

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Charles S. Lee

INTERVIEWER: Jack Peach

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JP: This is Jack Peach, I've at the home of Charles S. Lee, 4015 Crestview Rd. in southwest Calgary and the date is August the 12th, 1981. Charles to begin this conversation I'd love to know what brought you to Canada and what you brought with you by way of experience.

CL: Before I came to Canada I'd already been closely for 22 years connected to the oil industry. I first went to Romania as what they call the practi-canti???, this was a student who was assigned for a period of time to the Shell organization down there and we were given instruction in drilling and production and geology as well. A very rushed, crash course on the field of morani???. In those days the techniques of drilling had only got to a point where a very deep hole was 6,000', very deep indeed, and indeed, they had reached at that particular juncture, a 6,000' well which blew out and caught fire and burned for a period of 2 1/2 years. Indeed it completely depleted the zone. The derricks were almost foot to foot down avenues, you could walk almost from one derrick to the other. And somewhere in between these derricks we were still doing some drilling. I remember my first job was to stand on the fly wheel and get it off dead centre of an old Ajax engine and that was my first job. Some of the work of course, was somewhat hazardous because there were no things like guards on the chains to the drilling outfits. And at the other extreme, there were some extremely sophisticated drilling outfits. There was a thing called the hill differential drive which automatically fed the ??? to the bit in keeping with the rotation and the hardness of the rock. It was automatically compensated in a differential. So there were not only rudimentary types of drilling, but there were also some very sophisticated, even in 1929. Subsequently I went to the University of London, to the Royal School of Mines and after a 4 year period I came out with a degree in what they call petroleum technology. In fact it was oriented primarily towards, or very specifically towards acting as a field geologist in Venezuela for Shell Oil Company, that's how clearly it was oriented. I got my degree in 1932 and of course, there were no jobs at that time. So we tried to get something to do and I remember I earned about 2 pounds 10 in a government office, just as a clerk. Then I managed to get a job helping to repair these old gasoline pumps, I thought at least I was in the oil business. Again, at about \$9 a week. We went around repairing these pipes which were of the old type where you moved a handle to and fro and you filled a great glass container at the head of the pump until it registered 10 gallons or whatever and then you emptied that liquid into whatever vehicle happened to be standing by.

#037 JP: This was, in other words, almost service station work?

CL: Yes. They discovered that part of our training in the Royal School of Mines had been the repairing of motors and so forth, so they then put me into a department where I was repairing great, as we call them in England, lorries, great trucks, tankers. This went all right until one day I came back from a football match very much the worse for wear and opened up the wrong valve and instead of putting high test gasoline into the huge waiting tank, I spilled low test gasoline all over the yard where I was supposed to be ????. So I was demoted. But eventually somebody discovered, I suppose through the echelons of the company, which was known as Regent Oil and it was a subsidiary of Trinidad Leaseholds, it was the marketing arm of Trinidad Leaseholds.

JP: I can remember the Regent stations.

CL: I'm sure you do, they were about the third largest marketing organization.

JP: Yes, and I was overseas at school, in London I remember them.

CL: Sure. So they suggested that I should go out and learn to drill in Trinidad so off I went. After a period of working in the oil fields there, I did a great variety of jobs, I got into exploration, which was basically what I was trained for. And moved from there to Venezuela, where I did about 2 years work in the bush in northern Venezuela working as an explorationist. Had a fascinating time with many tales to be told there, which we couldn't possibly do in a short interview. From there I went back to Trinidad where I eventually rose to be manager of the various oil fields there, some of them. Then I went back into exploration again, did geology and geophysics in various parts of the world, including the Bahamas which was a fascinating job. We pioneered the marine type of geophysics, which is now of course, done as a matter of routine. But at that time all the companies were trying to find out new methods of doing gravity work, seismic work, magnetometer work and every single one of these programs was entirely innovative. There was nothing known about it. Recollect that by this time it was about 1946 and there had been no access to materials of any sort during the war so all the techniques of the oil business had pretty well stagnated. They were adequate for what was required but there had been no real advancement. So it was a period of intense innovation and fascinating experimentation, which I enjoy very much. Following those 2 assignments, during the course of the last one, in Barbados, there was a total change in regime and the mineral rights which we'd been putting together in Barbados were taken over by the government and they of course, didn't know what to do with them. So they asked Nathan Tanner, who was the Minister of Mines in Alberta, to come down and advise them. Nothing succeeds like success, they'd had great success in Alberta, it was just after Leduc and Redwater. So the last word as it were, in petroleum, was the Minister of Mines of Alberta. Well, he's a most charming individual and because I happened to be the only technologist in Barbados at the time I saw quite a lot of him, became convinced that I would have a much better deal in Alberta than I'd received in Barbados where they've taken all my leases out from under me, and from that moment I began to agitate within the Trinidad Leaseholds organization to send me up to start some kind of pilot operation in Canada. The decision was made late in 1950 and in January 1951 I came to Calgary and I've been in this house ever since.

- #079 JP: And this was Trinidad Leaseholds extending its activities, its actual business activity, you didn't leave the company, you brought a new branch of the company with you did you?
- CL: That's exactly right. They asked me to find some avenue of entry, much the same way as, shall we say, BP or any other of these major companies came up, they wanted to find an avenue by which they could participate in the western Canadian oil industry.
- JP: How did you do that?
- CL: Well, for about 8 months I sat here receiving deals. I was fascinated by the interest that the banks took in all these operations. All my associations in the Middle East, I'd been to the Middle East as well, and all these other places, the banks took a very secondary part. Sure they loaned you money to buy furniture or whatever but they did not seek to promote the oil industry per se, as they do, I'm sure you're aware of it, they lend huge sums of money nowadays on the basis of production.
- JP: That was risk capital that really frightened them?
- CL: That's right. In any part but right here it had already started. The Canadian Imperial Bank of Commerce, I think made the first production loan to Home Oil of some \$7 or 8 million. So this was the starting point. Well, at that time they hadn't quite reached that point, I think that happened about 1955 or so. They hadn't quite reached that point but they were certainly angling for it. So I found that I got many introductions to all kinds of situations through the bank and eventually one arose, it was a group of people who had 6 drilling rigs and at the same time had some leases in the Leduc field. So I figured that we could make a nice, basic revenue from the drilling business and at the same time have an opportunity to go into additional development, both in Leduc and wherever we wished to. Well, eventually after prolonged negotiations with a fellow called George Lawrence, who was an old Turner Valley hand, who could never be found because he did all his business off his cuff. I never could find anything but a bundle of papers in his pocket, he had no files whatsoever. The only person who tried to keep track of his business was Ross Alger. And Ross was an accountant sitting in the Alberta Building, in a small very hot room I remember, trying to track down George Lawrence and keep track of his figures. Anyway, even on the day of closing, and it was a million dollar deal, on the day of closing I remember we could not find George Lawrence. But anyway finally the second day he appeared and we were able to settle the deal and Trinidad Leaseholds was in business in Canada. So that's where it started. To put matter very briefly, from then on things got a bit difficult in Trinidad Leaseholds, particularly they were up for grabs, I think one may say and in 1954 they actually sold out to Texaco. Well, I got very uneasy at that period and W. C. Pitfield, the brokerage house, now Pitfield, McKay, Ross, had taken an interest in a company called Canadian Decalta Gas and Oils and this had been financed by some people on Bay Street, Toronto and they had lost control of it. Not Pitfield's but the people who financed it, and into their organization they'd introduced a real oil man, one of the managers from Shell from Venezuela, a fine individual, and he was looking for somebody to take this little entity, which I think had a \$20,000 cash flow and some \$400,000 in cash and try and make it into an oil company. It was at that point that I said yes, although I don't understand now why I did.

#123 JP: That's quite a challenge.

CL: It was fun. But the greatest asset was a fellow who was the so-called consultant, managing consultant to the company and his name was Alistair Ross. Alistair and I liked each other right from the word go and we were together for 25, 26 years. It proved to be a very fruitful association. And we've built quite a company. But in those days there were great differences between the atmosphere of the oil business and what pertains today. And the differences stemmed from a large number of causes. First of all there was the whole question of land tenure. At that time you could take 100,000 acres and have it in good standing for 3 years, with a modest amount of work for 3 years, for the magnificent sum of 97 cents an acre, including all the various renewal payments and so on. And at that end of time if you'd satisfied government that you'd done the work that they required from you, at the end of that time you could take 50% of that reservation and convert it into a lease at \$1 an acre a year. So the major companies who already had magnificent cash flow from other parts of the world, and also the technical ability came in here and immediately undertook a leasing program. They applied for large areas. Technically they could not take more than 200,000 acres but they very quickly got around that by forming an immense number of subsidiary companies. If you go into the Shell office. .

JP: Yes, they're on the board that's in the lobby.

CL: That's right. There's maybe about 50 or 100 so they very easily got over the limitation of acreage. Now our Alberta government was only too happy to see these people coming in with so much expertise and so much ability and so much finance that they were most welcome here, let's face it. As far as the smaller companies were concerned, they had opportunities obviously to file on these properties at relatively little amounts of money and after a period of time the value of them would be enhanced by neighbouring drilling and so forth, and then they could farm out to the major companies who would really spend the money for them. And in that way, many of the companies that you see to this day such as Norcen and Dome and Home and Decalta as it was, it's disappeared now, Bill MacGregor and all these people, they actually started at this level. There was another aspect of course, which enabled an independent to get into the act, and that was by acquiring properties at these auctions which the Crown held all the time. And for wildcat acreage, the prices were not that high. Where we pay \$100 now you probably paid \$1 or \$2 an acre as a bonus do you see. So there were opportunities. One must realize that even if 90% of the industry was owned and worked over by the huge international oil companies, in absolute terms 10% of such a vast area and 10% of such potentially very large production was still enough to leave plenty of room for a smaller entity to live and exist. And then there was the question of financing. Nowadays if you're looking for finance a total roadblock is thrown in your way by way of foreign investment free agency, well there were none of those roadblocks. We have many, many agencies which now exist which didn't exist then at all with respect to drilling. These things made life a great deal easier, let's face it, it was tough but it was easier in terms of relationships with government. And then of course, the confrontation between our respective levels of government didn't exist either. So it was in many ways easier to move, to move quickly and to get a great deal of excitement out of the business. And if you found production, at

least for a period there in 1950, there was no difficulty about selling it. Now towards the end of the 50's of course, we ran into real problems and it was extremely difficult to sell the oil. We had no access to eastern markets

#180 because cheap crude oil was coming in from Venezuela and the Middle East and it was about that time that a number of us began to press very hard for a pipeline into Montreal. Bobby Brown was of course, one of the chief protagonists. He had actually very early on, he had formed a pipeline company for the transportation of crude oil across Canada. And he rejuvenated this company and of course, became extremely personally interested in trying to get oil from this part of the country over to Montreal. I took an interest in a different way, I was much more interested from the point of view of sewing the company together as it were. I didn't mind who financed it or who got the credit particularly so long as that pipeline was built. And indeed we went around to almost every agency that you can think of, including the Canadian Pacific, Canadian National, endless people, trying to raise enthusiasm for support to the financing of such a line. And Jack Gallagher particularly was most interested in having what he called, I think, a citizen's pipeline. His idea was that everybody should have a share in it. And I think he was right because if we could have got Quebec population into equity in a pipeline to bring oil from the west into Quebec it would have been a very strong linkage, it would have got people knowledgeable and interested in our western development. I've always thought that it would have been a tremendous step forward towards the cooperation between east and west.

#204 JP: You feel that an individual person could have had a small share in this and it would be open to the public?

CL: Absolutely. I had it in mind that it would be financed very much like our Alberta gas truck.

JP: Only on a national scale.

CL: On a national scale, yes. And everybody would be given an opportunity to invest. So I picked that ball up from Jack and ran with that one for a bit.

JP: Yes, I remember you did. And cut quite a wide swath too.

CL: For about 10 years we were beating the drum and inevitably after 10 years of beating a drum, somebody hears it.

JP: Your contacts with C. D. Howe must have been particularly close through this time were they?

CL: Not particularly, no. You see, the Conservative party beat out the Liberal party in 1957 on the question of the Trans Canada pipeline and it wasn't until about 1958-'59 that we began to get organized, originally with a view to the Montreal Pipeline, as we used to call it. But subsequently as an independent Petroleum Association and there were a whole group of us that felt there should be representation from the independents in government quite separate and distinct from the international oil companies. The reason being that they spoke with an international voice. And with the kind of expertise they had they would present a position to the authorities which reflected their views of how Canada should be run. And their views were very often quite at odds with the views of a

Canadian. They behaved as well as they possibly could of course, in terms of Canadianism, they always had done, they bulk of their staff was Canadian. But inevitably there was a certain conflict of interest, what was going on in Venezuela or the Middle East had some impact on their thinking as to how Canada should behave.

#229 JP: Yes, and to their verdict as to what they felt should happen.

CL: That's right. So the first step was to try and get a man of international repute, to write an unbiased report because inevitably we were regarded as hotheads and biased and we didn't have the kind of lobby or the kind of influence that the international companies had. So we were fortunate in getting Walter Levy to work for us at that time and he has since become an extremely highly regarded international petroleum economist. It was about that time that the Borden Commission held their hearings so it all gelled. All at once the conflict came to the surface, it was formally heard, formally represented on both sides. Following that, indeed, it was before the actual report was handed down, there was a interim there of about a year or two between the hearings and the report, we had formed the Independent Petroleum Association, which as you know, is now very strong indeed and I think has done exceedingly well in representing the purely Canadian aspect of the petroleum industry.

JP: Very well regarded now.

CL: Yes. So that's rather a long answer to your original question.

JP: I think it's a wonderful answer to the question. I'd like to get down to one or two of the little fine points of it too, one of them being your own reaction to the scene here in Alberta. This may seem a very trivial sort of question, you have been used to, as you said, oil wells shoulder to shoulder, what did some of the aspects such as spacing mean to you, what did they do to your particular line of thinking?

CL: Through the education that had gradually developed in Trinidad Leaseholds, which was a very sophisticated company, looking back I realize that they had a great deal on the ball, through that education we were dedicated to the widest possible spacing. Even at that time we went up from 600' spacing. That was considered wide spacing. And we were working up to a 40 acre spacing. But don't forget that spacing is a matter very much of the underground conditions. If you have for example, 16 different horizons, which was not unusual in Trinidad, to get 16 different horizons. And you could get 2 million barrels on a well on 10 acres, just by reason of the multiplicity of horizons. So technically, if you wanted to drill to each of those horizons, you could drill 16 wells from one location, so to speak, theoretically. So I draw the extreme case but it is a function of the geology underneath. If the formations are extremely steep dipping, if the sands are very lenticular, if the geology underneath is such that you will not extract the oil by a very wide spacing there's a great deal to be said for more close spacing. And indeed this was fully recognized by the Alberta government. We have 10 acre spacing in this province, up in the Sheldon area and so on, around Lloydminster. And that is because the oil is very thick, the sands are quite thick too, and you do not drain the formation by putting the wells apart half a mile, you just don't do it. So it's an empirical thing to some extent but the principle remains the same, that you try to develop the widest possible spacing and we

had already adopted that principle. So that didn't worry me. But what did appal me was having always worked within the confines of concessions which never exceeded possibly 500,000 acres each, in places like Venezuela or Trinidad or the Bahamas or whatever. Suddenly to be faced with this incredible country, where do you start, that really staggered me. We travelled around by plane and I thought, where on earth do I start to put a hole down, all the way between Manitoba and Vancouver Island.

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Tape 1 Side 2

CL: One of the staggering things to any geologist who's been accustomed to working within relatively small confines is to approach this area and suddenly be faced with millions of acres or hundreds of thousands of square miles and know where to start. This is where of course, the expertise of the major companies was paramount. They were able to run seismic lines over vast stretches of territory and they had all the facilities available for reviewing the seismic and so forth.

JP: Not so much the knowledge I suppose, as the physical ability?

CL: Numbers of people, yes. And the background. These huge offices in the United States, they had all the back-up, which we didn't as small companies. But on the other hand there's a great deal of serendipity about this sort of thing and Dr. Suta???, who had been my boss in Venezuela came up to assist us up here. And I was possessed of this problem of where to start so he said, well, let's take a plane out and I said, what good is that going to do. Anyway we took a plane out of Edmonton and we started off towards the northwest and we went over area after area of totally flat country. In the distance we saw this slight rise you see, and we looked on the map and we asked the pilot where it was and he said, that's Swan Hills. Well said Dr. Suta, if there's a slight rise we ought to take some sort of an interest in it. Now the rise happened to be some kind of a glacial drift, it had nothing to do with the geology but anyway it was a rise so we went back and a little bit later we took a concession, 200,000 acres I think, over the Swan Hills. It happened to coincide, that was in Trinidad Leaseholds, it happened to coincide with the time that the company was bought out by Texaco. So within their portfolio they had this reservation over the Swan Hills area. It was about 4 years after that, Home Oil took a farm out of this particular reservation and you know what the result was, one of the biggest oil. . .but that's what I mean by serendipity. It really had nothing to do with geology or anything, it just happened to be a bit of a hill in the middle of the prairie. So you can understand my almost dismay when I first came here. But bit by bit of course, you accumulate a tremendous amount of knowledge, there's a great deal of drilling going on and nowadays, apart from the seismic work, which is still of great value, it's the subsurface work, the correlation from well to well. And here in is a particular aspect of our oil business which is of the utmost value to somebody coming in and it has always pertained, mainly that the data from exploratory wells is available to everybody after one year. So that I know as much about the x, y, z, well in Timbuktu, wherever it may be in Alberta, as the original driller. Not perhaps quite

as much but darn nearly. And this doesn't pertain for instance, in the United States.

#035 JP: Where they play very close to the chest.

CL: Very close to the chest and there is no central clearing house as it were, like the Conservation Board, where everybody, by law, has to submit their information. And of course, in the case of development wells and field wells, the information is available after 30 days. So this has given a tremendous impetus to available knowledge and with all that knowledge at one's command you really lose that sense of total indecision, total lack of information. And over the years of course, it has become assimilated and there's a lot of material available to everybody.

JP: I would gather then Charles, that you approve of this availability of knowledge?

CL: Oh absolutely.

JP: You don't feel, damn it all, I've done all the original work, why should they cash in on it, it's not that.

CL: I don't know whether you'd find anybody that has that sense.

JP: How good that is, that's great.

CL: You might ask that question of other people but I would think that most people would say that on balance, you derive more than you give out.

JP: Yes, because you have everyone else's, which is a lot.

CL: Yes, exactly. Now there is that year of course, in which the originator has freedom to manoeuvre and take advantage. . .

JP: What is your impression, has been your impression all the way along of the Conservation Board?

CL: First of all I may I say, I've worked in many countries, South American countries and many others and nowhere have we ever found places where there is such a high degree of integrity and this is terribly important. Now there have been times where there have been very severe clashes between the industry and the Conservation Board. Particularly I recollect one when we had the great debate on the subject of allowables. This is rather a technical subject but originally the Conservation Board was set up for the protection of those people who didn't have a market for their oil. For example, if you had one company with a refinery offsetting another company without a refinery then the company with the refinery could take all the oil and drain all the oil from the contiguous properties. So this couldn't go on, partly for the reason of the leaseholders. They were at a disadvantage, they were being drained but very often the mineral rights, they royalties were in government hands on the contiguous property and not on the property that was actually producing. So the royalties were being deprived by drainage. So the Conservation Board was set up in late Turner Valley days and contributed to by industry, I don't know whether you knew that.

#064 JP: Yes, I likened it to the police force, the tax payers provide the financing for the police force in order for the police force to take the well-being of the . . .

CL: That's very right, although there is a slight difference in as much as the government pays half.

JP: Yes.

CL: Now in the case of the allowables, which I mentioned, the great debate arose out of the fact that there was an economic allowance which was an allowance granted to everybody who brought a well in. You had your share of the market automatically, which went back to the original philosophy when the Conservation Board was set up, that you had an equal share, depending upon the depth of the well and the investment in it and so on. And the great debate arose when the economic allowances were almost eliminated, not quite and the amount that you could produce was related to the reserves in the well. This was a severe blow to many of the smaller companies because they depended upon that economic allowance to get their later return from their investment.

JP: What brought about that sudden change?

CL: I think it was a terrific desire by all the major producers - well, first of all, I should go back a little bit and say there was a great market, the supply vastly exceeded the demand. We did not have the markets that we wanted. So those people who'd found the big reserves wanted a bigger slice of the cake, they didn't like all these entrepreneurs coming in and getting a share of the market when in fact they were producing piddly little wells, in their estimation. And in fact, it's not just in their estimation, they were allowed to produce, shall we say, 60 barrels a day, or 3 or 40 barrels a day from a well which would only produce that amount. And these other wells were capable of thousands of barrels a day were cut in order to provide room. So you can see that there was a feeling of inequity. So it was huge debate on the subject of equity, that's really what it was. At this stage in life I don't know whether I want to take sides on the thing but that was the problem.

JP: Well, Artac??? was deeply involved in this wasn't it?

CL: Very deeply yes. Indeed I was the spokesman. But that was the only time that I felt that there was a large section of the industry which felt unhappy with the Conservation Board. Now since then they've had to get more and more into our business, since the confrontation particularly between the two levels of government, they've had to get more and more into our business and the more they get into your business of course, they less popular they become. That's inevitable. But throughout this whole thing, and I repeat, there's never been a whisper of unfairness of that sort of thing, of any sort, no, not at all. And I think that's an immense source of credit to the Conservation Board. Very few countries that you can find a government entity with the kind of control and power that they have that somehow there hasn't been a smell somewhere.

#100 JP: This Board, it sounds gratuitous to say so, but it has grown up with the industry rather properly hasn't it?

CL: Yes. Indeed. It's right in our business every day.

JP: It's very complicated now. .

CL: Extremely complicated. You see, we don't sell our oil as we used to, to any of the refineries, we sell it to the government and we assess all our own royalties but all those figures are turned in on the 2nd or 3rd of the month and then they redistribute the monies that they receive from the sale of our oil, less the royalty, they take the royalty off and pass on the GST. Well, you can imagine the complexity of doing this at the end of the

month. The Conservation Board gets into other things too, that is the Conservation Board, they're involved in all the allowables and everything and you can imagine the complexity involved in the assessment of these incentives. What constitutes an exploratory well? The other complexities that are really tight nowadays, when we first came here if you took a lease you got everything from the sky down to the centre of the earth, you lease regardless. But now, everything is separated into various horizons and when you get a lease it's only down to a certain depth. Or even for a formation which has been left out at some stage in the history of the lease, right in between two producing horizons, you can get one that is lying in between. So they're involved in every one of these decisions. The complexity of the work there is tremendous.

JP: How does a company, in picking up a lease, arrive at what horizon is. .

CL: It's always defined as between certain depths on such and such a Schlumberger log. Now a Schlumberger log is an electrical profile of the well and you define it as between such and such a depth and such and such a depth, on the log of such and such a well. And that is the. . you have a lease over that area. Well, it doesn't always work because there are faults and there are differences, but most of the time it works quite satisfactorily. But there are occasions when there is a great debate.

JP: Arrived at jointly by the lessee or the would be lessee and the Board?

CL: Oh no. It's all set down by the Board prior to the letting of the lease.

JP: Take it or leave it eh?

CL: Oh yes. No questions.

JP: Which goes to show how very complicated the job has become.

CL: Yes.

JP: The changes then, those are, you can't very well that is a change, those are some changes that you've seen and you've spoken of some of the other, facing the vastness of it all, what else have you seen happen?

CL: The other aspect of course, is computerization. Like every industry, our whole approach to the basic exploratory tool, namely seismic, has been changed by computerization. We can now present diagrams and cross sections which are intelligible by anybody who comes into the room who has even a modest amount of petroleum knowledge. In the old days the seismic things were the result of endless calculations and difficulties and in the end I would say that it was only really, an expert in seismology who could quantify the results. The average managerial person would have great difficulty in assessing seismic results. Nowadays a managerial person can come in, he's obviously had knowledge of the industry and so on, he's not totally raw, but he can have a view as to whether or not you should really spend a great deal of money on a particular location. In the end he probably relies on an expert to a very large extent but that I think is one of the other aspects. In the drilling business, even from the time I first walked on a rig the elements of a drilling rig have not changed. Which is rather surprising. The safety factors have changed immensely and the steel technology has changed so that we can drill to immensely greater depths. As I said. .

#149 JP: Yes, 6,000.

- CL: That's a shallow well now, or relatively shallow. Now they go to, I saw a rig the other day rigged up in Austria for 30,000'. And all the techniques of assessing the value of the well as you're drilling, the geophysical work that is done in a hole by all these various logging devices. I call them logging devices, they're electrical profiles of the well, which measure all sorts of geophysical aspects of the well bore, that is a tremendous change. That was just coming in as I got into the industry.
- JP: And a hugely scientific part of it now.
- CL: The other thing of course, is that there are far more trained Canadians. In 1951 there were virtually none. Those that were getting into the industry mostly came from the hard rock geological side but by far the greatest number of people were from the United States. Ted Link for example, he was a leading geologist and was the discoverer of Leduc, he was typical of the type of person who came from the United States and gave their all to Canada as it were.
- JP: What was the feeling, what was the reaction that you encountered as an Englishman coming in? Do you remember some of the atmosphere?
- CL: I don't think that I've ever been conscious of that. Marge and I have had to live in so many countries that we've slotted in wherever we went. The first thing I want to say is that there was a tremendous camaraderie here, people welcomed one. There was no . . . everybody wanted to see you get into the business when I got here and everybody had time for you. This is a thing that I haven't found in other cities and I think it still pertains that people start work early, and they finish relatively late. They have plenty of time for you if you want to talk about things at large and find out. I would say that I found a real welcome. As usual one found half a dozen people that you've met somewhere around in the world before.
- JP: Yes. As someone was bound to say, it's a small world.
- CL: And oil men are just like a flock of doves you know, they land on wherever the feeding is good. These chaps I've met in Trinidad and the Middle East and so on.
- JP: I've never heard them called a flock of doves before but that's so true, they land where the feeding is good, where the grain is loaded.
- CL: It happens in the industry from year to year, everything is in fashion. One day it will be the Swan Hills, the next year it will be west Pembina, the next year it will be the Arctic, the next year it will be the Beaufort Sea and then offshore Labrador and everybody wants to be in the picture. And of course, a lot of people get burned, let's face it, a lot of people.
- JP: And on the way then you finally find that the wheel has made a complete turn and you're all back at the same place.
- CL: Well, I'd like to be able to say that but it doesn't often happen, no. The other thing that is so different from when I got into the oil business and that's the whole question of a land position. The one thing that I've learned from this oil business has been, to have an excellent land portfolio. It must be picked up with a modicum of intelligence but really and truly so long as you're in an oil area you should get yourself large tracts, as much land as you possibly can in consonance with your financing and your cash flow. Because eventually it's going to turn up trumps. It's a remarkable fact. Over and over again I thank god that I got that ridiculous piece of land that I thought was useless and it proves to be

the most valuable.

#198 JP: Is this common only to this part to your knowledge?

CL: North America, yes. Because it's only here that you pick up snippets of land. In most of the other areas in the world it's not parcelled out in the way that it is here.

JP: Oh, it's a block is it?

CL: You get great concessional blocks yes.

JP: The other thing I was going to ask you Charles, over the course of time, with the computerization and all that sort of thing, what has been the changed role or some of the changes in the roles of individuals? What's happened for example, to the geologist or the geophysicist, what is happening to him? I once understand one was king and now he's not.

CL: That's right. Now originally a geologist walking on a rig in 1930's was at a great disadvantage, the driller was supreme. I used to feel it very much and that was why I used to work at nights on the drilling rigs with the drillers and do my geology during the day. So that they knew that I was, as it were, one of the boys. But they would do all manner of tricks to fool you because in the days of cable tool drilling the driller was supreme. And I remember so well the fellow that took me on finally, he said, you've got to be a learned driller because it's the drillers that matter the most and that was the feeling even in the top most hierarchies of the smaller companies. They figured that the driller was the guy who knew where the oil was. So there's been a complete switch in the attitude towards the geologist who works around the drilling rigs. The same with the engineer, the driller was supreme up to, I would say, middle 40's.

#223 JP: Well after rotaries came in then?

CL: Oh yes. Perhaps I'm exaggerating a little bit, maybe 1938 I began to feel comfortable going around. And the same applies to engineers. The engineer of course now, is a very important person on a rig, equally important to the geologist. The geologist has certain specified duties, such as coring, that's taking samples. He examines the samples, he calls the shots when he feels the samples are attractive and so on. But the engineer is the person who decides what shall be done in order to test the well, what casing should be run and all these things. Now those two jobs were put together. For example when I was working on the rigs I did both jobs, I did the geology and the casing and the cementing and the coring, everything. You were known as an exploitation geologist. You see you were both engineer and geologist. Now they're totally segregated and the dear old driller as far as I can find out, he's simply responsible for drilling. You see, he's not even responsible now for the mud technology. The mud with which we. . .

JP: That's engineering is it?

CL: That's engineering. And you see, you have special companies looking after special things. If you want cement nowadays you call in the cement company, if you want a test you call in the testing outfit. Want a core, the coring and so on, right through the whole bit, there are specialists in each technique. Now those specialities pre World War II, not in the least. The exploitation geologist was responsible for the whole bit, he would look after all

of that.

JP: So it's pretty much the same as in medicine with the general practitioner now having one particular area, the rest are all specialists.

CL: Very much so. ??? are now submitted to specialists, not to doctors.

JP: Yes, you can be a specialist in the left eye.

End of tape.

Tape 2 Side 1

JP: So Charles in carrying this another step forward, you were talking about the managerial type, who now, with a modicum of knowledge can take a look at the readings that he's getting now from the computer. What had been the change in his role?

CL: I don't think a great deal. Obviously he has to be aware of greater complexities, from start to finish but I don't think it's been all that much. If you're talking about the management of a branch organization, no, I don't think there's been an awful lot of difference. He has a great deal more specialized and expert help to advise him.

JP: But he's still close to the action?

CL: Oh very much so, oh yes. And indeed I'm sure that every one of the companies has at least one meeting a week where he is reported upon. I can remember in the old days, it used to be one a day. We used to have a morning meeting where you allocated the work to the drilling rigs and the production crews and everything and dished out the work as it were, almost for the day. But that was a little different, those were concession operations where you were responsible, you had your own drilling rigs, your own cementing outfit. Again, I come back to this non-specialization. If you're talking about my own personal experience of course, the great jolt is going from the manager of a part of an organization to being responsible for the entire financing of . . . where you're in view all the time, you have shareholders to look after, you have a Board of Directors to whom you have to report. Which of course, you never see if you're just managing part of a large organization. And one of the great difference between a person who is running a junior company and one who is running a branch of a senior company is the total dedication to maintaining your company in a good financial position. In addition of course, to technical decisions regarding the drilling of the wells. That I think was the biggest shock to me because I literally didn't know what a debenture was, honestly, I didn't know what a share was. I'd never dabbled in the market or anything of that sort when I came out to Canada. So the biggest shock to me was having to go and solicit funds for drilling operations to trying to raise money by way of loans and that sort of thing. And this is a closed book to the branch manager. Now the other aspect of course, that a fellow who runs a part of a large company, particularly in foreign concessions and that sort of thing, is the administrative aspect of looking after large numbers of personnel and their private lives. If for instance, as a manager of an oil field, in a place like Venezuela or the Middle East or wherever, you were responsible for the housing of employees, their recreation, their religion and everything connected with the employees and all the problems that

arise. The very personal problems, like whether a) should have a suite of furniture with a chair or not or whether somebody else should have a piece of garden, all those sort of minutiae of life, all devolved upon the manager of a branch in a remote part. So this was a totally new. . . in fact, in Trinidad you were automatically made a Justice of the Peace because you became an administrator of a total area. And from that point of view, that was another complete switch as far as my life was concerned. Now it wouldn't apply to everybody but for instance, a boy like Bill Daniel who's now the head of Shell, he looked after, he was the general manager at Point Fortune??? in Trinidad for 2 years. His job would involve all the aspects of the personal lives of everyone, whether they went on leave, what kind of leave they had, the salaries, the ??? that they got, every single detail would revolve on his shoulders. Now of course, he's an entirely different. . . So I would say everybody who's gone through in the oil business who's got to any position whatsoever as far as management is concerned has probably had something of the life of a chameleon. He's had to be a bit of everything.

#050 JP: And do a lot of homework in the process I would think?

CL: Oh yes, indeed, yes.

JP: You must have burnt a lot of midnight oil in this house I would think.

CL: Oh yes.

JP: Now looking back on the span in Alberta, you have that to stand on, what do you see ahead of us now?

CL: I've never found in all the time I've been here the industry in such a state of dis-ease. There is a period where we literally don't exactly know what's going to happen and it all depends on these discussions that are going on between Mark Lalonde and Merv Leech??? and ultimately of course, between Trudeau and Lougheed. I have to be optimistic because over and over again, throughout this long period you've seen the ebb and flow of what I would call good atmosphere and poor atmosphere. It's just gone to and fro. It was bad in 1950, it wasn't so bad in 1966, it was bad in 1973, it was wonderful in 1978, '79.

JP: It's a pendulum isn't it?

CL: Yes. And I just have to be optimistic that the pendulum will swing the other way. I don't think for example, and I speak for myself, I'm not in any stocks at the moment because I think we haven't seen the ebb complete yet. But nonetheless I think that it's a good time to have something on the side and to reinvest. We feel with that long range in view, that now is the time to be looking for bargains.

JP: We being?

CL: I'm Chairman of Petro-??? It's a French company. I wouldn't for example, at the moment, I ran two drilling funds last year and the year before but I wouldn't run a drilling fund right now because I wouldn't like to put my money in the oil business right now, it's too soon. But that doesn't mean that you're not scouting the prospects, keeping your hand in, occasionally going to Crown sales and buying pieces of land.

JP: To keep that land portfolio healthy?

CL: Exactly, to keep the land portfolio up. Because ultimately I'm quite sure that we will be

the other side of the pendulum and we shall be back in business again. I'm sure of it, absolutely sure. So for the moment we've never been in such a state of disarray.

JP: Has the industry brought it on itself to any extent?

CL: No, I don't think so. I really don't think we can claim any blame for that.

JP: It's political?

CL: It's purely a political standoff between the province and the federal government. You see, everything was going exceptionally well up to October 28th, 1980. It was going just great guns, everything was looking very bright. Let's talk about the pendulum again. I agree with you that there was a certain degree of over development, I'm sure of it. But that would have cooled itself, if we effectively couldn't sell our gas it would have stopped people from going. . there would have been tremendous expostulations and uproar about trying to get additional markets but eventually it would have cooled off the amount of drilling. And automatically cooled off the pressure of supply and the demand would have gradually risen to meet it. But that was all it was but no, I think it was strictly the impact of that devastating budget. There was nothing else. . and throwing of the two sides into such a terrible confrontation.

#089 JP: I was looking at some clippings in the newspaper of 1973, not too long ago and this was the end of the world because the drilling rigs had moved across the line and the industry would probably never recover. But that was one of those natural ebbs and flows.

CL: People talk in hyperboles though. I find it very difficult to talk in hyperboles. One's experience just teaches one that it ain't necessarily so.

JP: What about the secondary recovery and that sort of thing, over some of the . . .

CL: I speak with quite a lot of feeling about that because over the years we've brought out most of Turner Valley, strictly for the secondary recovery prospects. And it's proved enormously rewarding, just fantastically rewarding. And it's still going strong, if you go down there, you'll see all the old pumps working gaily. So secondary recovery, under certain circumstances is an immensely worthwhile objective. A large number of the fields are already under water flood, which is secondary recovery. Now I think maybe in the back of your mind you're talking about tertiary recovery.

JP: Actually yes.

CL: I think you are. About which very little is know. Secondary recovery is almost ho-hum nowadays, it's part of the routine. And the earlier it is started the more effective it is. So from the very date that a field is brought in of any dimension, the whole question of water flood and secondary recovery is examined, right away. Because the longer you keep that pressure up the better. You utilize the motivating forces in the reservoir to a far greater degree. Now tertiary recovery is strictly experimental. There are all kinds of forms of tertiary recovery. None of which have been said to be 100% successful or 100% the right thing to do. I'm quite sure it's going to come and we're in a period of digestion of scientific research and so forth at the present time and eventually it will come. I don't know if you know but in a reservoir, if you take all the oil in place, the average recovery by primary methods, that's just flowing it, and pumping it, the average recovery

worldwide is about 22%. So you still have 78% of the oil in place in the reservoir. And secondary recovery probably will increase that to somewhere about 30-35%, I'm speaking very broad figures. Anybody who quibbled about it could find exceptions. Golden Spike is a phenomenal exception, they expect to get about 90% of the oil out. But that's another thing, there are certain wonderful exceptions and very poor exceptions too. Let us take it then, by secondary recovery we get 35, that still leaves 65% not recovered and the great problem is how to get that stuff out of the formation. There's been carbon dioxide injections, there's been fire flood injections, a great number, they put in light fraction, propane, butane ahead of a carbon dioxide flood and so on. And everybody is experimenting. And until they've got that period we shall still be of course, in a state of flux. But I'm quite sure that ultimately there will be some method that will become relatively routine.

#129 JP: There again, the Lee optimism comes to the fore because with all the remarkable technical changes that have taken place in your period here, surely this is another step.

CL: It seems a relatively small step, yes.

JP: But there's a long way to go yet.

CL: Of course the other terrific move forward has been offshore drilling.

JP: Yes. Had you had any experience - oh yes, you had of course, you were talking about some of . . .

CL: Offshore seismic.

JP: Seismic work, not drilling.

CL: Surprisingly enough, one of the first offshore wells, which was the place that everybody visited was off Prince Edward Island, in 1941. They drilled an offshore well there.

JP: Was it Mobil?

CL: I believe it was. But it was one of the very few and we sent up from Trinidad, we sent up technicians because the idea was to drill out in the gulf between Trinidad and Venezuela.

JP: Were they there to help or to learn?

CL: To learn, yes. Now the whole thing again, stemmed from the fact that there simply wasn't any steel available during the war for any experimental types of operations. Everybody was just gung-ho to develop what they had and get as much oil out of the ground as fast as possible. So it wasn't until after the war that this began to become a real feature in the oil business. Of course, it developed in its supreme form in the North Sea but that was by no means the first. That was where the technical difficulties became of paramount importance. Since then it's blossomed into every country in the world.

JP: That must be remarkable, that North Sea development.

CL: It's amazing.

JP: You've been there and seen it.

CL: No, I have not. I tried to get in, we tried to get a concession. . . oh, we did have a part of one yes. But I wouldn't say that I have any expertise at all. It came too late in my life to be able to take part really.

JP: Now Chairman of a company now, extends your working period in the petroleum

industry a good deal does it?

CL: Not really I'm on a consulting basis. I occasionally do work in Houston and I do work here in Calgary. But no, I've pretty well retired now.

JP: You're having fun at it now.

CL: I'm just doing what I want and I'm back up in the mountains doing my exploration geology which I love.

JP: Oh you still do that, isn't that great.

CL: Yes, I love it.

JP: So this is where you plan to remain?

CL: Yes, I have a place down there at the Crowsnest and I work out from there.

JP: All told it's a wonderful span of activity. Well, thank you Charles, I think that's it and I thank you so much. Anything else you want to add?

CL: No, only . . . you know, I think there are so many stories one can tell but I think that you're looking mostly for an overview really.

JP: Yes. But if you have something that you can add to it delighted if you have one of your stories.

CL: I think we've about completed it, most of the rest is in the book anyway.

JP: All right, thank you so much Charles.