: I guess the most interesting one was at Elevator M, the upgrading of M, because we had to actually put it out of service and strip out a lot of things. It was a major, major project at Elevator M to put the automatic distributors in and a lot of computer

automation. We had a big control room and a brand-new building. It was quite a large project. That was probably the biggest project that I've worked on.

EE: Did you actually change the way in which grain moved through it or was it--?

DS: Well, the flow diagram was pretty much the same. It's identical, we just tried to speed up--.

EE: It's not possible to change it really, I guess, given the structures.

DS: No. Yeah.

EE: But you could speed the way in which--.

DS: Mmhmm.

EE: Grain moved through it. Okay. Well, I'll keep that in mind. That's right here in the waterfront. Any other--.

DS: I was just wondering how many interviews you've had and some of the names that you might have contacted. I guess you've talked to Syd Halter, have you?

EE: I think we've attempted.

OM: Nancy tried to.

EE: And Syd's getting on a bit.

DS: There's Stan McKay. I guess he died a few years ago, but Murdoch McKay had been with United Grain Growers. That's his son. He was one of the head people in Winnipeg, Murdoch McKay., but he's no longer--. Well, that was United Grain Growers, but I don't know with the reorganization. I'm not sure where he went.

EE: Right. Well, retirement--. We're looking for retired people, actually. And the name has been mentioned, Murdoch McKay.

DS: Did you ever run across somebody called Bill Peach? I guess he's long dead. He was a well-known person at C. D. Howe Company. He was their chief field man, so he spent all his time in the field supervising projects. I'm sure he would have been a good one to talk to, but he's been dead for a good number of years.

[1:45:16]

EE: Well, that's the challenge, to catch people while they're still with us.

DS: So the Mallon--.

EE: We've interviewed two of the three Mallons.

DS: Okay. Mallon Sr.?

EE: Yes. And one of the sons. I don't know whether to pursue the other or not. He was a bit reluctant at the time, so it's a question of whether to do that or not.

DS: No, I can't think of somebody else that you might be able to contact.

EE: Well, if they come to mind, you can always give us a call. We'd be happy to hear about additional because we like to--.

DS: Gerry Franklin. You know him anyway, don't you? I think he's retired from Cargill now.

EE: I don't know him. Or have I met him?

DS: I think he might have been part of the group there, the Friends of Elevators.

EE: Okay.

DS: At some of the meetings I went to a couple years ago, he was involved then, and I think his name came up at that last meeting.

EE: Right.

DS: So he--. And Nancy said he's retired now. That would have been fairly recently. But he had a big job because he was the terminal manger here, but he was also looking after the terminal in Vancouver. So he was out to Vancouver every two or three weeks, and this went on for years.

EE: Well, we'll approach him and see whether he would be open to an interview. Let me see. I don't suppose I need to ask whether you think it's important to preserve Thunder Bay's grain trade history.

DS: Oh, no. I'm sure that's a given, and it is. I'm not sure how our project's going to evolve. I'm worried that money is going to be our downfall, getting enough money to put it into something to make it worthwhile.

EE: Yes. Developing the strategy and finding the resources to achieve it. I'm never going to forgive the City administration for taking down Pool 6 because it seems to me that centrally located would have been a great location in which to do things. And we've talked to someone who was in purchasing for Sask Pool for some time who said that he had encouraged the company to think about doing something of grain trade centre nature with the location. But it didn't happen. Are there any questions that we might have asked that haven't come to mind? We've covered all the things that you made notes on earlier today?

DS: Well, not really a question, but I think one item here that I didn't--. One of the things that I was involved with both at Resource Engineering and then later on my own was baseline surveys. Over the years, some of the elevators have moved towards the slip and then some of them have actually fallen into the slip. So there was, many years ago—probably 20 years ago—they initiated baseline surveys. Every year there would be a survey taken of key points along their dock to see if they've moved relative from one year to another.

EE: Whether the whole elevator had moved, was shifting?

DS: Yeah. Parts of it.

EE: Or parts of it.

DS: So, I've done that for many years at Cargill and at Richardson and, I guess, that's the only two. But Richardson did have a problem there about 10, 15 years ago. So the baseline, we had reference marks all along their bollards, so every year you'd survey them and then plot them on a graph, and then you'd do it the next year and see relative movement. So we were doing that one year, and all of a sudden, we noticed that the portion of the dock that approach shore from the last annex had moved out about six inches. First of all, we thought we made a mistake, so we went and surveyed it again. And sure enough, it was moving. In that particular

instant we had to go in there and add additional tiebacks and anchorages to hold the dock and then continue on every year with baseline surveys to see that any movement had been arrested and that problem had been solved.

[1:50:03]

EE: Yeah. Were you tying your survey into a point on the mainland, if you will, beyond the elevators or was it--?

DS: Yeah. In both cases, we erected a monument out on breakwater.

EE: Oh, out--.

DS: Out on the breakwater there was a half-mile away, and then another one inland wherever it was convenient on solid ground that we knew that wasn't moving. You'd set up an instrument on one and sight out to the breakwater. And you had to select a good day because with the heat of the sun, it would make things wobbly.

EE: The shimmer of the air.

DS: So you had to do it early in the morning when the air was fairly cool and the wind was light. But that was kind of interesting. So I did that at Cargill and at Richardson.

EE: Because a GPS wouldn't be adequate would it. There's a little bit of--. Six inches wouldn't be caught by a GPS device, I don't suppose.

DS: So after I decided I didn't want to do it anymore, I got a hold of a surveyor, and I asked him to do it. He was going to use his GPS, and I didn't really think it was a good idea. He tried, but eventually he went back to a straight visual instrument.

EE: Yes. The term baselines really takes me back. I won't say anything at length about that, but I was doing research on land use in the districts of Fort Frances and Kenora, and of course, the surveying of the land that was done initially by Ontario Land Surveyors involved, of course, this running of baseline and so on and so forth. And this is a matter of cutting your way through the forest a line and surveying a section chain by chain and so forth. The reports that these men wrote about that are just gems of economy in the way of the spareness of the text, the description. When you suddenly begin to realize the crew that he's got because I'm doing this and so on, and he's got a whole crew helping him. When you realize that they're marking, for example, with gas pipe from

Toronto which had been brought up to be driven into the ground to mark these posts. So that's when you said baseline, I thought maybe you were involved resurveying Northwestern Ontario.

DS: No, no. Just to--.

EE: This is very important.

DS: Baseline along the dock. Make sure that all the docks are on sheet piling and piling of one sort or another with steel rods anchoring it back into the back of the structure.

EE: Yeah.

DS: That's the last thing you want is it to start moving on you.

EE: Yeah. A six-inch shift is significant when that's happened in a short period of time. Okay. Owen, did you have any questions? You've already had a couple shots at it and done a good job.

OM: It's been a very interesting interview.

EE: It has indeed. Yes, indeed.

OM: Covered a lot of ground.

DS: I didn't think I'd be able to keep you going for two hours. [Laughing]

EE: Well, it isn't quite that yet, I guess, but--. Or is it?

OM: It's two hours.

EE: It is? It is two hours, actually. You're absolutely right. We have a question here about memorabilia. As you know, we're not really equipped to take it, but I was thinking of the--. Have you hung onto the programs for those GEAPS conventions? Probably have a file of them somewhere.

DS: Oh, I've got a few of them laying around somewhere.

EE: Yeah. It would be worth--.

DS: They'd have their proceedings and--. The convention was two aspects. One was the exhibits, and then they had technical seminars that went for two or three days with people both from the grain handlers saying what they've done to improve their facility and suppliers advertising what they could do and what wonderful toys they had.

EE: Sure. Well, don't throw those out, you know, if they begin to clutter at any point. Put them in a box and let us know, I think, because that would be--. And any other related material. Of course, the papers of your firm have gone, I guess, to the new owners, have they?

DS: Yeah, I don't have much. There were a lot of drawings around that would have been a big item for historic value, but I don't know where they all went.

EE: Well, the--.

DS: I thought there were some down at UGG M, down there. I was down there a few years ago, and I think there were some left. I had several big blueprint files, the old blueprints. I don't know what happened to them. They're gone. But they were old, old, old. They were falling apart. They were probably 50 years old.

EE: Jim had a little difficulty remembering the facility he was very proud of when he interviewed him, Jim Cook. So he went and checked at the office, and it was the Alberta Pool one in Vancouver. So he brought the blueprint out, and so I went by the house and took a look at this plan that he had to pin down the fact that this was the structure he was so proud of. We're going to be on the West Coast this coming summer, I expect, so the waterfront's going to be visited. I'm going to have my camera handy and get a shot of Alberta Pool and the terminal there. Well, I think the last question is other persons, and you've mentioned a couple. I don't know if any others come to mind. Thank you very, very much, Don. As you were saying, you'd wondered whether you could fill two hours. I didn't know. And you were a bit diffident about the amount of work in the grain trade that you'd actually done over the years. It turns out you've done quite a bit.

[1:55:54]

DS: Well, quite a bit, yeah. I've been a long time at it too. [Laughing]

EE: Yeah, that's right. Over the 45 or so years. And let me write down, it is Lamda isn't it? Is it Pritam?

DS: Pritam.

EE: Yeah. We need to get in touch with him.

DS: Yeah, he started at C. D. Howe a couple months after I did.

EE: Yeah. So we have two of the surviving--. I think, thanks again very much, Don.

End of interview.