PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Peter Savage

INTERVIEWER: David Finch

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David: Today is the 2nd day of December, 1999 and we are with Mr. Peter Savage at his home at 3139 - 35th Ave. S. W., Calgary. My name is David Finch. Could you start by telling us where you were born.
Peter: I was born in Grand'Mere, Quebec, Grand'Mere, french for grandmother.
David: And what year?
Peter: 1927.
David: Tell us a little bit about your family, how did your parents come to be there?
Peter: Dad was a school teacher, he had actually worked for the railway and taught school both and when the First World War was over, he thought he'd try teaching school. The CPR gave him a year's leave to go out and try it and see whether he liked it or not. It was quite a remarkable organization, the CPR, no wonder it engendered quite a bit of loyalty. Anyway he enjoyed teaching school, he taught school at Baron Byng High School in Montreal right after the war.
David: Baron Byng is spelled.
Peter: B-y-n-g. He was Lord Byng, he'd have been a soldier, I guess, I think Byng was a Governor General too wasn't he? As I recall. And they named this high school after him, in the east end of Montreal. A lot of well known Montrealers went there. It was an interesting place.
David: Your father's name?
Peter: Charles.

#016 David: And your mother's name?
Peter: Helen.
David: And you mother's maiden name?
Peter: Montizambert, there aren't many of them around but there are a few.
David: How did they meet?
Peter: They met before the war, they met in Port Hope, Ont. after Dad graduated from Bishop's, his first job was teaching school in Trinity College School. He was very young actually, it wasn't until he started playing Junior Hockey in Port Hope that they kids in the school discovered that he wasn't any older than they were. He was, I guess a bit of a prodigy when he went through school and university. But he met my mother there in Port Hope and after the war they were married and moved to Montreal. He had his first job teaching after the war, in Montreal. And then the paper mill in Grand'Mere, Quebec had established a school there for the English speaking people that they brought in, the engineers and so on because there were no French-Canadians familiar with the

engineering in paper mills, running paper mills. It was all an American investment. An American group built the power dams and the paper mills there at Grand'Mere, up on the St. Maurice River. Quite a remarkable crew actually, they built their own homes there and actually moved to Grand'Mere and lived the rest of their lives there. So they became part of the country. Cahouns and Sabatans and so on. It was quite a remarkable crew. It was a very paternalistic environment, they ran the town, benevolent dictatorship is what it was. But the school, when they first started it, it was an American school because that's all they knew. And they saluted the Stars and Stripes every morning and pledged the flag and then finally they realized that this was kind of dumb. Then in about '22 or so I think it was, they advertised for a Canadian to run the school and dad got the job, so they moved out to Grand'Mere.

#041 David: How far is that from Montreal?
Peter: About 120 miles.
David: Which direction.
Peter: Well, it's due northwest of Trois Rivières, which is halfway between Montreal and Quebec City. The river comes in at an angle.
David: So what do you remember of your childhood?
Peter: It was very pleasant. Grand'Mere was a lovely little town, it was on the river and lots of lakes around and magnificent golf course. I only started playing golf there towards the end of our stay there, I was 12 when we moved. Skiing, you skied right out the front door in the winter time and skied over to the golf course and it was quite splendid.

#048 David: Tell us about your education, how did you come to be in the career you came into?
Peter: I started off, like a lot of kids, not having the faintest idea what I wanted to do. I was interested in geology and the outdoors but growing up in a paper mill town I thought I might be a forestry engineer. I worked in the bush a couple of summers for paper companies and decided I didn't really want to do that. I took pre-med courses the first year at McGill. The rest of the family had all gone to Bishop's but my brother had done so extremely well at Bishop's that there was no way I was going to follow him there. There wasn't anything he hadn't done, including winning the Governor General's gold medal when he graduated in Honours maths and physics and all the rest of it. So there was no way I was going to follow him. So I was the first to break ranks and go to McGill. So in the 2nd year I ended up in mathematics and physics. I was interested in them and again, after I was in Honours maths, physics and that's a pretty intensive course, I discovered fairly early on that of all the things I wanted to be, a physicist wasn't one of them. And finally got back to my original interest in geology and in the last two years, I took all the undergraduate courses in geology but one. I managed to cram that all in so with the combination of geology and math and physics, it seemed a logical thing, plus nobody wanted geologists the year I graduated. Actually as it turned out there were two jobs available, one was a geologist in Africa working for a tin company and I didn't get wind of that until after I had accepted the job in New Brunswick. But Shell had been

looking for some young computer type people to work for Highland Exploration, they had a contract to do seismic work in New Brunswick for Shell. So I talked to Shell on a Friday night. . . It was strange, I was going to skip classes, we had classes every bloody Saturday for four years in a row and this particular Friday night I was going to skip the Saturday classes and I was walking across the campus heading for the bus to go home and ran across a classmate who said there was a notice on the bulletin board of the geology department that I was to call somebody at Shell in Ottawa. Then I sort of quivered about it whether I did it or didn't and I finally decided okay, I would and I went back and got the telephone number and it was Bob Brown, who subsequently became a good friend. He's still living in Edmonton. And Bob offered me this job and I accepted it and then Monday morning, 7:00 I got a cable from Nigeria offering me the job in Nigeria. So if I hadn't gone back, hadn't run across that fellow as I walked across the campus I would have accepted the Nigerian job and been a geologist instead.

#085 David: So what year was this?
Peter: This was 1948.
David: 1948. So your degree was?
Peter: It was sort of a combined. . . it was a general degree but it was mathematics, physics and geology, which worked fine. I did have a half course in geophysics but geophysics was pretty primitive in those days.
David: I was going to say, what were you learning?
Peter: Well, David Keys actually taught the course and he'd written the text, Eve and Keys, I never knew Eve but it was one of the first text books on geophysics. It was heavily into mining geophysics but it talked to us a bit about seismic and oil geophysics. Just enough so that I knew which end was up on a seismic record. And sort of the general principles behind it, which were pretty general in those days. People hadn't really gotten into the science too far. Some of the people at Shell had. And we were really an in-house crew working for Shell, we lived in the same quarters as the Shell people did and we worked very closely with them. It was quite a remarkable experience down in New Brunswick. The Shell people came up from Houston, the Houston lab. It was a very interesting project, very complicated geology, steep dip and we had to migrate the reflections and at times we were doing 3 dimensional work, shooting cross breds and doing 3 dimensional positioning of the reflections and so on, so we did 3-D geophysics back in 1948-49.

#105 David: Using what kind of. . . just go through what you were doing?
Peter: Just conventional records. We started off with 12 trace instruments. It was probably one of the last of the 12 trace instruments, single geophones, heavy as all bloody get out. They put us all out in the field to start off with so we helped load the dynamite into the holes and we were jug hustlers.
David: How big were the charges?
Peter: Well, the charges, they got pretty big, we got a couple of hundred pounds on some occasions. It was not good record country. In those days the answer to no records was to hit it harder and see if you could create some. Normally the charges would be about 20

pounds, which is a lot more than they shoot out here. They drilled the holes, a lot of gravel on the surface, they had to case the holes. We at first, had a whole crew of water well diggers digging the holes for us and what a collection of crooks those guys were. They were hilarious in a way but they were crooked as a dog's hind leg. My particular job was to keep track of the casing that we set in these shot holes and it was really high quality casing. It was really water well casing., which was a great temptation for all these water well diggers. A lot of the casing went astray. My job was to keep track of the casing, one of my jobs, as well as being a computer and calculating and plotting and the rest of it. Every day one or another of the 6 water well diggers would come in and squeal on the other guys and tell me about all the casing the other fellows were stealing. It was quite an introduction to life.

#125 David: So they were your drilling contractors?

Peter: They were our drilling contractors for the first year. They were slower than all get out too. We eventually brought in a couple of Failing. . . .1,000 were they, 1,500. . . something like that. They were rotary shot hole rigs and they were a great improvement on the Sputters. The water well diggers all used Sputters. Then when we were about to leave, we sold. . . .

David: How deep were those?

Peter: Well, it would depend on how deep the gravel was, we'd sometimes go as deep as 200 feet if the gravel was really deep. The gravel would just absorb the energy from the shot and you couldn't get anything to hit the ground. In a way we were lucky, the first place we tried an experimental profile we got reflections. There were a lot of other places down there, if we'd tried we'd have been wiped out and probably would have gone home. But we had to do surface velocity determinations and these were all brand new techniques in the business. Frank Goldstone, who was head of the geophysics in the lab in Houston came up, and it was quite interesting, he said, you should try one of these surface velocity things. And the Party Chief had never heard of it so he wanted to know what that was all about. Old Goldstone just said, oh it's a right angle triangle and he turned to me and he said, you know, you shoot here and you record there and you get your reflections from the same place on the sub-surface and that's what you do. The Party Chief's parting shot, when he took Goldstone up to see the field operation was, you design this project and we'll shoot it tomorrow. So fortunately I was able to design it, figuring out from that brief introduction. And it worked, it worked fine.

#148 David: So he just made this off the cuff comment and expected you to figure it out?

Peter: Yes. And then other people came up, Van Melle and Hafner, from Houston as well. Every time they wanted to try something new they. . .so we got to know all these people at Shell very well.

David: [Asked for spelling Van Melle and Hafner.] And these were from . . .?

Peter: From Houston but Goldstone was English, Van Melle probably Dutch, Hafner was Swiss I believe. All working out of Houston, tremendous geophysicists they were. And great, great teachers. I really enjoyed working with them.

David: So what were you doing in New Brunswick, was it a known field?

Peter: Well, there had been. The Albert field had been there for some considerable time, it was a gas field. Moncton was fueled with natural gas. By the time we got to Moncton, they were literally pumping the gas out of the field. It had less than zero pressure probably. People were busily converting their furnaces to propane because the gas was going to run out just about any day. The Albert shale was a . . . bituminous shale, you could break a chunk of the shale off and actually light it on fire, it would burn somewhat like a candle. So the hydro-carbons were there. So it was a matter if we could find structures that were created at the right time and see if we could find these things. We found structures like you wouldn't believe, some of them overturned even. They were. . . the geology was pretty wild and wooly. We didn't find any oil. We found a bucket of oil I think, out of one, one dead oil out of one well. But it was interesting you know, when you're in an area like that, the locals get high hopes up because oil is just going to revolutionize the economy and the economy was fairly sad, had been sad for awhile and was going to be sad for a considerable time afterwards. But one time years later, I was flying from Chicago to Montreal and there was a fellow sitting next to me, insisted on telling me all about the Maritimes, he was an American from some place outside Chicago. Which was fine, he knew Sy's Seafood, people in Moncton, the really, only good restaurant back in those days in Moncton. And there had been a kidnaping and lots of front page news about the family, so he was telling me all about this. And then he got on to telling me about oil in New Brunswick. The coincidence, the poor devil didn't know that he was talking to someone that knew and he started telling me all about how Shell had discovered oil down there but had capped it waiting for the price to go up. Which is sort of the standard routine that you get everywhere you go. I said, oh, which well did they cap. Well, he didn't know, he couldn't remember their names so I started listing the names off, there was Abahok??? and there was Neweyjawock??? and there was Anaganse??? and so on and so on. Finally I hit one and he said, yes that was the one and I said, oh yes, I was there when they tested it and they got a bucket of dead oil out of it. And I could assure him that the myth of oil companies capping a well waiting for the oil price to go up was a universal myth and it wasn't true in New Brunswick any more than it was anywhere else. It was disappointing. That is an area that has intrigued people since. They went back there with Pan-Canadian actually and Pan-Canadian, Home and . . .who was their fourth partner, I've forgotten who the fourth partner was, I think they were the operators. We went in with a Vibroseis crew and did some more work down there. It gave me an excuse to go back and have a look at the old stamping grounds. And we were equally unsuccessful. I don't think we even drilled a hole.

#203 David: So there was nothing there to capture the oil, is that it?

Peter: I suspect that was the conclusion. Wilf Baillie was really involved in writing that final report. I don't know if he mentioned the reasons for not being able to find oil. Wilf Baillie, Bill Gusson was the Exploration Manager, he's still alive in Ottawa, quite an interesting character. There were a bunch of interesting people there. One of the great advantages working in a small group like that in a strange place was we got to know

everybody, the drillers, the tool pushers and so on. It was quite a useful thing when we got back to Calgary, when Shell finally decided that they'd made a mistake pulling out of Western Canada.

#213 David: So you were out of university, what did you learn, it sounds like you were learning a bit of everything? What specifically did you learn how to do in New Brunswick?

Peter: Primarily interpreting geophysical records, plotting them, creating the cross sections, migrating reflections, which was something that not everybody had a chance to do. A lot of people working in most of the world were dealing with fairly flat reflections and migrating was something that you hardly ever came across in those days. So just learning how to do that was extremely valuable. Everything had to be migrated down there pretty well. We very rarely got a flat reflection. So when we came out to Alberta it looked easy as all get out. That was a deceptive situation, it wasn't as easy as it looked. Then Shell, after we'd been down there for a year and a half, Shell hired me away from Highland. That was the second one that got hired away from Highland by Shell.

#228 David: So that was in '49 or '50?

Peter: In the fall of '49. We started off in New Brunswick in a little town of Sussex. There had been a major military base there as Sussex and Shell had rented the sergeant's quarters actually, in the military base and put us all in. We had little cubicles, every one of us and hired a cook to cook for us. It was a marvelous situation. The army base was still functioning, there weren't too many. They were busily tearing it down actually but the officers mess and the sergeants mess were still there and they made us all honourary members of both. For a young fellow that was rather a nice situation.

David: 21 year old officer, right.

Peter: Just about the size of it. Well we were all civilians, at this point they welcomed civilians into both messes because they were running out of army people to staff. The sergeants mess was the one that was the most fun. But every now and again there'd be a good party in the officers mess as well.

#242 David: One thing isn't clear to me, how did you get this job? You worked for Highland, had you applied to them?

Peter: Actually I had interviewed. . . people from Shell came around, Bob Brown came around and interviewed a bunch of us at McGill, a bunch of us that were about to graduate and had gone off with his notes. Ted Link had come down and done the same thing with Imperial. And I often used to kid my Imperial friends by saying that the biggest favour Ted Link ever did me was not to hire me for Imperial Oil. That was the first time I met Ted was when he was doing that.

David: What kind of a guy was he?

Peter: Very interesting fellow actually.

David: Any stories?

Peter: Oh he was full of stories. I didn't get to work with him, I saw him on a few occasions and worked on a number of projects that he was involved in but didn't. . . .

David: I heard he was kind of a prankster, kind of a real character.
Peter: Oh yes.
David: Do you remember him doing any things?
Peter: Nothing specific. He had two brothers, Walter and George that I knew of and then I think there were other kids in that family as well. They were a remarkable crew. I think just about every child ended up with a Ph.D. of one form or another. George was a plant pathologist. And he was the one that haunted Lake O'Hara. The Adeline Link Trail that goes around Lake O'Hara was named after his wife. George started going up to O'Hara, gosh. . probably in early '30's at least, maybe earlier. But a lot of the trails around O'Hara were built by George Link. And he had a special deal with the CPR during the war. They closed the lodge and so on but Link and his wife were allowed to go in and live in it and look after it during the summer, which must have been just pure paradise, to have that whole place to yourself. It must have been unbelievable. He was quite a character. Our first visit up there, in '51 I guess, we were living here and we discovered Lake O'Hara, just a brochure that we'd picked up on the chair in Moraine Lake Lodge the year before. Just somebody had thrown it down there and I picked it up and said, that's where we're going next year. And went there every year for. . in fact, last year was the first year we didn't go. Anyway, the first dinner evening at O'Hara, in the dining room there, every now and again there would be a drop in the conversation and all of a sudden there was a quiet and George Link turned around and I was sitting at the next table and in a loud voice, he said, I hear you're a geologist. Of course, we were the youngest people there, here we are in our 20's and everybody is looking, so I said, well, in a manner of speaking. He said, great, tell me what Taphorogeny is. It took me six months to find out what the hell Taphorogeny was. He had gotten it. . . Ted had given him a book about the geology in the area or an article of some sort that Gerry Henderson had written. Gerry had been a classmate of mine at McGill. So Gerry had taken this term from Marshall Kay's monograph on geosynclines???. It became a bit of a joke between Gerry and me afterwards. I accused him of getting me into all kinds of trouble using this very obscure phrase. But I found out the answer eventually and sent Link a detailed missive on what it was. By then he probably wasn't interested any longer. But he was always very keen on all the flora, fauna, geology and everything. Interesting person.

#309 David: So we have you interviewed by Link but hired by Brown.
Peter: Hired by Bob Brown, who was hiring for Highland actually, who was the sub-contractor. So I was a computer for Highland and worked out in the field for a bit and then brought into the office after a month. Did some surveying, did some jug hustling and shooting and so on, then had to come into the office. And the Party Chief hadn't done a damn thing in the office. We were a month behind in the office when I got in, so we had lots to do. Picking first breaks and working out the weatherings, individual trace weatherings because we were point plotting. And then learning how to migrate and all the fancy hyperbolic cosines and sines and the formulas. It was quite involved but not too difficult.

#316 David: So how did you come to be hired away to Shell and out here?

Peter: Shell was looking for people and they asked me if I was interested and I was. At that point aided and abetted by the fact that Highland had sent up a bit of an idiot for a Party Chief and it made it very easy to leave.
David: Had you met your wife yet?
Peter: Yes, I had. One of the other fellows had been hired locally, Jimmy Merchison and one of these days you ought to talk to Jimmy. He's got a lot of interesting background on the contracting business in the west and Jimmy and his wife were staying in a little suite in Shirley's parents home. They had a small suite, it was part of their house that they rented out. And Shirley had come back, she had been working at the Children's Memorial Hospital in Montreal as a nurse. I never knew her in Montreal, she actually dated somebody who lived in the same block I did. She had come back to New Brunswick because her dad had been sick and she had decided to stay in Moncton for at least a year, just to keep an eye on her parents. So she was at loose ends and I was at loose ends, we had moved from Sussex up to Moncton at this point. Betty, Jimmy's wife started putting two and two together and decided that here were two people at loose ends that ought to have their loose ends tied so to speak. So she encouraged us both and away we went.
David: And Shirley's maiden name?
Peter: MacPherson.
David: So what year did you get married?
Peter: 1949, we were married in October, had a three day honeymoon in Prince Edward Island at the Charlottetown Hotel.

#347 David: And then off to Calgary?
Peter: And then off to Calgary in mid-November. Stopped in Montreal for a week and visited the family and then out here.
David: Driving, on the train?
Peter: No, flew, Shell flew us out.
David: Wow, what kind of plane?
Peter: Northstar. Noisy as all get bloody out. That helped too because Shell flew all their people out from New Brunswick except I suppose there were the odd one that owned cars, not too many people owned cars in those days. And then we were going to have to drive the crew out if I had stayed with Highland and I wasn't looking forward to that so that was another incentive. Arrived here, the first thing I was told, by Ted Rozsa actually, was don't buy a house because you probably won't be in Calgary long and it's been 50 years now. 50 years two weeks ago.

#364 David: So did you work for him when you came to town?
Peter: Yes.
David: But not for long because he went out consulting.
Peter: He went out soon after that, yes. He was Chief Geophysicist at the time and I actually worked for him very briefly when I first arrived and then I ended up working for the District Geophysicist and he was still Chief of the lot. I think there were about 15 or 16 of us when we first moved out here with Shell. There weren't very many.

David: What was the level of geophysical activity?

Peter: It was picking up very quickly in '48. It was very busy. At one point with Shell I was supervising 5 crews and doing the interpretation. There were so damn many crews that I hardly could get out in the field. We had field supervisors as well so that helped. But I was doing most of the interpretation.

#382 David: What was the quality of the information you were getting at this point. Were you finding oil based on this information?

Peter: Oh yes. Looking back on it, the information was pretty crude but even then we were getting pretty good reflections and being able to map and we thought doing a very good job. We weren't tape recording of course, or anything like that, it was all just paper records. I can remember looking back at the old records that they had used to discover the Jumping Pound field and being absolutely amazed that they were able to interpret them as well as they did. The field's only a mile across and it's down there, what, 10,000 feet or whatever and drilling in the foothills where your hole goes off target so easy. The fact that they even hit it was amazing but what always amazed me was the interpreters were able to interpret that data well enough that they could find that field.

David: No luck involved?

Peter: There was some. They drilled a very dry hole subsequently and that was bad luck but that same kind of bad luck could have hit them the first time. There was some luck yes.

#403 David: So where were you looking for oil when you were here your first year?

Peter: Golly pretty well all over Alberta, Saskatchewan. I supervised crews in Saskatchewan. One of the first big projects was looking for the extension of Leduc, south. We did mile jump correlation point. We shot point every mile. The northeast corner of every section we'd have a shot point. The records were so good that you could jump correlate the mile and create maps and we were looking for another Leduc, another Redwater. Of course, Shell was smarting because they'd been out of town. Well actually Leduc was discovered while they were pulling out but they'd made the decision, they couldn't reverse it. They's had a very good land position in Redwater. They'd actually had seismic on Redwater and had recommended a well, which would have discovered the Redwater field. But the recommendation went to the Hague and it was turned down on the basis that the structure was too big. It was just a regional feature and shouldn't be drilled, much to the disgust of the local people.

#427 David: So did the give up all their Redwater land?

Peter: They gave up their Redwater land. I've often said, Eric Harvie, I think was the beneficiary of a lot of that, and I've always said that that was the greatest thing that Shell ever did for the people of Alberta. Yes, they gave it all up. So when they came back in our orders were to find another Leduc or another Redwater. We did pick up the reef trend coming south from Leduc, near the Bonny Glen, Wizard Lake, right down to Westerose, we had that mapped. I'll never forget, Wilf, I don't know if he told you about rushing in to a management meeting with this map showing this reef trend coming south. He was pretty

cheesed off, management looked at it and said, oh they're all too small. Of course, they had no idea there was 800 feet of pay at Wizard Lake. It may have been only a couple of square miles in surface extent but with that kind of thickness. I computed one day, there was a Pan-Canadian, well a CPR section right in the middle of Wizard Lake, I computed one day that the CPR gave away 80 million barrels of oil in that one section of land. They ended up with 12 or 12 ½% of it, that was the royalty instead of all of it. That was one of my original sore points there at Pan-Canadian. They kept telling me what their finding costs were, that they could find oil so cheaply by having other people do all their work for them. And I said, you haven't factored in the fact that you gave them 87 ½% of the oil in return so I said, you've got to include that in your finding costs and your finding costs then go sky high and the stuff you gave away to get that 12 ½%. But the accountants could never quite grasp that concept. Shell was. . . we were really learning all over again, I guess, how to explore here. People were coming from all over, there were Englishmen and Dutchmen and Americans and then natives, which were us. It was interesting being a native.

#472 David: How so?
Peter: Well we were paid less for one thing, than anybody else.
David: How much?
Peter: Oh, 25% perhaps. That lasted for a few years.
David: And how did you solve that?
Peter: Shell Canada took over the operation from New York and that put an end to the. . . but that was after I had left. At the time it didn't look like there was any future for a Canadian in the company. And it was fairly discouraging.
David: To what would you contribute that discrepancy?
Peter: Discrepancy, disparity, discrimination. They were used to operating in foreign countries and this was just another foreign country. And local people hired were natives and they brought in the experts from elsewhere. Mind you the experts they brought in, we became very good friends. They were all great. . . .not all, there were a few idiots. When they opened up. . . it happens in every company, when they opened up an office up here in Calgary and were looking for people, divisions in the States found this was an ideal opportunity to get rid of the people that they couldn't fire but they really didn't want around any longer. So we got saddled with a few like that unfortunately. But there were some good ones like Ted, oh there were several real crackerjacks came up here as well.

#505 David: Now they were teaching you but you Canadian knew the local lay of the land, because you had already been working here, were you teaching them?
Peter: Not a hell of a lot. They weren't really inclined to listen very much. Even to things about people and personnel and so on. We had one character who was a shooter on the Shell crew, he was a local fellow, who was a complete con artist and the Shell management was just entranced by him and just over ruled all the objections of the rest of the people, the Canadians on the staff and sent him down on a course to Houston. This guy, I don't think he'd even gotten out of high school and they started throwing calculus at him and so

on and he had a mental breakdown. He ended up in Ponoka, it cost Shell a bloody fortune. But he was just a pure unadulterated con artist and they were warned but they didn't listen. That happens. But they got over it, they became a Canadian company as much as they could eventually but that was after I left. But when George Garbutt and John O'Rourke came around and . . .

#533 David: What are those names?

Peter: George Garbutt, his father had run the Garbutt Business College here and John O'Rourke. They wanted to start up a seismic contracting company and O'Rourke had experience Party Managing and George had a little money and was interested in getting into the oil business. He and John had grown up together as kids in Elbow Park so they were looking for a geophysicist and interpreter to go in with them. Ted had started his company, Ted and Wilf. Other people were doing it, Johnny McMillan, George Longphee and so on, so it looked like a pretty good idea. So we started a company called Discovery Geophysical. We started right, the very first couple of jobs were right at the peak of the boom that was going on in '48-'49.

End of tape.

Tape 1 Side 2

David: Okay, so you said that you just got started with this company.

Peter: Discovery Geophysical. This was the fall of '52, they came by and I was intrigued by the idea so I agreed to go with them. It was kind of interesting, I was working on locating a well and it eventually became Shell. . . oh, it was out west of Olds, Westerdale, I guess it was called, Shell Westerdale. And I was very interested in this particular project and wanted to make sure they drilled this well. So I kept postponing putting in my resignation. It was quite funny, when I typed my resignation out, I'd stayed late, everybody had gone home I thought. I was sitting at the typewriter, the secretary's typewriter and I was typing out my resignation and the District Manager, George Lewis came in and he'd come back from a management meeting. He saw me there typing away on this typewriter so he stood in front of the typewriter and chatted with me. If he could have read upside down, he could have read my resignation, though with George that wouldn't have made any difference I don't think. He was a fine chap and just a great guy.

#013 David: So we've got you about ready to reign from Shell?

Peter: Yes. We finally got the well site approved. My last conversation with the Exploration Manager, he fancied himself with knowing a little bit about geophysics, which was kind of humorous in a way because he didn't. And he wanted to know what the effect would be on changing the correction velocity, the velocity we used to create our elevation corrections, what effect it would have on the structure. I said, I didn't think it would have very much effect at all and he said, well, why don't you go ahead and do it and show me the map, how long will it take you to do it? I said, well, it shouldn't take me very long but my problem is that I plan to resign tonight. I said, I'll work on it all weekend, this was on a Friday. John and George were giving me a hard time because they needed to say who their geophysicist when they were talking about potential contracts, so the pressure was on. So I said I'd work all weekend on it. Well, as soon as I mentioned the word resign at Shell, you're out the door instantly. That's it, they wouldn't even let me come back and work the weekend on this project. However they eventually did drill the hole and they got a good recovery of oil out of the second white specs, which is a shale. It's an interesting story and I still think there's a lot of oil to be found in the second white specs in this country if people would learn how to drill it.

#028 David: Say more.

Peter: Of course, oil in shale is very tricky. It's porosity and permeability are not particularly high to say the least. So that getting the oil out of the shale is tough. But if the shale is fractured and you get your hole drilling horizontally in these fractured shales, I think you could probably make some major recoveries. However, we tried it once at Pan-Canadian but didn't succeed to well. But I think there need to be more work done on that. But this was my first experience with oil coming out of the second white specs and that was that

well at Shell Westerdale. It was a good recovery, I think they got about 5,000 feet in the drill stem, oil out of the specs. But anyway that was history, I learned about that after I left. We started off, we did one little job for Tom Brooks, down in the south part of the province. We got into a real jackpot there because Tom lost our data and then refused to pay the bill because he didn't have the data. He'd given it to somebody else by mistake along with some other things. We finally got that squared around and then we went out to Fort Simpson in the Northwest Territories. There was a . .. I'm trying to remember. . Shell eventually bought the company and the land, Warren Hunt was the geologist for them, Max Wopenford was manager up at Fort Simpson. They suddenly decide they needed a seismic crew up there and the barges had long since quit. This was in the fall and they'd stopped going down the river so we had to fly everything in. This was in '52, there weren't that many planes around that could carry much freight. In fact, there weren't any that we could get our hands on, so we ended up hiring an Avro Ensign. I got to fly quite a bit in that Avro Ensign for a few days. There aren't many around that have flown in an Avro Ensign except old Air Force types.

#055 David: So there were no DC-3's?

Peter: There weren't nay available. There were DC-3's around but we just couldn't get our hands on one. There was a good airstrip at Fort Simpson, built part of the staging series of airstrips. So we had to fly all the equipment in with this Avro Ensign. So we couldn't fly doghouses in or anything like that. We had to build our own dog house out of 2x4's and plywood and so on there on a sled and pull it around.

David: With what?

Peter: With a D-6 cat. Unfortunately that fall was a late fall and the ground didn't freeze so it made it rather difficult to get around.

David: So where were you shooting this seismic?

Peter: This was all in Fort Simpson itself because we couldn't get around we shot. . .

David: On the island?

Peter: Actually we shot a few shots on the island as well. I think we only shot one shot on the island because it shook the whole island and the Mounties were a little upset, the people were a little upset. The Fort Simpson shale is an extraordinary plastic shale. It was interesting, one of the fellows tried an experiment with a hunk of it, throwing it down on a flat rock until it was paper thin almost. It was very plastic. And we had about a 5 pound shot in this Fort Simpson shale which underlaid the whole island. It was just like shooting it into some kind of a conduit for energy because it just shook the whole island. We had people running for miles away. Then we shot the road between Fort Simpson and the airport, and then we shot up and down the edges of the runways. It was the only places we could get to with the ground not frozen. The Department of transport would have been somewhat upset to know we were shooting dynamite off along the sides of the runways but we didn't tell anybody about it. The area was just covered with sand, on the surface, above the Fort Simpson shale, was a tremendous lake deposit of sand, in some places it was as thick as 1,500 feet. Loose, unconsolidated sand and if just soaked up the energy. We couldn't get results. We'd been there about two weeks. It was a cost plus job. We'd

have made our fortune if we could have got results. We'd have been off and running. For a little company to get started, it was a perfect contract. Nobody else wanted it. Nobody was interested in sending a crew up there, there was lots of work down here. What we didn't know, none of us knew, that within a month, the boom was over. Quebec wouldn't buy Alberta oil, Ontario wouldn't buy Alberta oil. It was going to mean a penny more a gallon and they just wouldn't do it. And then they finally put in the Ottawa line at the border and Ontario had to take Alberta oil but that didn't come for some time. So disaster was on the horizon but we didn't know it. But we had this cost plus contract up there and it was marvelous but it only lasted a month. After two weeks, Warren Hunt came up to see how we were doing. And I had been trying everything, pattern shots, air shots, we had tried a Boyles Brothers diamond drill to drill the shot holes. Well using a diamond drill in unconsolidated sand was just hopeless.

#090 David: Boyles Brothers?

Peter: Yes. They were diamond drill people for the mining industry. And it was the only drill small enough that we could get into this Avro Ensign and get up there.

David: How big is an Avro Ensign?

Peter: It's a 2 engine. . .it's smaller than a Lodestar which I think is what Air Canada was using. It was smaller than a DC-3. There's bits of an Avro Ensign. . . .is there a whole one out there at the air museum, I think there is. But it's not a big plane, no. It's quite a small plane. Even the big planes in those days were small. We thought Lancaster was a big airplane. It's amazing when you see how small they really are.

David: Were you flying them in the north too?

Peter: No. That was just a war. . . we'd have flown them if we could have gotten them but there weren't any of them around.

#101 David: Okay so sorry I interrupted you, you were saying that was the only drill, the Boyles Brothers. . .

Peter: Oh, the Boyles Brothers, yes, it was the only drill we could get in there. We mounted it on a sled and hauled it around and tried to drill holes with it but this loose sand . . . So we ended up with hand augers and we were able to hand auger a hole down to about 40 feet which takes some doing. We eventually got a couple of local guys, a couple of Indians, Slavey Indians, they called themselves the Slavey Drilling Company, they were a great bunch. And they caught on very quickly. It took a great deal of patience. You'd get the hand auger thing, the auger bit full of sand and you'd have to get it up out of the hole without hitting the sides of the hole otherwise the sand would all drop out again. It took quite a bit of skill and we finally developed a technique. But we could get down about 40 feet was all we could do. And then you'd only get one shot away and then that was the end. But there was an old well that had been drilled there and we loaded. . . .the surface of this well had opened up, the plugs deeper down were still there but we had a hole there so we put dynamite in that one and fired it off. Not a very smart idea in hindsight but anyway, we did get a reflection on that record and that was the day Warren came out to see how we were doing. And there we were with a reflection so it looked like we were

going to get results. Another two weeks of trying, we could never match it. It was just a complete freak. It was quite interesting. What was even more interesting, years later, Shell had bought the company. . it's too bad I can't remember their name, and had looked over all the experiments it had done and one of the Shell geophysicists, Arnie Junger had commented that he thought I'd done everything that could be done. So I was very pleased, I had a great deal of respect for Arnie. In fact, I think he was one of the guys that did the interpretation at Jumping Pound.

#127 David: But there was nothing to find at Fort Simpson?

Peter: Well, we just couldn't get results. We couldn't get reflections back. Seismic is all very well to shoot the powder off and listen to the sound waves coming back but when they don't come back you just can't map the horizons at depth so. . . . .

David: So it was all getting lost in the sand?

Peter: Yes. The sand was just eating up all the energy. We couldn't get through. And shooting on the island was not a very good idea. That job lasted a whole month. Then starvation set in just about except for Shell and Shell kept us alive shooting velocity surveys.

David: So Shell was willing to hire you back on that. . . ?

Peter: As a contractor yes.

David: So you weren't blacklisted because you had quit?

Peter: No, I was told that they would never hire me back to work for them but that was standard. But no, they hired Ted Rozsa's crew, they hired our crew to shoot velocity surveys. And that kept us alive, they shot velocity surveys all over Saskatchewan and Alberta. We were good at it. I had done some for Shell and Shell was meticulous in the way they did it and they were very good teachers.

#142 David: So velocity surveying, what does it teach you?

Peter: What you do is, when you're doing an ordinary seismic survey the only thing you can measure is the time it takes for the sound wave to go down to a reflecting horizon and come back. So all you have is the time, so to convert that time to depth to that horizon you have to have an idea of the velocity of sound in the rocks. So once you've drilled a well, then if you put a geophone down in the well and shoot the dynamite off at the surface then you can get a feel for the velocity, or you can measure the velocity from the surface down to, say, the top of the Mississippian or whatever formation. So you know how long it takes for the sound to go down to that formation so you can convert your . . . You can identify the reflections you're getting. You've got a reflection that comes in at one second, well you know it takes half a second to go down and half a second to come back and so you look at your velocity survey and it takes half a second to go down to this formation so that must be the formation that's giving you that reflection. So velocity surveys are quite important.

#154 David: And these have to be done regionally because things . . .

Peter: Oh yes, it changes, the rocks change from place to place. Even along the jumping Pound field, the velocity changed laterally as you went along the field.

David: Because?

Peter: Well, partly because the geology, the thrust rocks were thrust up above the Mississippian in such a jumble that as you progressed the kind of rocks above the Mississippian which is where the gas was, the kind of rocks changed as you went laterally along the field so the velocity would change. So your interpretation as to how deep you had to drill would change. And we did velocity surveys in every well in that field trying to forecast how deep the next one would have to be. We got into a jackpot with the engineers one time. At Shell there was quite a bit of rivalry between departments. Drilling wouldn't talk to Exploration for instance, Engineers wouldn't talk to Exploration. It was silly, it was so bad that it was costing the company a lot of money and they should have stopped it but I don't think they knew how. I was the only one in Exploration that knew all the people in drilling because they'd moved all the drillers from New Brunswick out as well. So I knew them all so I could talk to them but nobody else could. After I left Shell I'd get a call from the Exploration Department saying they wanted to shoot a survey in such and such a well but drilling won't tell us when it's going to be finished. So I'd call up somebody in the Drilling Department and they'd me and then I'd tell Exploration when their well was going to be finished. It was ridiculous. But these engineers one time, they decided that anybody can interpret a seismic section. Once we'd drawn all these lines and so on, it didn't take any brains to figure out how deep the Mississippian was. So they snuck into the office one evening and got all our cross sections out and maps and they did the prognosis for the next well in the field, in Jumping Pound. But we discovered this later on, that this is what they'd done. We were a bit upset about this but we made our own prognosis and there was 500 feet difference in the prognoses but of course, our prognosis, we had adjusted the information for this lateral change in velocity. And also we had made a mistake. We had skipped a loop in our identifying the reflections, which we've never let on to a human being since. And I think when the well was drilled the engineers were 500 feet off in their estimate and we were something like 40 or 50 feet off in ours, which in the foothills is ridiculously close. You can't expect to be that close. Management then descended on the engineers and "thou shalt not ever do that again". It was quite funny. We'd have been 250 feet off if we hadn't made a mistake. The mistake compensated for the velocity change.

#194 David: Oh, it helped you instead of. . . .

Peter: It helped us yes. The error was in the right direction.

David: So what was Fort Simpson like as a town? I've been there and just really interested to know what it was like in '52.

Peter: It was a very small town. There was an experimental farm there, John and Judy and I can never remember their last names. John was the agriculturalist, he had a farm there and a farm at Yellowknife. Marvelous couple. He bailed me out. I was the only scotch drinker on the crew until we got to Fort Simpson and then everybody else decided they wanted to drink scotch. So my scotch supply got obliterated, John helped me out there and also with pipe tobacco. There was a Mounted Police base there, a corporal and a couple of constables. There was a hospital run by nuns from Belgium. I spoke French with them

and they were absolutely transported. They hadn't heard French since they'd left Belgium. And there was a trading post, a Hudson Bay post and a private post. It was quite small.

David: Where did you guys stay?

Peter: We stayed in a house. Max Wopenford had a house there, a big house. Petcal was the name of the company. They had a house there, a big house and the whole crew stayed in the house. Vonnie and Max and they had a child, who's now must be 50 years old just about. He was four years old at the time.

David: He'd be fifty now.

Peter: Yes. He was a pincher as I recall. He'd come along and pinch people. I can remember pinching him back on one occasion, much to his parents delight. But we all lived in that big house. Most of the crew bunked upstairs, a couple of us had bedrooms downstairs.

#222 David: Now the airport was off the island?

Peter: It was off the island.

David: Because there is a strip on the island now.

Peter: Is there a strip on the island? Ah, interesting.

David: You say you had to drive off?

Peter: You had to drive across the Snye. That was my first encountering that term Snye.

David: And the Hudson's Bay Company store, what do you remember of it?

Peter: I don't remember anything of it at all. What I do remember was the beadwork gloves and the sun bleached cariboo hide, white, white gloves and things. They were just gorgeous. And I didn't buy any. Some of the other fellows did. I bought a set of. . . I needed a set of moccasins and duffles and I bought a set of those and it's been a family joke ever since. I've accused Shirley of throwing them out because they disappeared. But I'd worn them for many years. They were getting pretty smelly, they were untanned moose hide.

David: Do you remember any of the people that lived in that town? Did you ever run into Albert Faley? He was an old trapper.

Peter: I probably did because we were there a whole month and it was a small community and we met everybody. We were on a first name basis, John and Judy are the only ones I can remember and Max and Vonnie Wopenford. I remember one day, our shooter was German and he had no experience with coal oil lamps. And he loved to retire to his bunk and read, he was uncomfortable socializing, in English in particular but I think he was a very shy person anyway. And he would retire with his coal oil lamp upstairs in the attic and one day one of the fellows spotted him refueling his lamp and he was burning Naphtha in this coal oil lamp. Why it hadn't exploded I'll never know. We just couldn't believe it. Somebody had said it was lamp oil and of course it was for a Coleman lamp, under pressure and so on but in an ordinary wick lamp. It burned with a nice flame, he had lots of light.

#252 David: I'll bet it did, real bright.

Peter: But why it hadn't exploded. . . and had it exploded it would have burned the whole house down and taken several people with it probably but it didn't happen. It was close.

David: So did you fly back from Simpson to Calgary?

Peter: Yes. Well actually no. We drove a couple of trucks up to Hay River and flew some of the stuff from Hay River into Simpson and when we left we flew stuff back out to Hay River. In fact, we all flew out to Hay River. George came up with a car and then the whole crew drove back from Hay River down the Mackenzie Highway. At that time, there had been a rabies epidemic in the north and that was something we were quite worried about too up there. We kept a gun out in the field all the time because these animals were just unbelievably tame, the rabid ones would just come right up to you.

#264 David: What kind of animals?

Peter: Wolves, fox, rabbits. The Mackenzie Highway was littered with corpses. They would attack trucks and so on. Truck drivers wouldn't dare stop if you got a flat. You just drove on that flat until you got to a community. Unless you had somebody with a gun that could stand guard. George Garbutt tells the story, he drove up and when he was driving up he saw this wolf standing beside the road and so he stopped. The wolf just stood there and George got out of the car and sort of walked over to him and said, bang, bang and the wolf just looked at him. George thought, this is very strange but the wolf didn't back down. George walked a little closer and then decided, maybe he shouldn't get too close. He hadn't heard about the rabies. So he went stark white when he heard why the wolf was standing there. He almost for sure was rabid and George was that close. He got back in the car and drove off and then got the explanation for what was with the wolf. But the road was just littered with corpses when we drove down. We drove all the way to. . . that was my first experience with High Prairie and High Prairie in those days was the end of the bloody world. There was an article in Macleans magazine at that time, that had come out, about people reminiscing about their various hometowns and so on. There was a writer, something Allen, Ralph Allen was it, he'd been born and brought up int he Peace River country and he wrote on northern Alberta. And the first line, and I've never forgotten it in this article in Macleans, after eating the worst meal ever prepared by human hands since the invention of fire, in High Prairie, Alberta. That was true, and that was true years later when I went back for the second time. I lived on grilled cheese sandwiches there for a couple of weeks. It was about the only safe thing to eat. Outside High Prairie there's a big sign saying, where culture and agriculture meet, welcome to high Prairie. Boy I don't know what kind of culture they had in mind. But we walked into the hotel there, Sterling Hotel I think it was called. I walked in and just got one whiff of it and turned and walked out and the rest of the crew followed in and sort of gave me a hard time over being chicken and easily deterred and they didn't last more than about a minute in there before they decided, maybe we should drive on and go someplace else to stay. We ended up down in Slave Lake instead. Oh it was a dreadful hole. I guess it's improved immensely, I hope it's improved.

#305 David: So then you got back down to Calgary?

Peter: Got down to Calgary and then got into the business of shooting velocity surveys. We shot the occasional little project but that depression lasted quite awhile. When about a year or so later people started hiring crews again, we got a job with Trinidad Leaseholds working out of Grande Prairie. A big project down, oh around the Torrens River and the Cutbank.

The Torrens, it's a mapping system or some such thing, it has to do with cartography, anyway they gave this river the name. Two Lakes area, wild as all get out. There had been no crews down there at all. There was a road through there to a well site that was being drilled on and off in the foothills. It had been located by Charlie Stelck, a professor of geology at the University of Alberta who was quite famous for saying he'd drink all the oil found in the Devonian. Something I think he wished he'd never said. But he had located this well and these poor sods were trying to drill and had no idea how to drill in the foothills. The well was drilled on a surface feature which had absolutely no bearing on what was going on in the sub-surface anyway. It took him a couple of years to drill this well. We used to listen to their reports coming in on the radio. Day after day they would report losing hole, the blackstone shale, I think it was, that was caving in on them. And they were having a terrible time. That was the only road down there. The rest of the project had no roads at all and no maps. We had no maps for this thing so we went down and found the base line and then just took off at an angle and just put a straight road right through it. Right up over and down some of the most humongous hills.

#338 David: And what area is this?

Peter: This was about 100 miles southwest of Grande Prairie. It was across the Wapiti River. The west end of it was foothills, thrust faulting and all the rest of it. We had, at the far west end of it, we had mountain goats. We actually used the helicopter for scouting and actually spent a few minutes looking for mountain goats on one occasion. We had maps the second year but . . . .

David: So what years was this?

Peter: This would be '53 I guess. The winter of '53-'54 was the first winter we went in there. And Leo Fortier, Fortier and Northey built our camp, it was one of the first camps they had built up there. In those days, camps were pretty primitive. Imperial's camps, for instance, had no toilet facilities at all, you used the great outdoors. And that went on for quite a few years. It led to I imagine, quite a few serious cases of constipation. 60 odd below zero, you just don't go outside unless you're in dire straits. There was no way I was going to have that in my camp. So I ordered the first heated biffy in. . .I'll never forget it, old Leo Fortier said he'd hide it in the bill so that the client wouldn't know that they had gone the expense of giving this crew a heated toilet facility. Not only was it heated, it had a light in it too. This was the ultimate in decadence. It cost $185 and the bugger didn't hide it in the bill and the client was pretty upset. You can imagine it. However, nobody objected, including the client, objected to using the heated biffy.

#375 David: Who was the client?

Peter: The client was Trinidad Leaseholds. They changed their name to something else later on and I think Texaco ended up owning them, but in these days it was Trinidad Leaseholds and Hans Suter was their boss. Great fellow, tremendous guy. Howard Myers was the geophysical consultant for them. He was less than great but you shouldn't speak ill of the dead. However, Howard was one of our problems. It was rugged country. We put roads where we could the first year and did some helicopter flying to try to figure out where to

put the roads in. It was a tremendous tool for scouting in that kind of country. But they wanted to try year round work in there and that's when. . . what's his name, it'll come. . .invented the Northking All-Terrain Vehicle.

David: Nodwell.

Peter: Nodwell, Bruce Nodwell. We bought some of the original Northkings. There were three. . . Highland bought a couple, National Geophysical bought a couple and we bought four as I recall. Something like that. Why we bought four, we thought we'd outfit the whole crew with these Northkings, completely untried. We could have used Bombardiers for part of the operation but the Bombardiers, even in those days, broke down quite regularly and were very high maintenance cost. So we gambled on these Northkings. They had a steering system like a LeTourneau, hydraulic rams. It was a tractor unit and a trailer and the steering was done by these hydraulic rams between the trailer and the tractor. Massive great things, they could walk over just about anything. The wheels were on big walking beams and the tires were about 4 feet at least or bigger than that in diameter. We went out in October to Chinook Ridge to a tent campsite because of the fact that we'd gone before freeze up. We couldn't move camps or anything into this location so we hired people with horses and so on to go out there and set up a tent camp. And then we put the crew in these Northkings and sent them out to this place. We made a number of discoveries en route, one of them was that the winch cables had been wound backwards so that every time they tried to winch themselves up a hill they broke the cables. The cat that they had with them slid into the fuel tank and the blade sliced the fuel tank and spilled all the fuel out on the ground. And then it snowed three feet while the crew was struggling down this road to this camp site. It was supposed to take maybe 3 or 4 hours to get there and they'd only taken a light lunch from the York Hotel. And the York Hotel was not known for it's food in those days in Grande Prairie. It was better know for the owners cache of booze down in the carpenters shop but that's another story. That's where Shirley learned to drink scotch. This crew. . .I was in town waiting to here from them. They had a radio with them and so on and I had a bunch of work to do so I stayed in town, I didn't ride out in the Northkings. Day after day and we didn't hear from them and didn't hear from them. Finally I hired a helicopter to go and look for them and found them all strung out. By this time they had been rescued by a small Indian tribe, Settler's Flats, and these Indians were just absolutely fabulous. They gave them all the food they had. Because the fellows were shooting Whiskey Jacks and eating Whiskey Jacks. With the exception of one fellow who had a very sensitive stomach. The boys told me about it afterwards. When they'd cook these Whiskey Jacks and then they began to sing this song, poor little robin. And this one guy wouldn't eat the Whiskey Jacks as a result of it. However the Indians rescued them and just gave them everything, moose meat, flour, the whole bit. So after we got into camp I took the helicopter over to the Indian encampment and it was really quite fun to land there because in those days, they had never seen a thing like that at all. Of course, all the adults were able to remain totally impassive but the little kids, they were excited. So I talked with them and thanked them of course, very much for what they had done and asked them what could we bring them to repay. We would replace all the food and so on, what did they need for the winter. And I just filled that helicopter up twice and hauled bunches of

stuff out there. Because they had literally rescued us from disaster. There are some old photographs of that stuff, that equipment in the snow. Boy it looked cold and miserable.

#473 David: So what happened to the Northkings?

Peter: We tried to keep them going. They had a 3 ton rear end on this massive vehicle, they were just. . . well, they weren't engineered at all. Bruce was a great inventor but he wasn't an engineer so he made a few mistakes like that. I thought with a little better engineering it would have been a great piece of equipment because it could go anywhere. Mind you we were able to stick it and we managed to flip it over on it's head a couple of times. And these are big pieces of equipment. It's quite a sight to see one of those upside down with the 8 wheels floating in the air. But it could be done. Whenever the rear ends went out, it was a couple of days work to replace them. And the rear end went out when we were in this tent camp. And it was a 19 hour trip on the back of a D-7 cat, that's how I got out there eventually. I flew out on the helicopter and then back into town to get my gear and then all the equipment with an athey wagon and a D-9 and it was 17 hours I guess it was sitting on the back of this D-9 cat. You can fall asleep on the back of a D-9 cat . . .was it a D-9, no it was a D-7. But you can fall asleep riding on the back of a caterpillar tractor I've discovered.

David: After 8 or 10 hours?

Peter: After 8 or 10 hours yes. And along towards 17 hours, it's no trouble at all. So we needed a replacement for this rear end and George was in Grande Prairie so he flew it out on the plane and dropped the rear end to us. Well actually it wasn't the rear end we needed, it was jacks to jack this equipment up, we didn't have. That's right. Because they were heavy as hell I remember now. It wasn't the rear end we had to drop, we had that, it was the jacks. And the first jack went into the muskeg and just buried itself because you can drop from 1,000 feet in an airplane. And the second one he dropped a little lower and his aim was much better. It hit the walking beam between the recording truck and the engine on the recording unit. It would have destroyed either if it had been another foot in either direction. But that jack we recovered and were able to use. It nearly wiped us out right there. It was quite an operation. We were doing interpretation and so on, plotting and drafting and everything in the tent. And then the weather cleared up and it got quite beautiful. It was really quite nice.

#528 David: So you got some seismic done?

Peter: Oh yes. We got a fair amount of work done. But it was a continual battle to keep those pieces of equipment going. But the previous year when we were using conventional trucks on frozen ground, we got around all right but the road in was so bad that the Imperial Oil dealer finally refused to come in with his tanker truck to deliver. We finally had to build another road in so that our suppliers would come in. They just refused to write off their equipment that way.

David: So how far in was it?

Peter: About 100 miles. Depending on where you were. It ranged from 80 miles straight south of Grande Prairie to maybe 100 miles over to the Two Lakes area. And then we had

cabins built down there at Two Lakes for us, right on the side of the lake. This was a big deal. One of the local fellows in Grande Prairie cooked up this deal with the client to build these log cabins down there instead of moving a camp in, the cost of moving a camp in, he would build these log cabins and the crew could live in these log cabins. So they built these bloody cabins. I remember I had the whole crew out east along the Cutbank River and we drove over to have a look at these cabins before moving the crew over. And the crew that had been building the cabins, I don't know what they did but they didn't keep the stove clean in the cookhouse and there was an inch of fat all over the top of this stove. It was unbelievably dirty. And I took one look at it and I said, you know what's going to happen, the. . . ..

End of tape.

Tape 2 Side 1

David: So start with, the stove was covered in grease.

Peter: Yes, the stove was covered in grease and I took one look at that and decided well, the cook would quit if he saw it so we spent several hours cleaning that bloody stove. What we didn't know was that these log cabins, they looked pretty but they were rather porous to the air. And when we moved the crew in, the temperature dropped down to something like 65 below zero and it never got above freezing in these cabins. Fellows were sleeping in their sleeping bags with their parkas on. It was unbelievable. We had a lot of tarpaper left over and we wrapped these buildings in tarpaper and then just cut enough room so you could get in and out the door. Covered the window, everything with tarpaper and it still was unbelievably cold. The only reason the crew didn't walk out was that it was 105 miles to Grande Prairie, they would have frozen to death. So I moved the. . . .we had a portable camp in the other part of the prospect and I moved the cookhouse and the utility trailer over so that fellows could get in and have a hot shower and so on. And there would be some decent place to work. I got a lot of static for that too, but that was all right. It was the only was you could survive. Of course, under circumstances like that, the client made damn sure they never came out to the crew. That chinook country. One winter, at the height of winter we had a chinook hit, the temperature rocketed up, it was 45 degrees, something like that in February, water running everywhere. We actually had the recording truck was stuck out in the field, this hit so fast they couldn't get back to camp. They spent the night in the field and then walked back in the next morning. Radio communication went down, there was sun spot thing I guess. We just hung out for about 3 weeks, couldn't move. Fortunately nobody got sick or anything but you just could not get in or out, everything was just a total quagmire. And it never got that warm in Grande Prairie so people had a little difficulty believing it. Until one day the cook came in, he'd caught a mosquito, a large mosquito in the cook house and I mounted it on a piece of cardboard

and later on sent it to Calgary, 'this was trapped in. . . .'.

#028 David: So how long did you do this consulting?

Peter: Well, this was contracting, seismic contracting. We lasted 2 years and 9 months before finally we went bankrupt. And the Northkings pretty well bankrupted us. They were expensive and we had mortgaged our souls more or less, to buy them. We had a contract mind you, but the client disowned the contract to pay for the Northkings because they didn't work. We should have sued them actually. But do you sue your first good customer? In hindsight yes, you do, if that's what the customer does to you but at that time we tried to make it work and eventually it didn't so we ended up going bankrupt.

David: Were you a partner in this company?

Peter: Yes, I was a partner.

David: So you went bankrupt too along with the rest.

Peter: Well, fortunately it was a limited liability company but we were able to pay off all the payroll and so on except for yourselves so we lost a bit of money.

David: Did you lose 2 years and 9 months worth of income?

Peter: Oh no, we were able to pay ourselves adequately. I paid income tax on a bunch of income I never got. That cuts no ice with the income tax department, well that's too bad bud, you don't have a credit if you declared it as income. It was a loan to the company and it was down the tube. It's funny, I guess the optimism of youth. At this point we had two sons and weren't particularly worried. There were other jobs to be had and I just went right from Discovery to Nance Exploration.

#050 David: And what kind of a company was Nance?

Peter: That was a geophysical contractor as well. They had worked for Shell and I had supervised them when I was with Shell, so I knew them all and they were interested in my going to work for them as an interpretation supervisor. So as soon as we managed to go bankrupt, John Fuller gave me a call so I just went from one to the other. Nance was a small contractor but a very active one. We had contracts with Gulf and Imperial Oil that were just year in, year out for six years, seven years, eight years. It was unbelievable. That sort of thing doesn't happen anymore. Hasn't happened for many decades but in those days they hired crews and if they liked them, you worked in southern Saskatchewan, southern Alberta in the summertime and moved up to the north in the winter and when that started to melt you had a prospect to work on in the south and they moved you out. There was perhaps a little time off at road ban, when the roads were banned and away you went.

#066 David: So how long were you at Nance?

Peter: I was with Nance and it's various descendants for about 19 years. I was in contracting for 19 years, not with Nance all the time. Let's see 19 years, less the 2 years and 9 months it took us to go bankrupt so I was contracting for 19 years. It would be about 16 years or so with Nance. That whole geophysical environment in those days, they were enterprising, they were intelligent, smart. There was a number of companies, there was Nance, there

was ECI with Norm Christie, Harold Farney's company was going. These were all run by very bright forward looking people. Century Geophysical was here at the time too. They were good times, good people. I guess I'd been with Nance a couple of years when the possibility of recording on analogue tape came up and the industry here switched over to recording on analogue tape very quickly. The whole Canadian geophysical industry was recording on analogue tape at a time when just a little over half the industry in the U.S. was.

#083 David: Why?

Peter: They were more conservative, they were slower to pick it up. They invented it, all the equipment and so on but we were much quicker to pick it up here in Canada. And the original analogue playback equipment to make cross sections and so on found a ready market here in Canada before it did in the States.

David: Because it was busier here, more money, I'm just trying to understand that?

Peter I think the people were more enterprising, more willing to try something new. And the majors hadn't. . .they were looking at it, they were doing it a bit in the States, but they weren't allowing their branch offices to do it. Their labs were working on these things, Texaco, Shell, Mobil and so on, Esso. We had an opportunity. . .we had very good contacts with Esso and we had an opportunity to buy what they called a Carter playback machine. Carter Oil Company had invented a pulse width modulated analogue tape system. It was an excellent recording system. It's similar to FM except they were pulse width modulated instead of frequency modulated and the tapes were. . . you could almost totally destroy the tapes and still recover the signal from them. And the equipment was rugged so you could use it in very poor, rough circumstances. It was good equipment. And they built a play back machine and they decided that they would sell it commercially, so we set up a company called Canadian Magnetic Reduction. Nance was the prime mover in it, John Fuller and myself. We gathered together a couple of consulting firms and 8 seismic contractors and we created this company and bought this piece of equipment and went on to get into the data processing full time. And that grew like topsy. As Interpretation Supervisor for Nance, I looked after Canadian Magnetic in my spare time and that gradually took over and that then became full time and I was out running it.

#110 David: So that's CMR, right?

Peter: Yes, that was CMR.

David: So tell me more, you were doing this for a whole group of companies?

Peter: We did it for the industry. This group of companies were the shareholders and CMR was almost arms length from the shareholders. Sure, they were the owners and I worked for one of the owners and then we finally set up CMR completely as a separate company. They still maintained the ownership but there was no data flow between . . . and it all depended on the client where the stuff was processed. Because eventually we got some competition. Ted Rozsa got a few pieces of equipment and was competition.

David: But CMR became your prime job then?

Peter: Became my prime job yes.

#119 David: And what did you do there, manager?

Peter: I was the manager of CMR. It was exciting times. We started off with this Carter playback machine. It was an interesting machine. You had to lie to it to get it to do things that it wasn't designed to do and that became a fine art. We had some good people working on it, guys like Bill Mackin and Jim Grover. They were the first people that started to work on that equipment. It was an interesting experience, the oil companies are kind of strange, they live in a kind of isolated life all to themselves. They think they're the only people that have ever invented anything. At this time, Esso had started recording with a variable density signal instead of the customary wiggle trace they used this variable density signal and were making very useful cross sections with this variable density signal and they thought this was the latest thing that you could possibly have. Notwithstanding the fact that Gulf had recorded with variable density records back in 1936 I think, something like that. But Imperial and Esso thought that this was just incredible. So this Carter play back machine, the drum that you recorded the wiggle traces on, the corrected traces so that you could make the cross section, you recorded on a piece of cross section paper with a pen that wrote in ink. But this drum that you did this on was in a light proof box and we looked on this thing and wondered, why is this thing in a light proof box. Obviously they were doing some kind of photographic sections. But they had taken all the equipment out of the machine when they sold it because they wanted to retain this as a secret process, the stuff that had been invented 20 years before by Gulf. And you could buy these light tubes to create these things at any really good radio supply store, you could get these variable density tubes. So we looked at this for quite a while and the engineer from Electrotec, his name escapes me right now, clued me in as to what was actually being done, was being made inside these boxes. So we set to work and built ourselves a little camera and made variable density cross sections. And I took them. . . we were doing a lot of work for Imperial Oil at this time, Imperial didn't have their own machine, so we did all their cross sections. Except for stuff west of the 5th meridian which was where you started getting into the foothills and steep dip and this was where this variable density was very useful. And we weren't processing it, they were sending that down south to have these variable density sections created for them. And their staff was told that if they were caught in the same room with a non-Imperial person and a variable density section on a desk, they'd get fired. Well, you can imagine their consternation when I walked into their office with a variable density section in my hand. They really didn't know what to do. They realized very quickly that I had just embarrassed the hell out of then. So I just rolled it up and said, forget it, we won't pursue this line of thought. Shell was like that too with some of their so-called discoveries, Mobil the same way. You can't keep secrets very long in this world.

#163 David: So just by figuring out what they were doing you created your own machine?

Peter: We created our own and built it, expanded their machine, actually rebuilt it back to what they had originally built but had taken out of the thing. And then we just went on from

there. As other people Southwestern Industrial Electronics, SIE, built play back machines and we bought virtually the first ones that they built. In fact, many trips to Houston, sitting in with their designers and so on, talking to them about equipment and what we wanted to see in this equipment. There were some interesting challenges in presentation processes and very fancy cameras were being developed. They weren't available for sale and we actually built our own camera here to create a mixture of variable area and wiggle trace and this sort of stuff which has become almost standard in the industry. But we had an English fellow, Jim Grover, working for us who was just a master at that. His ingenuity knew no bounds, he built these cameras for us, just incredible.

#180 David: So what are these cameras doing?

Peter: What you did was you took the signal off the tape, you ran it through some very elaborate equipment to correct it in time, stretch it, shrink it, do all sorts of things to put it into real space so that the cross section that came out had a direct relationship to the sub-surface, to the ground. Because the signal has all sorts of strange warps in it, it gets delayed by surface weathering and elevation and the fact that if you're shooting a hole here and the signal goes down and comes up, it doesn't have much what we call step-up but if your receiver is over here then that's a much longer path. So you have to correct for that extra path, so you have to suck up the time, that reflection so it comes up at the same time.

David: But this is still in all the processing equipment, and the camera gives you. . .?

Peter: The camera gives you the output onto a film.

David: On to paper?

Peter: On to photographic paper or onto a film.

#194 David: So you have a visual record, something you can read, something you can look at?

Peter: That's right and if you've corrected it properly it shows you the shape of the sub-surface. Visually we all started off in the business with just wiggle traces, just a galvanometer with a mirror on it shining a light on the photographic paper. And then people blacked in under the peaks so that the peaks would line up if they did line up, you could see them lining up. Visually so you could follow the reflections better, especially through noise and so on, if you've got a lot noise on there sometimes it was hard to pick out the reflections. So this variable density approach was very similar, where for the peaks it was black for instance, and for the troughs it was white and shades of grey in between. And that created something actually that your eye could follow the reflections more. So we did a lot of this. Before the digital revolution we had probably the largest analogue data processing centre in the world here. And we were doing things that nobody could do anywhere else. We had visitors come from Saudi Arabia to have a look at what we were up to and that sort of stuff. So it was very exciting, very interesting. We set up a branch office in New York and one in Australia.

#213 David: Really, a big Canadian international company.

Peter: Yes, that's right. We set up AMR in New York and PMR in Australia.

David: So AMR would be. . .?

Peter: American Magnetic Reduction.
David: And P?
Peter: Pacific Magnetic Reduction.
David: Any other adventures in this trade?
Peter: We got a phone call one time from Imperial Oil. There was some noise in the background and it was Carl Chapman, who was Chief Geophysicist at Imperial and I didn't catch who it was and I figured I'd catch on later on. He proceeded to outline a proposal that he wanted us to set up an organization to take old seismic records and convert them to tape, transcribe them to tape and it was done on a machine called a transcorder and Esso had designed machines of their own to do it onto their particular kind of tape. So they would provide us with the machines, all we had to do was provide the space and the people to operate the machines. And he figured there was enough stuff to keep us going for several years. Sothis was a license to make money and I wasn't sure who I was talking to, I wasn't even sure what company it was. So finally I asked what was obviously an idiot question but I asked what kind of tape they wanted it transcribed to. And when Carl said, well Carter tape of course, then I knew who the hell I was talking to. Carl, this is too important to talk about on the telephone, I'll come right down and I jumped into my car. So we set up that company, we had 26 employees and it ran 24 hours a day, took Christmas day off, it was the only day off in the year and it ran for several years. I've forgotten how long now.

#240 David: And this was just a straight moving the data from one system to another?
Peter: That's right. Taking the information off the photographic records and transcribing it to tape so they could then make the cross sections.
David: So how did you pick up from the photographic record?
Peter: It was done with a light source that shone onto the photographic record. And you moved the light by changing a rheostat, moving rheostat as the record moved in front of the operator. So the record moved or the light source moved, either one or the other. In one case I know, the record was on a drum and it moved, that was the transcorder. I think it was . . . was the Carter machine. . .did the light. . . I've forgotten now, no I think maybe the tape moved, I've forgotten. Anyway one or the other moved. The light source moved along the record or the record moved under the light source. And as the record moved, the light spot was on the wiggle trace. The operator then, as it came to a peak, the operator would turn the rheostat and the light would follow the peak and at the same time the operator was sending a signal to the tape. Operators got very good at it.

#255 David: They were tracing.
Peter: Yes, they were tracing, with a light spot, yes. Deadly dull job. It didn't require any experience whatsoever. And when word got around. . . it was quite funny this one day, word got around of course, the community, here was a great job for people who had absolutely no experience doing anything. It was a good job, all you had to be able to do. . well you had to be able to write, you had to write down the number of the shot point on the tape and that was all. One day this great pink Cadillac pulled up in front of the

building and these two gorgeous women got out of this thing and sashayed in. They were applying for a job. The figured a day time job doing this would be great. Their main source of income came at night. . . . it was spectacular, this big pink Cadillac convertible to start off with plus these two gorgeous creatures coming into this building. Everybody was just agog over them. When they realized they were going to have to work shifts that put the end to it immediately. There was great excitement there for awhile. We had a good time. We were pretty well leaders until the digital revolution came along. We had some competition but we were pretty well established. When digital arrived I think it was a lack of nerve primarily on the part of management. Well on the part of, not management, I was the manager, the shareholders decided to get out of the business. The ownership. . . Independent Exploration from Houston. . . in the meantime as an aside, we moved the operation from New York to Houston. At first we were reluctant to set up a data processing centre in Houston, which is the heart of the American oil business and these Canadian going down and challenging them in their own home ground. So we thought well, there was an international market, most of the oil companies had their international headquarters in New York. So we would set up a data centre there and go after that business. Well as it turned out New York was not a place where any real work was done. The supervisors lived there and they made the rules so to speak but they didn't do the work. They charged off all around the world doing things. Mobil, Stanvac. .Mobil and Sacony. . .let's see, Stanvac was Standard Oil in New Jersey and Mobil Oil. . .Sacony Vacuum. . so they had a company called Stanvac and they had a headquarters there and they wanted to get out of the data processing business, so they sold us their data processing equipment. Six months before they got out of the exploration business and we took their operator and their equipment and did all their work for six months which is a great way to start up. So that's how we started up the company there. But after that was over we sporadically worked for them and our best customer turned out to be Aramco from Saudi Arabia and the reason they were our best customer in that office was that their storage centre was only about an hour's drive away. We would drive over and pick up all the information in their storage area and process the stuff and send the sections to Saudi Arabia to Dharan. They became quite good customers for awhile, they were reprocessing old data. I can remember we took the data from that one humongous big field that they had, I've forgotten the name of it now. It was something like 80 miles long and they wanted it on a cross section that was big enough to hang on one office wall and that was the assignment. We had to shrink that data down so they could see the whole length of that field in one wall. It was quite an interesting assignment.

#322 David: So did you live down in New York?

Peter: No I made quite a few trips down there but we hired an old Stanvac hand to manage that office. But that in a way was a mistake because he'd never been a contractor and he really wasn't inclined to go making calls on clients. I drove him crazy one trip down there, we hauled him into New York, we set up in a little town, Danbury I guess it was in Connecticut, set it up there, it was an hour or so out of New York, just upstate from Greenwich. It was close to everything and all the people lived out away from New York

City anyway. But the offices were all in there. He had a very intense exposure to calling on clients one week. We got in there, we would line up 2 calls, one in the morning and one in the afternoon and if we got out early we would go and do calls on spec in between. It was quite an introduction to him. But we had one client that insisted that we use $5 postage stamps and mail him the data. He was a stamp collector. The first time we had stuff to mail to him, our manager tried to get $5 stamps in Danbury and the post office there didn't have any so he didn't use it. I contacted the client and said, what did you think of the cross sections because I had showed him a variety of presentations and asked him to pick and his only comment was, you didn't put $5 stamps on. His priorities were quite different from ours. So I went into New York in the Madison Ave. post office and asked him how many $5 stamps he had. I don't know what he thought, he damned near summoned the guards I think at that point. It turned out he had 16 so I bought all 16 and hauled them back out to Danbury and gave them to your guy and said, here use these and everything was fine after that. He had no comment about the quality of the work but he got his $5 stamps.

#356 David: So you were about to tell me about the move to Texas.

Peter: Oh yes. Well by this time that New York was not going to be the place to have a data processing centre and we had gotten to know the scene in Houston a lot better and really there was no competition of any great . . . there was no dangerous competition in Houston. There were a few data processors in the southern States but they were spread all over the place. There were some down in San Antonio and some in Shreveport and this sort of thing. In Houston the only one that was any possible competition was Independent Exploration and I didn't really think much of their operation. So we moved the operation to Houston and just as we were doing that Independent made the move on us and bought CMR and half a dozen of the small contractors here, Nance, and ECI, GIC, Gordie Hess' company. So we suddenly became part of Independent Exploration.

#376 David: What's Gordie Hess' company's name?

Peter: Geophysical Associates. Now Gordie died a little while ago so we've missed him unfortunately. Lex Van Dyke worked for him, Lex Van Dyke might be a good source and he's still around in town.

David: What's his first name?

Peter: I guess it's Alexander, he goes by Lex. Van Dyke.

David: So what was the year that this purchase went through?

Peter: Around '65 I guess, give or take. And the reason I think the people decided to get out of the business was that it was becoming apparent that digital recording and digital processing were going to take over and just the costs were going to be staggering. The field crews were all going to have to be equipped with this new recording equipment and you were going to have to buy computers and so on for data processing. I think that just panicked the fellows. And they were all getting along, the principal owners were getting along anyway so they were probably thinking of retiring. Not that they retired very far, they actually became part of the operation, several of them did. Norm Christie and Bob

Boulware and so on. National Geophysical was bought shortly after that time by Independent. Bob Boulware was running National's office here in town and then came in as. . . Christie was President and Bob was a Vice-President and I was a Vice-President. Shortly after Independent bought us, I don't think we really had time to get Independent names on everything, Teledyne bought Independent. Teledyne was a massive conglomerate created by a physicist as I recall, a Ph.D. from MIT of some sort and got into all sorts of technical fields. Still exists I guess. So they bought the whole shmeer and we became Teledyne.

#418 David: So when did you get out of this company?

Peter: '71. I didn't want to change the name from CMR. For one thing, our clients at that point were pretty well all Canadian companies and that's how they knew us. And to really draw attention to the fact that we were now an American company I thought was not a productive thing to do. Needless to say, the American side of the organization couldn't see that at all and finally forced us to change the name. I guess the final denouement came when the President from the States to the office here. And he made the call himself, for some reason his secretary must have been away and we had our switchboard answering CMR, Teledyne. That didn't go over too well. So I got orders, no uncertain terms what was going to happen. So that night I went out with a screwdriver and a wrench and took the sing down off the side of the building and still have it in the shed out back. But we had some pretty good support from Houston on the digital side of ti and we were going along pretty well. We bought IBM equipment, 360's, 44's with array processors, it was a pretty hot piece of equipment at the time. It would almost fill this house, now the desk top processors can do the same thing.

#451 David: So how did you end up at Pan Canadian?

Peter: Well, I knew the people there quite well, they'd been clients. But the Chief Geophysicist at the time was Lou Stevens, who had been a junior geophysicist with me at Shell. We were juniors together in that organization. By this time Lou had become Chief Geophysicist at what was then CPOG I guess. It had just changed over to Central Del Rio, sort of a reverse take over thing. So it was called CRD, Central Del Rio. And I was in visiting with Lou one day, since we had known each other for a long time, we got past business and I made some remark about not being totally enthralled with Teledyne and after 19 years in the contracting business wouldn't mind getting back into finding oil and doing other things of a little more interest. And he knew that he was a bout to be promoted I believe to one of the Exploration supervisors or some such thing. So he asked me if I would consider coming to work for them. Years ago I had been quite interested, when I heard that CP was going to hire geophysicists. But it was a pretty squirrely company in the early days. They really didn't know how to be explorers. They couldn't get anybody that knew how and the ones that they got were soon driven out because they had several Englishmen running the place . . they were the only people that they could get that would stay there. It was not a comfortable place to be. I knew the Chief Geologist and the Chief Engineer. One was an old classmate and the other had been with me in New

Brunswick and so I chatted with them and they said, no you don't want to come to work. So many years later I did. They were still a fairly squirrely company but we brought them into the 20th century just in time. So I joined them, originally it was going to be as Chief Geophysicist but hey had another fellow there who they had originally offered the job and he had turned it down and then he changed his mind. So I came in as kind of a strange position, Associate Chief Geophysicist or something. Which was fine, there wasn't any great problem. We got along and the other fellow was an ex-Shell man. I had never known him but he'd been with Shell International and we had a lot of friends in common. So we didn't have any trouble getting along. And then eventually he moved off to look after their international operations and I took over as Chief Geophysicist. It was a challenge.

#515 David: Yes, coming from contracting back into a big corporate. . . what were some of the things you experienced?

Peter: Well, it was interesting because as a contractor, having had good clients like Imperial Oil and Gulf, Mobil Oil was another good client, being intimately concerned with those companies. And I knew a lot of the Chevron people and how they operated and so on, Texaco as well, so I had a pretty good idea, I had worked for Shell for a few years to start off with. But I had a pretty good idea how all these other companies worked, better than anybody who had just worked for one of those companies. So as a contractor I had a real advantage because I knew what just about all the other companies did. Because we were so closely associated, we did interpretations for them, and all the rest of it, so I knew them very well. So that wasn't a problem getting back into the organization. There was a problem in a sense that going from running your own shop to just being a cog in the wheel was a bit irritating. But we changed some of the things.

#546 David: Such as?

Peter: One of the early things was, I've forgotten now what the cause was. There was something going on that we really needed to know what it was all about and there was a consultant geophysicist out there who was involved in this project that I knew quite well so I invited him out to lunch and swabbed him down and got the information. And I bought lunch and I put it on my expense account. . ..

End of tape.

Tape 2 Side 2

Peter: So anyway, I took him out to lunch and swabbed him down and got the information and bought lunch and put it on my expense account and it went on upstairs. Word came back down that, consultants buy us lunch, we don't buy consultants lunch. And I sent word back up that things had changed. And I got away with it and continued to do so for 21 years. It was interesting. But I think I must have irritated the hell out of them on many occasions.

David: Well, not too badly if you stayed for 21 years.

Peter: Yes. I had some very good times. There was one spell as Exploration Manager for the U.S.A. which was a very interesting job. We had operations starting at the far northwest in the Gulf of Alaska, we had operations offshore in California, onshore California, we had them in Utah, Colorado, Montana, Wyoming. With partners, we had geological field crews working in Utah, seismic crews working there and elsewhere that we operated. We had offshore Texas, onshore in Mississippi, we had stuff going. We had, not too much onshore in Texas. In the Gulf with partners we were involved in operations there. We were the only Canadian company in a consortium that started doing seismic off the east coast of the U.S. The first organized seismic group shoot out there, we were a member of and that was very interesting. It was kind of fascinating. We would have our meetings in Houston of this particular group. And this was just at the time when a process called bright spot, an interpretive process was coming up, where you could more or less identify gas prone horizons by the fact that the amplitude of the reflection would suddenly increase because of the velocity contrast created by the gas in the formation. And this created what was called a bright spot because the amplitude suddenly got high at this point. Mobil and Shell pretty well thought they had invented this process. And they were ahead for awhile. But Mobil lost a few people and other people were beginning to get wind of it and it was a logical extension of digital recording because then you could allow the recording wide open without any automatic volume control on the information. Because your recording system was capable of taking wild swings and amplitudes so you could let the recording go without having to filter out all this stuff and keeping the amplitude down. You could saturate an analogue tape with too strong a signal but with a digital tape, as they got better you could handle these very strong signals, so that you could allow a great width of amplitude to be recorded. It was a logical extension of that, that you then be able to record properly in the field to see these amplitude things, bright spots show up, where there was gas in the formation. And there were a lot of gas fields found as a result of this process but you had to process the sections properly to see these anomalies. And this particular group wasn't processing the sections this way on this work that we were doing offshore east coast of the U.S. I can remember telling my boss, we

were invited down to one of the management meetings and I said, I'm going to have to bring this up at this management meeting. I hate like hell being the only voice from Canada coming down here and telling these guys how they ought to be doing their exploration but they're not doing it right. Interestingly enough, the operator of the group was a wiley beggar whose name escapes me now but he had prompted one of the other people in the group to bring the subject up at the meeting that I was going to have to bring it up if they hadn't. So this fellow brought the subject up, fortunately to my great relief I didn't have to do it. I was pleased, other people were pleased that the subject was brought up and he said, well, he turned to Mobil and the Shell representatives and said, what do you fellows think, do you think we should be processing our sections this way. No, both of them and so he turned to, I think it was the Shell guy, and he said, well, why not. And the fellow just blurted it out, he said, we don't want all our secrets out. It just caught him completely off base. Well the hoo haw in the room at that point, I mean everybody was just killing themselves laughing because everybody else was processing their stuff that way. So the Shell and Mobil finally said, all right go ahead and do it. The other amusing thing there with that group was, at one of the meetings, I said, you know, I'm going awful tired of going to Houston, Houston is a rather dull place to go. I said, we're doing all this work off on the east coast there and we should make our presence known there if we're ever going to drill or do anything. If nobody knows that we're decent people, nice guys and so on, we're going to have a hard time so we should have some of these meeting in various places on the east coast. Plus the fact that there were some interesting places on the east coast that I wanted to visit and I'd done all the book stores and art galleries in Houston many times. What I didn't know was they got Horace Shell to look after it, he was with Superior Oil and Horace had been up here in Calgary and what nobody knew, when they asked Horace if he would look after doing the next meeting on the east coast and he said, sure. Nobody knew that Horace was a Civil War buff so he had it in Richmond, Virginia. So off we trotted to Richmond, Virginia for that meeting. I don't think any of the crew had ever been in Richmond before. It was kind of fun. I had boned up on Richmond and found their interesting places, Edgar Allan Poe's house and then there was the church where they had the first meeting of the rebels before the Declaration of Independence and all this stuff before even the Revolutionary War started. So these places I thought we should go and have a look at if I had the chance. Well the meeting was over in the morning. We all had booked plane flights out in the evening, so we had the whole afternoon free. One of the fellows had driven up from Texas and I'd know him here in Calgary at Louisiana Land and he had his car there so he said, well let's go and do some sight seeing. So there were about five of us, we all jumped in the car and then our friend the driver said, okay where to? Deathly silence, so I said, well why don't we go and have a look at Edgar Allan Poe's house and I told him where it was and we looked at that and then okay where next. Well anyway I ended up giving them a guided tour of Richmond. Here was this only Canadian in the group and eventually it got the better of them they finally said, have you been here before or what. No.

#088 David: You just did your homework. This was with Pan-Canadian right? Why were you

involved in this consortium, this was exploration?

Peter: This was exploration.

David: Isn't that atypical, like why would you explore with other people?

Peter: Well, it was a good deal cheaper, it was a very expensive process. I think that was primarily the reason was the cost, it was frontier area. It was quite common to do it that way, you'd get involved with. . . In new areas, the Gulf of Alaska, we were with a consortium there. And then you'd all have the data, you could then afterwards join together with various other partners who also had the data to form bidding groups and so on. But you al did your own interpretations and so on. Bidding at these American land sales is a fascinating experience. Very early on, one of the bidding groups had discussed a price that they were prepared to pay for a particular block of land and one of their members at the meeting said, no that's far too much to pay for the land and convinced the fellows to bid less. Somebody squealed to the Federal Government that this company had talked their friends into bidding less so that the Federal Government had gotten less money than they would have if they hadn't done it. And the rules were then promulgated that it was illegal to talk your partners into bidding less and thus depriving the citizens of the country of income. Which seems a very peculiar thing, when you're discussing bidding at an auction and you want to bid $100 and I can convince you it's not worth more than 50 and you bid 50 and get it, which is what happened in this case. What's wrong with that. But apparently the U.S. government decided that that was depriving the U.S. citizens of income they should have had and made it illegal to do. So the discussions around the bid tables became a really fascinating dance because you didn't dare get that price up to high because it had to stay up there, you couldn't bring it back down. So you start, everybody would do their homework as best they could and you would sit around the table and the Chairman of the group would say, all right to the person on his left, this parcel here is the one we're going to bid on, what price do you think we ought to pay. And he'd come up with some number like $5 an acre which would be just utterly ridiculous, but that would go up on the board. And then we'd go to the next guy and the next guy would say, well that's not really quite enough, how about $10 and then it would start creeping up as you went around the table until it got up to a number that everybody was happy with and then it stayed there and then that was the bid. But you had to creep up to that number. There was no discussion otherwise. It was a very strange procedure. You learned it rather quickly, this sort of dance. And they had court reporters there actually taking down every word that was said at these meetings or taped them. And somebody would be taping the, some legal person would be taping them who could swear that the tape hadn't been touched and so on.

#128 David: Give me the highlights then, you were the manager of the U.S.A. and Italy, what happened there?

Peter: Italy was when I was Chief Geophysicist I guess. Three of us went over to Milan and spent three weeks pouring over incredible quantities of data all around Italy actually, that had been acquired and doing rough maps and so on. We had a joint operation in Italy, we drilled a few holes there. Not too successful. Management again showing an incredible

lack of will and once they drilled a dry hole they would run away from the project instead of learning from it.

David: And Australia?

Peter: Australia was before I joined Pan-Canadian, when I was with CMR and we set up PMR in Australia. It was quite an interesting assignment to arrive in Australia and within a few weeks to put the playback centre in. It's a fairly sizeable hunk of territory. But with a number of phone calls that I had made with friends that were already working in Australia, I had a fair idea it was going to be Brisbane. But we did Sydney, visited all the oil companies and so on in Sydney and Melbourne, Adelaide, Perth and then back to Brisbane and more or less settled down in Brisbane.

#147 David: How long were you there?

Peter: Three months. The government organizations were kind of interesting. I very nearly ran afoul of their sales tax out there. They weren't too tuned into being competitive. They thought we ought to charge our clients sales tax on stuff we were doing and I got into a jackpot because everybody kept telling us, we were buying equipment, we literally had to build the partitions and so on. We bought saws and all sorts of stuff in this office in Brisbane and people kept saying, you should get a sales tax license so you don't have to pay sales tax on all this stuff you're buying. So one day I went down to the sales tax department and told them who I was which was a mistake and the fellow's eyes brightened up immediately and he said, oh yes, we can give you a license. Now you should be charging your clients sales tax and I thought oh my god, I've done it now. I said, oh I don't think we should, he said, oh yes, you should. You're sales tax exempt so you have to charge sales tax. We had priced our services there just below what it would cost to send data back to the States and a lot of the companies were not all that keen on having their data processed locally. They just weren't used to it. They would be much happier if they'd send it back to California or whatever to get it done. We were the only playback centre in Australia at the time. If we'd had to charge sales tax we were dead in the water. So our accountants, interestingly enough, the accounting firm was part of the Price-Waterhouse group but the local name was Flook and Flack, quite an interesting pair of names for an accounting firm. Anyway their advice was to hire a sales tax expert. So I hired this guy who was just retired from the Federal Government in Australia, a sales tax expert and all he did was sit down and figure out how we should go about paying this sales tax. He said, oh yes, I can figure out all the forms for you, this is how you pay it. I said, I don't want to pay it, I want you to figure out how we can get out of paying it. Well that was something that had never crossed his mind, that anybody would . . . . So I ended up firing him and going and doing it myself. We finally won the fight and got out of the sales tax. It was perilous for a moment or two.

David: And where else, so Italy, Australia?

Peter: Yes. Those were the two major operations and then the U.S. of course.

#180 David: So I have four generic questions for you. First of all, which of your contributions in your area of expertise do you think is most significant, what are you most proud

of?

Peter: That's a challenge. Probably the data processing, the creating of cross sections. We pretty well pioneered that here in Calgary. That was probably reasonably innovative. We did some good things at Pan-Canadian too, but I was mostly encouraging other people to do them. A big marine survey on Lake Newell, the 3 dimensional survey there was something that I was very proud of. It led to adding a few million barrels of oil, several million barrels of oil, several tens of millions.

David: What have you enjoyed most? I'll go through all these four questions, ask them specifically and then if we want to jump back we can, what did you enjoy most about the work?

Peter: It's always been exploring and I think exploring and discovering things has been the enjoyable part. Trying to figure out what the hell's going on in the sub-surface, just exploring, plain exploring, seeing what's over the next hill. I think that's been the joy of the whole process.

#203 David: Any really big leaps in understanding of the earth science?

Peter: I think in our approach to processing data, that was probably where the contribution was the greatest. And then in the organizational side of it. Working with the society, the CSEG. I started as an editor and ended up as a President and did every other job en route.

David: Any highlights from your year as President?

Peter: Actually I ended up going to Australia that year but I think the big highlight was the SEG convention here. It was the first convention outside of the U.S. that the international SEG had ever had and it was here in Calgary.

#197 David: The year?

Peter: 1962. I had to give the welcoming speech and introduce Premier Manning which was a daunting task for a young man. '62, what would I have been, 35 I guess. I can remember sitting at the luncheon table next to Sir Charles Wright who was the last survivor of the Scott Polar Expedition and talking with him and commenting on the lump of cement that was in my stomach. He wondered why I wasn't eating the lunch because I had to do all this talking afterwards. But I gave the talk in English and French. I gave part of it in French so that our American friends would realize that they had come to a different country. Fortunately I had met a very charming French lady the night before at a cocktail party and told here I was going to do this and she had me rehearse it and she corrected a number of grammatical errors. It was great. At that time, we had Companie General Geophysique in an operation, CGG. And the wife of one of the CGG fellows helped me out with my French. It was kind of interesting, after doing it in French, then I felt I should really translate what I'd said and I didn't want it to be a put down that I would assume people wouldn't understand. And I had been really wondering how the devil I was going to do this until talking with John Hotchkinson about it and John suggested, well why don't you just say, for those people who speak French, who probably couldn't understand your French, you'll translate it in English. And that's what I did and it was great. So I owed John one for that. And I commented on the funny money on introducing Ernie

Manning. Oh yes, but admitted that it broke my heart as a life long Grit to say that it was probably the best government Alberta had ever had. And Manning was very gracious when he got up, he thanked me and he said, it's a long time since he'd ever heard anybody describe themselves that way. It went quite well. Sir Charles Wright was an interesting character. Milt Devron and I had gone down to visit him at Suffield the year before. We wanted him to come and talk to us about the Scott expedition. He was the one on the rescue team that actually spotted the humps in the snow, the snow covering the tents. He was in his 80's at this point, he didn't want to talk about that, he wanted to talk about this electromagnetic experiment that he was doing. He had an outfit in Australia and one in Suffield. These were diametrically opposite parts of the globe and they had these great long receivers out on the ground and they were studying the variations of the earth's electromagnetic field simultaneously from both sides of the globe, trying to get some handle on how the handle on how the magnetic field varied. That's what he wanted to talk about, his latest bit of scientific investigation. Quite a character. We found him out in the field, he was out there driving his jeep. And we went out

#260 David: As in Suffield, in southern Alberta.

Peter: Yes, in Suffield, southern Alberta. He was down there supervising this part of the thing. He had been in Australia and set it up there and now he was out here setting up the other side of the experiment. We found him out in the field, it was on a Sunday, Milt and I had gone down there and we wanted to talk him into coming and speaking at the convention. His first question when we were introduced was, is that cricket team from Calgary coming down to play us, yes, today, yes, is the bar going to be open then. That was his primary concern. And then after that when the bar was open then he would be willing to talk to us and he didn't want to talk about the polar expedition at all. It's got to be the electromagnetic waves.

#270 David: But you wanted him to talk about the polar expedition?

Peter: Oh yes.

David: Had he become a geophysicist?

Peter: Yes. I've forgotten what he'd gone there as. They took people on those expeditions who had a passing knowledge of botany and they became the botanist and if they were socially acceptable, they didn't have to be in good physical condition or anything else. They just had to be socially acceptable and then they became experts in some filed. I don't know what his field was at the time but he was bright young man.

David: So what did you get him to talk about at the SEG?

Peter: He talked a little bit about the polar thing. It was at a special session but mostly about this experiment that he was doing. But he had been taken back, the U.S. Navy I think, had taken him back to Antarctica on a special trip because of the fact that he was the last survivor of that group. And we wanted him to talk about then and now and that sort of stuff but that was of no great appeal to him at all.

#284 David: Any regrets, anything you wish you'd gotten done, areas of the world you wanted

to go to?

Peter: Oh I think so. I think there were times when we perhaps should have gone foreign and didn't. We were on the verge of going to Brazil at one point and that didn't materialize quick enough and we got involved in other things. I think we'd have enjoyed having a bit more of that. We had a London office that would have been absolutely splendid to be in at Pan-Canadian, but by the time it came to be my turn to go there they decided to hire an Englishman for it, who turned out to be a crook. And they gt what they deserved.

David: Any regrets that you didn't stay with a major your whole career?

Peter: Oh no. None at all. I've watched people who have. Oh some of them have had good careers but they were limited in what they could do and in what they knew. Working as a contractor during that period, some of my very great friends are people that worked for those major companies and we became almost part of the companies. In a couple of cases we've gone to company retirement parties, we've been invited to them because we were so close to them and their work.

#305 David: Anything else. How did you get into the art collecting?

Peter: I'd always had an interest in art but never really seriously thought collecting was something a person could do. That was always for the rich. But coming back from Italy, there was a piece that I had seen at the Glenbow that I really liked and I knew that Eric Harvie had bought it at a gallery in London. I had found this out and it was a photolith which is not an original print at all but it was a gorgeous piece of an ocelot and so coming back from Italy, I stopped off and spent the weekend in London. Visited some friends but went around to this gallery, the Tryon Gallery. They didn't have the print but they had a bunch of other things which I bought and that broke the barrier so to speak and that was in '71. Ten years later Shirley and I were back in London, we went around there and somebody had turned a copy of the print in so we now own a copy of that, the one that started the. . . .

#322 David: And how did you get into doing it yourself?

Peter: Well, the black and whites had always. . .even as a kid the black and whites had been interesting. I had a magazine, actually it was my brother's, that had a couple of black and white illustrations in it and I discovered many years later that they were woodcuts. But I pinched the magazine from my brother in 1936 and I still have it with his name on it.

David: Does he know this?

Peter: He knows. I've told him, he's got a lot of mileage out of it. So the black and whites I've always liked and I took a course in Calgary schools one year in making prints and with friend's encouragement, John Snow in particular, started making them about 20 some years ago. Made one a year every year, I haven't made this year's yet. I use them as Christmas cards but they're not Christmasy scenes. I print them on John's press. And then we followed that up by collecting. . . .early on we decided we better concentrate on one particular scene so Canadian block prints, linocuts and wood cuts was what we started collecting. We gave the Glenbow 742 of them a few years ago and then another 330 just

this year. British and American ones, the first bunch were all Canadian. And it's been great, we've gotten to know a lot of tremendous artists and they're now good friends, the ones that are still alive. And you can become and expert if you just narrow your collecting down to a field, you can become an expert in that field. That's quite rewarding.

#351 David: And Shirley's been interested in it as well.

Peter: Oh yes. We aid and abet each other. Sometimes she wonders what the hell I'm up to, other times . . . .better do it now or you won't have a chance later sort of thing. We're slowing down of course, since we've given most of them away but we still have a few around.

David: Yes you do, your house is full still. Well is there anything else, we've consumed your whole afternoon.

Peter: I didn't think I could talk for a whole afternoon. Oh the SEG convention in '69 was an interesting experience with Grant MacEwan. He came down from Edmonton, he was Lieutenant Governor at the time. We had our kick off luncheon in the Westin. We couldn't have it in the Palliser because the Palliser wasn't big enough. When you deal with these hotels it's quite interesting. In '69 at least, there was a world of difference. The Palliser was a professional hotel and there wasn't another one in Calgary. These other people were just rank amateurs when it came to getting things done. The kick off luncheon, there were 1,100 there for that luncheon. I was the MC and General Chairman of the convention and we had 5,000 attendees, it was a big convention. But the Lieutenant Governor appeared at about one minute to twelve. Talk about sweating. I offered him a drink and he declined and so in we went to the room and I took one look at the tables. They hadn't put the shrimp cocktails on the tables yet so I commented to one of the other Chairmen, we're 15 minutes behind now, it's going to take them 15 minutes to get those damn shrimp cocktails out. So it just went from bad to worse. The meal was roast beef, so this platter of roast beef was set down beside Mr. MacEwan who was sitting next to me. And he looked at it and he handed it back to the waitress and he said, I don't eat meat. So the waitress took it back and 20 minutes went by, nothing else materialized, the gravy had congealed on my plate. Everybody else had finished eating. I got up and went back to the kitchen. I said, where is the Lieutenant Governor's meal? And the chef said, he don't eat meat, I'm going to make him fish, salmon. I said, okay. The salmon was sitting there, I said, give it to me, oh I've got to make different vegetable for the salmon. You can't have the same vegetables as we serve with the meat. I said, give me a plate of stuff, we've got 1,100 people out there waiting. He said, you get out of my kitchen, out comes the cleaver. So I withdrew from the kitchen and about 5 minutes later out comes this salmon with a sauce and different vegetables. Put down in front of the Lieutenant Governor, he looks at them and, I don't eat fish either he says. He sees the look in my eye, he says, maybe I'll just eat the vegetables. I think that's a very good idea. At this point, that was 25 minutes, we were 15 minutes before so we're now almost 3/4 hour behind in our schedule. At this point, I'm poking at my congealed gravy laden plate and he's eating his vegetable around the salmon and trying not to get contaminated by the fish, various people start coming up to tell me how far behind we're getting. We have a number of presentations to do and Bob Uffen was the principal scientific speaker for the kick off, he was a well known

geophysicist, professor at Queen's and so on and had just been made science advisor to the Cabinet so he was going to tell us all about this. We finally got the food into the Lieutenant Governor and Bill Blair welcomed everybody, he was the President that year. Oh, Ed Wallace. . . yes, I'd forgotten Ed, the Reverend Ed Wallace did the invocation before the meal started, that was another 15 minutes. And it was all one risque story after another, he had them rolling in the aisles, Ed did. Ed was our minister at St. Martin's church, and I knew he was a good talker so that's why I asked him to do it. Also I wanted an improvement over the hard shell Baptists that the SEG had always had in the various cities in the U.S. The last one in Houston had been absolutely dreadful, he had talked about digging the bounds in the parish and keeping all the foreigners out. Since about 1/4 of the attendees at these conventions are foreigners it was mortally embarrassing to the host. So when Ed got up and did his song and dance with his several risque stories, that was the last time, I think they had an invocation at the SEG convention but Ed took 10 minutes or so to do that so that added to our lateness. And then when dear Mr. MacEwan got up, he said, he told me, I'm going to be very brief, I know you're falling behind. Because everybody was talking to me but they were really telling him. So when he got up, he said, I'll be brief, we'd allocated him 10-15 minutes, he spoke for 3/4 hour. They loved it, he was charming, he was funny, he was great but 3/4 hour. So boy were we ever behind and we had the press and television cameras all lined up to interview Uffen after he'd spoken. So when Bob got up, he said, we are all under pressure of various kinds, mother nature being one of them and I will be brief and he was. But my experiences with the Lieutenant Governor were interesting. He's a great guy but oh, he was a sore trial that day. But we all got over it.

David: That's wonderful. Mind if we end there. On behalf of the Petroleum Industry Oral History Project and especially on my behalf, I'd really like to thank you for spending this time with us this afternoon and we'll end the interview at this time.