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Company Affiliations: Canadian Grain Commission—Grain Research Laboratory

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Summary: Retired machinist for the Canadian Grain Commission’s Grain Research Lab Harold Hughes describes his long career in the Canadian grain industry. He describes his schooling in the machinist trade and his first job with the CGC’s Grain Research Lab repairing and manufacturing equipment. He lists the major projects he worked on, like manufacturing GRL-specific constant temperature water baths and lab-sized dough mixers and upgrading equipment to improve efficiency and accuracy. He describes the layout of the machine shop, the kinds of equipment inside, and the eventual expansion of the shop and hiring of an assistant. Hughes then discusses his brief period with the CGC’s weighing division as their elevator scales calibrator travelling across the country. He explains the process of calibrating manual scales, and he recounts the change to electronic scales. Other topics discussed include safety protocols in the machine shop, the eventual closure of the GRL machine shop due to budgetary constraints, his creation of personalized gifts for retiring colleagues, and his continuing machine work for the Navy Museum.

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Time, Speaker, Narrative
HH: How long will this take?
MC: Probably about an hour, I think. Or an hour and a half. So we’re talking today with Mr. Harold Hughes in his home here in Transcona in Winnipeg. My name is Marion Cambell and I have the pleasure to talk to you today about your career. We’ve already talked a bit before we started the tape but perhaps you could first tell me how you got involved in the grain industry, if there was some event or something that particularly interested you? How did you get involved in the grain industry?

HH: I was working at the CNR at the time and was working in my trade, and there was an advertisement that came into the paper, and it asked for somebody interested in doing laboratory work in the machine shop. I applied for the job, and I won the job.

MC: Where was that job?

HH: In Winnipeg in the Grain Research Laboratory in the old Grain Exchange building, on the eighth floor. The man in charge was Dr. Anderson. He was a very straightforward boss. I enjoyed working for him. This was 1952 that I started in April, and I worked until September of 1998.

MC: That is a long career.

HH: Yeah. They stopped the shop. In the meantime, I had worked for the—midway between my employment with the Grain Research Laboratory—I worked for the Canadian Grain Commission in the weighing division.

MC: Which times were you working in the weighing division?

HH: That was 1967.

MC: In 1967?

HH: The beginning of 1967 to the end of 1970.

MC: Okay, 1970. So the rest of the time you were with the Grain Research Lab?

HH: Grain Research Lab, yes.

MC: Before that and after it, you were at the Grain Research Lab.

HH: Yes.

MC: Well, there's probably lots of information about what you were doing in both of those settings, and so we'll get to that. But I'm wondering when you applied to that ad that you saw, was it the equipment issue that was of interest to you, or was it perhaps grain research? I think it's the equipment, I sense, that drew you.

HH: It was probably the machine shop that interested me the most because I had learned a good trade, and I wasn't using it. So I thought that this is my opportunity to get involved in my trade again.

MC: So where did you get your training in the trade, as you describe it? What were you doing prior to applying for that job?

HH: First of all, right after high school I worked for the Bushman Manufacturing Company, which was a factory that did all kinds of small machine shop jobs. It ended up that we were doing some war work as well for the Air Force. I applied to join the Navy—or tried to get into the Navy in the middle of the summer in 1942—and they were only taking cooks and stewards. I decided that wasn't my cup of tea, so I decided to pass up on that opportunity. In the meantime, the recruiting officer said, "You know," he said, "You guys--." My friend and I applied at the same time. He said, "Why don't you guys wait?" He said, "There's a course coming up looking for machine people." He said that it might be the opportunity you guys are in a real good trade. My friend, he took the steward's job. I says, "Forget it!" I says, "I'm going to wait." And sure enough, just before Christmas there's an ad in the paper. It described what they wanted and there was an exam that you had to pass to get in.

It was very simple for somebody that had finished high school because it was just algebra, so it was quite simple. I was glad I took that course. It lasted about 84 weeks. First of all, we went to high school in Galt, and that's where we learned all the machine shop trade. Then when we graduated from there, we went to Galt to Hamilton, Ontario, to take a ten-week intro combustion course. From there, when we finished that—it was a short course, maybe ten weeks or something like that—then we were shift through Halifax and worked through mechanical training establishment. We learned more about the steam engineering and more machine shop work and how to repair things. It was a very interesting course.

MC: I could see you'd be a handy person to have around the house. [Laughs]

HH: Yes, usually. [Laughs]

MC: So when Mr. Anderson hired you--.

HH: It was Dr. Anderson.

MC: Dr. Anderson, I'm sorry, that's correct. We've got to get these things right. What were your responsibilities when they first hired you?

HH: Manufacturing and repairing equipment for the Grain Research Lab and also for the inspection division and various offices in the building that maybe the Grain Commission had used as financial and all kinds of weighing divisions. I did all kinds of work for all the people that work for the Grain Commission.

MC: Was this a new position?

HH: No. It was actually a new position, and what happened was that they used to hire assistant technicians. That was just a general term. And they had different people that contributed to the work of the laboratory. They designed some better things in the future. So they had left, and this position was open. They decided to have strictly a maintenance and design person to work for the laboratory itself.

MC: Were you the only one doing this?

HH: Yes.

MC: You were the only one.

HH: At that time, I was the only one. In the future, we hired an assistant for me.

MC: So what would be some of the early projects you worked on in terms of you mentioned equipment particularly? Probably the manufacturing is the one that's most interesting because that would be new equipment, correct?

HH: The first thing I made was a constant temperature water bath.

MC: Constant temperature water bath.

HH: It had controls and a pump where you could run various equipment from the controls water bath.

MC: So that didn't exist before? I've actually been a student in a lab and can think of that piece of equipment. So that didn't exist?

HH: Our lab didn't have one.

MC: So was that that it didn't exist, or you had to design something specifically to meet your lab needs?

HH: Exactly. That's what we had to do. We had to build this for the lab. But there was lots of equipment available that constant temperature water baths that's available through the various Fisher or Lab Compo, or something like that.

MC: So what was unique about the one--. What was the particular reason that you had to design something different then from what existed?

HH: I think it was for a constant temperature for dough mixing. They had to have a source of control temperature that ran so that the bowl wouldn't heat up.

MC: Yes. Yes. That makes a whole lot of sense. Did you get a patent on that?

HH: No, we don't worry about that. In the Grain Research Lab, we didn't worry about that.

MC: The constant temperature water bath was the first thing you might have designed. What else did you--?

HH: I worked on a--. It was a design that the Grain Research had developed, and it was a GRL dough mixer.

MC: GRL dough mixer.

HH: Yeah. Grain Research Laboratory dough mixer.

MC: I see.

HH: It was a free pin mixer that ran in a bowl, and it was clamped on the mixer, and the bowls had two spigots. The spigots were for the control water bath. I think I made about ten of those for the laboratory.

MC: Would that be a kitchen-sized bowl or are we talking huge?

HH: No, it was laboratory sized.

MC: Ah yes, okay.

HH: They have mixers that do lots of work, but there's nothing that's capable of doing for laboratory size. The dough that they used to bake, they used to bake small pup loaves, they used to call them. They were about the third of a size of a regular loaf, I guess.

MC: Am I clear then that you had to make this dough mixing bowl because it had to attach to the water bath. Is that correct?

HH: No, the bowl had to attach to a dough mixer.

MC: Oh, okay.

HH: Then it was attached to the water bath.

MC: Oh, I get it.

HH: I think I probably designed the bowl for the constant temperature water bath. The bowl had windows in it. Not just open windows, just open spaces so they could look and see how the dough reacted when it was mixing. That was used all over the world. They used to send drawings. Japan was the first country that hooked onto the GRL dough mixer. They told me it wasn't working. Dr. Anderson said, "Well, the only reason why it isn't working probably is because he got it running backwards." [Laughing]

MC: Did they have to send you to Japan to--? [Laughs]

HH: No. No, I guess they telephoned or whatever.

MC: And you straightened them out.

HH: They straightened it out.

MC: Are there any other pieces of equipment that you would have designed that are memorable?

HH: I didn't design any more that I can remember. We improved on things. One of them, the biggest developments I probably did, was later in my career was the electronic--. What do they call it? Anyway, it's--.

MC: What did it do?

HH: It magnified the electronic--.

MC: Maybe the name will come back when you talk about the equipment piece, what it did. It magnified--.

HH: It magnified but it was temperature controlled and it magnified into, I don't know how many times, but it could only do one sample at a time. I designed a little pedestal that it would sit on so it could do four at a time because every time that they did a new sample, they had to shut the machine down, and this way they could do four instead of one.

MC: Much more efficient.

HH: Yeah. Terribly efficient that way. It was a waste of money to have to wait. They had to have pedestals with gold pedestals. It's called gold sputtering, and I designed one of those holders to do multiple gold sputtering on one shock.

MC: What does gold sputtering mean for someone like myself, who doesn't know that term?

HH: Gold sputtering is a machine that coats whatever you use in gold.

MC: Real gold?

HH: Real gold, yes.

MC: Did you take a few of those home in your pocket?

HH: Nope. [Laughing] Never.

MC: Like at the Mint, they check you on the way out. [Laughs]

HH: Oh yeah. They didn't bother checking. I don't know how they--. I didn't do the sputtering myself. Some other technician who was trained to do that, he would do that.

MC: Was that with the temperature-controlled device you were talking about?

HH: No, no. It was separate, yeah. The whole machine is. It's a huge machine. Took up almost a whole room. In fact, I think when the technician was working in there, it was work in a close confinement. Maybe it was because they didn't want somebody peeking over his shoulder, I don't know. [Laughs] I wasn't worried.

MC: Were there any other kinds of equipment like this where you're talking about some you manufactured that were brand new and others were modifications of existing equipment? Were there other things like that, that you modified?

HH: There was a tremendous amount of equipment that I modified and did improvements on.

MC: Any that stand out that you're most proud of?

HH: Let's see. The improvements were we designed a pint measure. They used to do bushel weight by pint measures. The original pint measures, they had a soft bottom in them so you could adjust the depth or capacity. The capacity had to be very accurate, and the pint measure that they had was a soft bottom, piece of brass tubing. They decided that they had to have something that was more reliable. I designed a pint measure with a thick bottom, and when I calibrated them, they were right on the money. One time that the weights and measures people came in and said, "Who gave you authority to do this?" And I said, "My boss." I said, "Dr. Anderson. If you want to go and see him, he's right next door." So they went in to see him. I guess Dr. Anderson put him straight. [Laughs] He says, "When our technicians design something, and they calibrate it, it's calibrated right to the nth degree." He says, "There's no ifs, ands, and buts."

MC: So tell me more about Dr. Anderson. He sounds like he knows what he wants.

HH: Oh, he knows what he wants, and he was very, very good. He was an excellent man. In fact, I think he became deputy to the agricultural minister.

MC: I see. I'm not sure. There is an autobiography—or a biography—on him that has been written I believe.

HH: I think he wrote it.

MC: Well, right. I'm not sure if it's an autobiography or biography, but I think it is autobiography now when you're saying that, yes. So he was a wonderful man.

HH: Oh yes.

MC: What were his best qualities, do you think?

HH: His best qualities was he was able to tell whether you were going to make a good technician or not. And he knew. You could take in a problem for him, and he would say, "I don't think that's going to work." Maybe you would try it, and you found out that it wasn't going to work. [Laughs] But he was very good. A very good man to work for.

MC: Excellent. Excellent to hear. Work environment must have been very pleasant then?

HH: Oh yes. After the war, they hired a lot of assistant technicians and all the veterans. During the war, they had replaced all the men with the women because the men all went to the services. But after the war, they let the women go, and they hired veterans to look after the laboratory.

MC: Hm. That's very interesting to know that was a situation where women were brought in, but then basically it reverted to mainly a male domain.

HH: Yeah, yeah. Eventually they ended up with a lot of the women were head of the departments.

MC: Is that right? Some of the people that worked--.

HH: All the heads of the departments had doctorate degrees.

MC: And they were women you're saying?

HH: Some of them were women, yeah. But during the war--. I don't remember recalling that any of the women had doctorate degrees.

MC: Are there any names of women that you remember as heads, you were saying?

HH: Not really, no.

MC: Well, we can probably find that out, but we know that there were more men involved in these positions than women. But if we could interview some of the women that would be a very nice thing, too. Do you know these pieces of equipment that you designed or modified, are they still in use? Do you know or have they been replaced?

HH: A lot of them are. Probably the GLR dough mixer is probably still running.

MC: Is that right?

HH: It's been modified to run on--. First of all, we had just bronze bearings on most of the equipment. Some of the stuff was running on ball bearings, but the dough mixer, the mixing apparatus itself, was all friction-type of bearings. When I was away with the weighing division, they decided to operate on ball bearings, which was more efficient. The coefficient of friction does a lot to destroy the efficiency of a machine.

MC: So when did that change in the type of ball bearings, when did that come about?

HH: That happened in the time I was in with the weighing division in '67 to '70.

MC: About that time. Now, tell me about your shop. You said you had a shop. Are we looking at a big building or a room?

HH: It was just a small little room. It was L shaped. On one side we had a milling machine, drill press, and the water purification system. Then we had the lathe and then we had a welding table and then we had a tool bench along this little space. It was maybe 20 by 20, [laughs] and it was L shaped so, you know, you walked into a narrow hall and the milling machine and drill press were here, and the water purification was here, the lathe was there and the welding bench was there, and the workbench was over here.

MC: And that was just you initially there?

HH: Yup.

MC: And then you had an assistant, you said.

HH: After, yeah. I worked that way for ten years. After we had enlarged the shop, and we moved it down to the main floor. So then I had really more space. But we also purchased bigger equipment. Downstairs we had 14-inch lathe and then we had purchased a

vertical milling machine. We had a welding room all by itself. You could always close the door and do your weldings because of the fumes. We had enough space to store sheet metal and all the rods and stuff we probably had to use.

MC: How did your job change when you had an assistant? How did you divide up your work?

HH: We divided it up as evenly as possible. [Laughs] He was also learning. We did all kinds of work. We did plumbing, electrical. You name it and we did it. He would pick up and--. The first man we hired was a watchmaker by trade. But he passed the test, and he was the only one that really passed the test, the interview part. They had a few people that had to interview, and I said, "Well, you've come this far. See what you can do on the lathe." He messed it up somehow. "I guess that's the end of this." I says, "No. You know what you're doing, so that's the main thing. So we'll teach you the proper way to do things."

MC: So what was that test like that a lot of people weren't able to pass? What were they looking for in that interview?

HH: Somebody had more than just machine shop education. The jeweler, of course, he had this little jeweler's lathe and he worked on making it his own threads and stuff like that. Most of the people when it came to thread making, most of the people in the interview, they just couldn't do it. But this [inaudible] chap that was the watchmaker, he was game to try anything.

MC: Interesting background.

HH: Yeah. When I left to go to the weighing division, he became head of the department, but they didn't hire anything back. They didn't hire another assistant for him, so he worked for four years by himself. Then I went back to the Grain Research Lab for the weighing division. The weighing division was taking too much time away from family, so I left.

MC: We'll go on to talk about what you were doing in the weighing division in just a minute. I just wanted to, while you're still talking about the shop, ask you about safety issues because over the years in many occupations, safety has changed a lot.

HH: Got them.

MC: He's showing me both hands with ten fingers. [Laughs] Tell me about safety concerns and how it was dealt with.

HH: Safety concerns, in the Navy they were also concerned about safety. On a warship safety is the main thing that you have to be careful. When you're working around great, huge steam engines and boilers that have temperatures or pressure of about 300 pas per

square inch and the temperature is running at about 6 or 700 degrees Fahrenheit, you have to be very careful around steam. On the engines itself we had to feel the bearings, and if you were right handed, you always felt the engine with your left hand.

MC: Just in case something happened?

HH: Just in case something happened.

MC: [Laughs] Makes sense.

HH: Yup. Makes sense, yes.

MC: Wow. Did you see safety issues change in your time at work?

HH: Of course, yes. Originally, they never had--. They had goggles, but that's about all. They didn't have hearing protection, and that's why I have my hearing aids today. There's always noise in a machine shop.

MC: So goggles for your eyes and hearing, the noise issue. Any other, like steel toed boots, those kinds of things?

HH: You didn't have to wear the steel toed boots, but I imagine that it would have been compulsory sooner or later.

MC: Were safety issues addressed by safety committees in those days or anything like they have now? What other restrictions were put--.

HH: The safety committee was usually one of the heads of departments, which would be a doctor and myself. I was very strict in the machine shop and made sure we did things properly.

MC: What was some of the things that you, especially when you had an assistant, that you insisted on for a safety point of view?

HH: Wearing goggles when you're grinding. That was one of the things, and watching out when you're moving stuff. Be very careful. Everybody has a limit. If you were moving something with someone else, make sure they knew what they were doing.

MC: So those are two biggies.

HH: Yeah. One time we had some equipment that was being delivered. I'd asked the company that was delivering it to make sure that they had a hydraulic tailgate, so they could lower off the truck onto the pavement. I says, "Because we don't have a loading dock. You know the old Great Exchange Building? We didn't have a loading dock." So they said, "Well that's going to be provided." They showed up without a hydraulic tailgate, and I refused to move it.

He said, "Oh, get a bunch of men." I said, "A bunch of men isn't my cup of tea," I says. I said, "When you were asked to come off the truck," I says, "that weight is all on the men. There's no way that those men can handle it." I said, "They're not trained to lift things," and I wouldn't be responsible. So, he went in to see the boss, and the boss says, "If he says to get it here with a hydraulic tailgate, you better get it here with a hydraulic tailgate."

MC: Is that Dr. Anderson?

HH: No, no. At that time, I think Dr. Anderson had left, but he would have agreed with me. And the chap says, "He worked in the stores department in CNR. He knows how to handle heavy equipment, so you better listen to him." So I said, "You better take it back and get the hydraulic tailgate on that truck or get a truck with a hydraulic tailgate."

MC: Did you have any accidents in the shop?

HH: Not that I recall.

MC: Good for you. No fires, explosions?

HH: No. Well, they had occasional fire, but not in the shop. Working with some of the equipment had to use very highly inflammable material, and occasionally you'd have a flare up, but not too serious.

MC: Well, that's a wonderful record.

HH: Yeah.

MC: Now you said that shop eventually stopped.

HH: Yup. In 1998, nobody wanted to accept the cost of running the shop, none of the departments. So, they decided that if nobody wanted to take the cost on their budget, they wouldn't. There was no way of keeping it up, so they decided--. It was a cutback at

that time. I guess it was '97 when they had the recession, so '98 was time they were cutting back on the staff. There was about 20 of us who were let go or retired or whatever.

MC: Were there any other factors do you think that affected the decision to close the shop besides departments not being able to fund it? I'm thinking the kinds of equipment that you were working and maintaining and manufacturing. Were they then outsourced to other companies or was there more appropriate equipment on the market?

HH: We were doing some design work. In fact, in the middle of the cutback, we had a piece of equipment that was being designed in built in our shop.

MC: What one was that?

HH: I don't remember what it was called. It was a high-speed shaker, so they outsourced it. My assistant at that time had to go over and show them what he had wanted. I had already left, so I don't know what happened there.

MC: So that must have been a sad moment to see the shop go?

HH: Yes. They were sorry that the shop--. Because you had to wait to get repairs done. They had to wait. The shop was there and could handle most of the maintenance work. So if you had a breakdown of stuff, it wouldn't take long for us to manufacture or repair whatever it was.

MC: Any other consequences of the closing of the shop besides delays in repair?

HH: I don't know.

MC: You were gone. [Laughs]

HH: Yeah, I was gone. [Laughs] One other time, they had this piece of equipment that the company had sent a man, and he broke something. One of the technicians had said, "Oh, I'll take it down to the shop and see if they can help us out." So, he brought it down to the shop, and he says, "Oh yeah, it wouldn't take that long to manufacture." I think it took me roughly a noon hour or something like that to repair it or manufacture a new part for him. He says, "That's amazing." The technician that came, he says, "That's amazing. You know it would've taken us six weeks to do that back at the shop." I said, "You'd have to make a drawing." And this guy, he says, "I've got to go and meet him." [Laughs] And he says, "He'd do well down in the States." He said,

“Remarkable. That’s just unbelievable you have that kind of equipment that you can manufacture stuff. It’s unbelievable.” He says, “What’s it going to cost me?” And the guy says, “About a dozen chocolate chip cookies.” [Laughs]

MC: So what happened to all the equipment in the shop? Did it get sold?

HH: Most of it got sold, yeah. But some of the stuff like the mill room had storage area and they kept one of the lathes, and they kept the big drill press. All the grinding equipment had to go. They couldn’t keep anything with sparks, so the welding equipment went. They had a big wood saw in the mill room that they had purchased, and they had used it mostly. So that was very good--. We had a wood saw before, but it was just a small little 9-inch table saw and this wood machine was a huge effort, was capable of doing real good work. We managed to use this little table saw for most of our projects.

MC: It must have been hard to see all our friends to go like that. The equipment were your friends.

HH: Yeah. But they kept most of the essentials, they kept.

MC: Of all those pieces in your shop, did you have some that you particularly liked working with?

HH: Oh yes.

MC: Which were your favourites?

HH: Oh, there was a lathe that was--. We purchased it when we moved into the new building, and it was a beautiful machine. [Laughs] It was really great to operate it. We were managing with second rate equipment, [laughs] and then we had this beautiful precision lathe.

MC: Can make anything.

HH: It was a pleasure to work. Then of course we got the vertical mill, which we could’ve used many times over when we were building all the GLR dough mixers that we had to do. I did mill work on the lathe, on our little 9-inch lathe. I would make the gear box. I would put it on the lathe and the four-jaw chuck and machine it on all four sides, and it could’ve been done on the vertical mill half the time. [Laughs]

MC: Isn’t that interesting.

HH: The equipment came too late, really.

MC: Too late?

HH: Yeah.

MC: Meaning?

HH: Meaning that this is what they should've had when I first started working there. They were making do with--. The little wee milling machine we had—what's the name of it?—an Atlas! And it was just a little toy compared to what I had been using in the Navy. [Laughs]

MC: Ah, so was the budget then initially not very flush as far as equipment for the shop?

HH: The budget in the shop was make-do. If you could use something that somebody else didn't want anymore, you used the parts and made do with what you could do.

MC: Did that change much over the years in terms of the money available to buy equipment of newer and improved?

HH: It improved greatly.

MC: Well, you mentioned this lathe. Were there other things that only money could buy?

HH: We had a stock of tools. Originally, we didn't have a good socket set. And eventually we had all kinds of socket sets, so different departments had their own, so they wouldn't have to come to the machine shop and borrow them. We had a bandsaw at one time. It was make-do, and we had put a double shaft on it, so that we could run down the speed to cut steel. So then we progressed from there to a bandsaw, which all you had to do was change the gears, so you didn't have to flip a lever.

MC: Sounds like you were so good at making do that they didn't buy you new things.

HH: That's right! Exactly!

MC: [Laughs] Put yourself out of business.

HH: Yeah.

MC: So you related with all the departments. You were for all.

HH: Yes.

MC: Did any of the departments put more work on your shoulders than others? Did you relate to some more than others or pretty well the same?

HH: No. Inspection, I guess, was our biggest one. They had equipment that had to be repaired.

MC: So mostly repair work for them?

HH: Yeah, mostly was repair work.

MC: Now, you talked about your years with the weighing division. Could you tell us what you were doing there in that capacity?

HH: I was hired in 1967 to help train to test the scales. They sent me to Montreal, and I worked for a machine company, B&R Enterprises, and they did scale repairs. The big scale repairs for terminal elevators and truck scales and stuff like that. It was good training they had. I think it was four weeks I was working for them, and then I went to Thunder Bay and helped them on their training and did all the scales. All the scales, at that time, were practically all mechanical.

MC: By mechanical you mean--?

HH: You had a scale with weights that you had to be put on the--.

MC: Counterbalance the--.

HH: Yeah, all those weights had to be calibrated every year. The scale itself had to be calibrated with 50-pound weights. They used to use 10,000-pound weights on the scales. On each corner of the scale would have 2,500 pounds and each corner had to be tested, and they had to come within the tolerance of whatever the tolerance that they designated to be accurate enough to ship grain

inbound and outbound. Eventually they had--. It was a tedious job. With scales they had to use platforms and hang platforms on the scale and rebalance the scale, then put the weights on and take the weights off. It was a gang of men. There must have been a dozen men down there, all lifting these fifty-pound weights and putting a load down.

MC: And would they do that for each load of grain?

HH: They do that for every scale.

MC: For every scale?

HH: Yes. Once a year.

MC: Oh, this is just the calibration.

HH: Calibration, yes.

MC: Wow. How many scales would this be that you're talking about?

HH: Hundreds.

MC: Is that right?

HH: Yes. I don't remember. I used to keep track of them. But over the years I guess I just threw out all the records.

MC: All that. Your job then in Thunder Bay after you did this training was to train people in the proper calibration of the scales to make sure--?

HH: No, I did it.

MC: Oh, you did the calibration?

HH: Yes.

MC: Ah, okay. You did the calibration. Okay.

HH: The scale mechanic, if you tell him that this corner was out or that corner was out, he'd have to put it within the calibration, but then you'd have to retest it to make sure what he said.

MC: Is that difficult to adjust it in some way to make sure it's--?

HH: No, the adjustments are quite simple, but you'd have to retest it so.

MC: So those scales, would they be weighing a load that would go to a foreign country? This is what they would--.

HH: Yes. Not only to the foreign countries, every load of grain that came into the elevator had to be weighed and then transported up into the proper bins. From then it would be brought back down to the scale and shifted out onto the shipping scale.

MC: That's a really important thing in order to assure credibility with our international customers, or customers in general.

HH: Right. The Canadian Grain Commission guaranteed the weight.

MC: And you had a huge role in that.

HH: Yeah. I had a role in that.

MC: Any mistakes?

HH: Believe me, when I calibrated them, they were right.

MC: [Laughs] I believe you. No mistakes then ever? Any goofs?

HH: I didn't have any, but later on when they had different people doing it--. When I left, they had four people do the same job I did.

MC: Oh. From you to four?

HH: Yup.

MC: Why was that necessary? [Laughs]

HH: I guess it was that they changed the protocol. I was away sometimes six weeks at a time, and eventually it was two weeks. So, they decided to put a person in each division. The East Coast or Montreal division, and the Bay Ports division, West Coast, and Prairie Division. Not only did they have four, but they had a boss, so that's five men. [Laughs]

MC: Wow.

HH: [Laughs] A funny story comes out to this. My son was an electrician, and he had been working next door to the Grain Commission building. He dropped into the little restaurant that they had on the main floor of the building. He was talking to the maintenance men to our Grain Commission building. They're all supposed to be engineering people. They said, "Oh, by the way, what's your name?" And he said, "Allan Hughes." He says, "Oh, you wouldn't be related to Harold Hughes that used to run this building?" And he says, "That's my grandfather." He says, "You know, what your grandfather did, it takes four people to keep maintenance. We're not doing half of what he did." Unbelievable.

MC: That's changed.

HH: Yeah, that's changed.

MC: Did those scales that you were talking about change over the years after you left?

HH: Yeah, they went to electronic scales. In fact, when I left the Commission, there were no definite regulations for electronic scales, so they hired an engineer to design a calibration for them. They had to make specifications for the electronic scales. They did and they changed the method of putting the loads cell on. They used to hang it on the arm on the scale, and that wasn't satisfactory, so they designed it so that they didn't have to use this method anymore. It became more awkward. The last scales I did were in Port Cartier. It was a brand-new elevator that was built on the upper St. Lawrence, way up past Seven-Island—next to Seven-Island, Sept-Îles. So they were having lots of problems.

But the people that designed the electronic scales, they didn't read our specifications. Then when I went to see them in New Jersey, they said, "We didn't know." And I says, "You mean to tell me you bid on this job and didn't know what you were doing?" I says,

“That’s unbelievable.” I says, “Here’s the book.” I says, “Here’s the regulations.” I says, “You better follow them.” When I went back to Port Cartier, they still had lots of problems.

The superintendent had called me into his office, and he said, “Listen, I hear the scales are going to get passed.” And I says, “Well, Captain Henderson,” I says, “the scales aren’t going to get passed by me. I’ll give you interim use, and that’s the best I can do.” He says, “I’m glad to hear that.” He said, “The company there had promised me that they would be passed by tomorrow.” I says, “No way! You got a problem. You’ve got a big problem. It’s got to be solved. It’s not satisfactory.” He says, “I’m sure glad to hear that.”

MC: So what happened?

HH: They had to redesign it. I didn’t know what happened at the end because I wasn’t involved anymore. [Laughs] I’d left them. I just got back from there and I says, “That’s it! I’m away from home too much. I got boys at home.” They were 10, 8, and 6 when I left, and they were 14, 12, and 10 when I come back and off the job and said it’s too much for my wife to handle.

MC: So then you returned to the shop.

HH: Yeah. I went back to the Grain Research Lab, and I was in second in command from then on until the chap left, and he went to Australia. The chap I trained, he took off and went to Australia. He figured it was a better life in Australia.

MC: [Laughs] Just before we go back to that, the electronic scales, are they still used today?

HH: Yeah.

MC: The problems were resolved.

HH: The load cells--. Anyways, it was attached from the hopper to the scale mechanism. They designed it so that the four corners of the scale on load cells and they originally had the load cell on the arm that attached from the scale to the hopper.

MC: Is that still used today?

HH: Yup, that’s the same method.

MC: In the long run, it was automatic. Did it mean people lost jobs?

HH: I don't know whether they did. For the testing, they lost jobs. What they used to do was just go hire people for a couple of days or whatever, people off the street because all they had to do was put the scales on.

MC: Just have muscles.

HH: Yeah.

MC: So that was an improvement then.

HH: Oh yeah.

MC: Okay, so I'm wondering if you can think back over all your years in both the weighing division and the Grain Research Lab, were there major challenges that you ran into in your work? What would be some of the major challenges that you had to deal with in your career?

HH: The major challenges in the scale division was that they didn't have specifications for electronic scales. Finally, they fell on their ear and made specifications for them. That helped. It solved the problem with the electronic scales.

MC: Were there other challenges in your work? Maybe dealing with people or money?

HH: Yeah. The money was non-existent when I first came there. In Dr. Anderson's time, you made-do with whatever. Each division was allotted a budget that they had to submit the budget. I remember one time the one division, one of the labs, had a surplus and that's how we got our big vertical mill, from his budget. Now the budget for the machine shop was peanuts, really. [Laughs] This machine was in a vicinity of \$3,000, and in today's market would be something like 20 grand or something like that.

MC: Were you involved in preparing these budgets and requesting money for equipment?

HH: Yeah.

MC: And did you get it most of the time?

HH: If there was money, yes. The heads of departments and the various laboratories, if their budget could handle the extra money, they would kick in with some of them. You would have to juggle things around and see what happens. It usually came out pretty fair for everybody.

MC: Good. That's good to hear. You've talked about a number of changes with scales and different pieces of equipment, were there any other major changes that you experienced in your work career that were significant?

HH: All the equipment is pretty well computerized today.

MC: That would be a big change. Now that would've happened in your career.

HH: At the end of my career, we started to be computerized.

MC: Did that have any impacts on you, the move to computerized technology?

HH: Yeah, I think that's part of the reason why they disbanded the shop.

MC: Oh, tell me.

HH: With computerized equipment, you have to work in the factory to really know what the machine is capable of doing. I guess they didn't follow on the powers to be to send people to the factory to learn about them.

MC: Computerization, the coming of computers and the computerized machines, was a big change in your life at the job.

HH: Yeah.

MC: So they didn't see a need to send you for computer technology training?

HH: No, they didn't do that, so they lost out.

MC: Yeah.

HH: I guess when I turned 65, they didn't say anything, when I turned 70, they didn't say anything, and I was going for 75 and didn't make it. [Laughs]

MC: Well, you had a pretty long and successful time. [Laughs] When you think about all those years, are there things that you're most proud of that gave you most satisfaction and joy?

HH: At the time that I worked for Dr. Anderson was the crowning glory of working for the Grain Research Lab.

MC: And why was that?

HH: He was a fair man, absolutely fair. There was lots of prima donnas that would work for him, and he knew it. [Laughs] He would say, "I want that done, Harold. He's got two days to do it." You knew he meant business when he was doing that. [Laughs]

MC: So you had a really good working relationship with him?

HH: Yeah.

MC: Kept the prima donnas under control.

HH: He did, yeah.

MC: So who were the prima donnas?

HH: One was a baker. He was a real bandit that everything had to be done his way. One time his technician and I were calibrating the machine, and he said, "Stop that noise!" And we kept running it. He said, "I mean now!" [Laughs] So we packed up the equipment, left, and then never heard another word. Never heard another word about calibrating that equipment.

MC: [Laughs] That's an interesting story. Are there others?

HH: Oh, lots of stories.

MC: Tell us a few more.

HH: One time one of the—I don't know what he was—he was a professional anyway. I don't know whether he had a PhD degree or not. He come in and he says, “Harold, I got a chip on my windshield. What can I do about it?”

MC: On his car?

HH: On his car. So I pounded it with a hammer. [Laughing] That's how I fixed it.

MC: But that was the best part, you were saying, is when you worked with Dr. Anderson.

HH: It was a different atmosphere altogether.

MC: Was it him or the times?

HH: It was the times and him. When he was out to a party, he was a partying. He always had a story to tell. [Laughs] It was a real funny story. Oh gee. Every year we had a Christmas party, and he'd always tell us a story. He'd always have a story to tell us. It was terrific. That really got the party going.

MC: Is that right?

HH: Yeah.

MC: After he was no longer your boss, then things changed?

HH: Yeah. Dr. Irvine took over from him. He was a good boss, but it wasn't the same. Then when Dr. Irvine left, Dr. Tipples took over. He was in the modern age, eh? He was a younger man, so the changes were from electrical, mechanical, into computerized stuff. He got into that stuff, but he was a good man, too. Still kicking around.

MC: Of all the things you did, what are you most proud of in the work that you did there?

HH: The dough mixer.

MC: The dough mixer is your pride and joy?

HH: Oh yeah. It was. People tried to duplicate it and they ended up usually asking us how to--. The centre pin was kind of a spiral and it used to spin around and it would tear the dough as it went past the other needles. One rotated counterclockwise to the others.

MC: Sounds very novel.

HH: Oh, it was a novel machine. The man that designed that was Harold Rasmussen, and he was the original designer of the equipment.

MC: That's a wonderful contribution.

HH: Yeah. He did a marvelous job in designing that piece of equipment. It was unbelievable. Just worked perfect. Still using it!

MC: There's something wonderful about seeing a piece of equipment that works well and just does things that you want it to do.

HH: I think they have a piece of equipment that one of the new technicians when I was at a retirement party he said, "I've got to meet the guy Harold. When I asked who built that, they'd say 'Harold.' And I'd say, 'Who built that?' 'That's Harold.' I've got to meet him because I'm still using it!" [Laughs]

MC: [Laughs] Will the dough mixer--. You say it's still in use.

HH: Yeah.

MC: So new models would be being made by who?

HH: They'd outsource it.

MC: They'd outsource it.

HH: They outsource it. Nobody is machine knowledgeable.

MC: So when you think of taking your training that you talked about when you first applied for that job with Dr. Anderson, you had all these skills. But you could've applied them anywhere, but you came to the grain industry. How did that setting influence you, do you think? Working in the grain industry, did that have an impact on you?

HH: You had to learn electronics. You had to learn electromechanical devices, and you had to learn that because I wasn't trained to do that. In the machine shop, you ran machines and of course maybe you just made sure the equipment ran properly and repaired whatever you had to. But in the Navy, one thing about it, you can't run to their corner garage.

MC: [Laughs] That's true. When you're out in the ocean. So you've got to make do.

HH: You had to make sure that what repairs you did were absolutely perfect. No ifs, ands, or buts because if something broke down, you had to fix it on the spot. No matter what kind of ocean they were in, rough or smooth as glass, you had to fix it.

MC: Working in the grain industry, did you find that certain skills were extremely important in the application of your equipment knowledge to the grain industry and the demands it put on you to design specific equipment that met their needs? Did you find that you had to look at things a little differently?

HH: Yes. In the Navy and boats, they were huge, and you're going into the Grain Research Laboratory and the little tiny thing you needed a--.

MC: Magnified.

HH: [Laughs] A jeweler's eyepiece to look at it. You got used to it. Eventually, you got used to working with the small stuff. It took a while.

MC: Yeah, I bet. Any other things that were unique about the grain industry that influenced what you had to do on the job? As you say, the small-scale size. Were there other issues unique to the grain industry work you were doing that tested you, in a way?

HH: The most demanding job I guess was looking after equipment. I could walk through the laboratory, and I could tell you what machine was working and what wasn't working properly.

MC: Just by the sound?

HH: Just by the sound. And especially when we went into our new building. Initially, most of the laboratories had cold rooms. Of course they were refrigerated. I could tell, just by sound, which one wasn't working. Initially, the building engineers were supposed

to be looking after the refrigeration equipment. Eventually, we took over it, and we did it ourselves because they were ruining things. It shouldn't have happened. They would bend fans and--. Oh!

MC: [Laughs] Must have drove you nuts because a lot of us don't know much about machinery, do we? We're users.

HH: I laughed at one time when I was talking to one of the PhDs, and I was remarking, "I thought a PhD was supposed to be smart." He says, "Harold, PhD doesn't make them smart." [Laughing]

MC: My father was a farmer, and he said something like that to me because—I shouldn't be telling stories on this tape, but I have to tell this story—because I was at home on the farm, and I drove out to this wide-open field, and I actually drove the car into the truck. My father said the same thing because I was taking my university training. He said, "I thought you were supposed to be so damn smart! How could you drive the car into the truck in a huge farmer's field?" [Laughing] So you've mentioned these PhDs a lot. Are there some stories there?

HH: Oh, lots of stories. I better not tell them. [Laughing]

MC: Oh, give us one.

HH: When they retired, I used to try and make something pertaining to their trade, or whatever they were doing. When Dr. Laberge retired, he was in the barley lab, and of course he liked the odd beer.

MC: [Laughs] Barley and beer.

HH: I made him a half scale--. I cut out a piece of copper, and I made him a half bottle, and I mounted it on it. I can't remember the inscription I put on it, but he still has it.

MC: Wonderful.

HH: I made Dr. Tkaczuk—he was a bird watcher—so I made him a Johnathan Livingston Seagull. Got a minute?

MC: Yes, yes. Oh, here it is. That is beautiful. This is a--. Is this brass?

HH: Copper.

MC: Copper. That is absolutely--. It's a beautiful bird, the seagull.

HH: Johnathan Livingston Seagull.

MC: Yes. Isn't that a wonderful thing. That is beautiful.

HH: Various people got those.

MC: Very nice.

HH: The first one, she just passed away.

MC: And who was that?

HH: And the first one she just grabbed it and the first one she said, "That's beautiful. Can I have it?" And I never saw it again.

MC: Oh my. Well, you would've been popular at all these retirement parties.

HH: Oh yeah.

MC: Did they have to try to make something for you when you retired?

HH: They gave me a--. They didn't make it, they bought it. It was an elevator.

MC: Ah. Wonderful. Very nice.

HH: All of the glass and yeah.

MC: Very nice. That's very nice.

HH: Another one, there was a canoe I made.

MC: Oh.

HH: He left at 55, retired me at 55.

MC: Yes.

HH: He retired at 54, and they gave him money for a canoe because he was going out of the country, so I made him a copper canoe, a small one. It went on a base, good one on a base, plexiglass base, and it was like waves.

MC: That's wonderful.

HH: It was [inaudible].

MC: Wow. Do you have a workshop here at your home? Do you continue to do some of these things?

HH: Yeah. I'm working right now. I'm working for the Navy Museum.

MC: Really?

HH: Yeah. And if we don't do it, if the veterans don't do it, it's not going to get done. We restored a twin 4-inch gun, which was the main armament on my ship. The twin 4-inch was the main armament. That is on the quarterdeck on the ship, and we have a museum, which has models of the ships of Manitoba.

MC: Is this the Maritime Museum in Selkirk?

HH: No. It's HMCS Chippewa on Assiniboine and Navy Way. So if you want to spend a little time some day and browse through it, we're open on Wednesdays.

MC: I'll note that.

HH: There was lots of stuff pilfered off it, and I made duplicates for it.

MC: That's wonderful that you can keep doing that.

HH: I made a telescope, or actually two telescopes. They looked like telescopes but they're not really. [Laughs]

MC: That's great you found a way to keep up your skills and have fun doing it.

HH: Yeah.

MC: I'm wondering, is there anything else you'd like to tell us about your career with the Grain Research Labs or with the weighing division that we've maybe not covered?

HH: Well, there's not too much. It's been a fulfilling life, and I loved it.

MC: I can tell. It just comes through loud and clear.

HH: It was a job that had challenges every day. You never knew what was going to happen.

MC: One other thing we wanted to know is if you had any memorabilia, pictures, I don't know what else that we could perhaps take pictures of or anything that you think might be useful for us that could be lost if we didn't preserve it in some way?

HH: Probably the lab has pictures.

MC: Probably the lab would have everything. Okay, so nothing that you can think of then? Well, I can't think of anything else to ask unless there's something else that you--.

HH: I think that in the weighing division, I don't think there was too many pictures taken because you'd have to take them with flash, and that's a no-no in an elevator.

MC: So that might be hard to have anything we'll find there, then. Well, I thank you very, very much for your time today. This has been most interesting, and I can tell that you've thoroughly enjoyed your years working in the grain industry. It's been wonderful. Thank you very much.

HH: You are welcome.

End of interview.