

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Ernie Shaw

INTERVIEWER: Nadine Mackenzie

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NM: This is Nadine Mackenzie speaking. This is the first interview with Mr. Ernie Shaw. Mr. Shaw, when and where were you born?

ES: I was born in Cardale, Manitoba, in 1908. I'll do the arithmetic for you, that makes me 75 years of age.

NM: What did your parents do?

ES: I was born and brought up on a farm, which was the homestead that my father took out in the 80's I guess. He was from England, he came out as a very young man and worked, first of all he got jobs on farms in Ontario. Then he came west and took out this homestead and started this farm from scratch. A few years later he married the local schoolteacher, who was from Ontario. Between the 2 of them they raised 8 children. I think I was #6.

NM: How many boys and how many girls?

ES: 6 boys and 2 girls. I didn't realize it when I was a boy, I didn't realize that we lived in a real pioneer situation you know, because I didn't know anything else. And I was always listening to my elders talk about the old days. It's only in later years that I have come to realize that I was brought up in a real pioneer situation. However I think that had quite a bit to do with me deciding to . . . it made me decide that there must be an easier way to make a living. So I vowed that I was going to get away from this real pioneer situation.

#045 NM: Was life very tough?

ES: In retrospect, yes. We worked very hard and there really wasn't very much in the way of social life. So I decided to strike out and go to college. The nearest college to where we lived was Brandon College in Manitoba, now Brandon University. So by the some help that I received from my parents, that is financial help and working in the summers and so on, I was able to get my bachelors degree at Brandon College. Now in those days Brandon College was affiliated with McMaster University of Ontario, so my bachelors degree was really issued from McMaster University.

NM: Are you the only one in the family who went to college?

ES: No, I believe I was the only one who got a degree however. I graduated from Brandon College in 1931 and, whereas I specialized in geology, the amount of geology that we were able to study at Brandon College was rather limited.

NM: Why did you choose geology?

ES: Why did I choose geology? I think it was through the influence of Dr. Evans, who was president of Brandon College and who was a PhD in geology, having received his PhD at the University of Chicago. He was a most interesting man and an extremely fine teacher.

The best teacher I ever had as a matter of fact. So he made the subject so interesting that it was very interesting for me to make up my mind to pursue geology as my life work. However I don't know what this has to do with the oil business.

NM: Well, it's the beginning of your life. How many years did you spend studying geology?

ES: I spent 4 years at Brandon College but of course, I took a general arts course and I took a little bit of everything, philosophy and psychology and history and English and what have you. So then I was saying before that after I finished, after I'd graduated at Brandon College I realized that if I was going to carry on with geology that I'd have to go somewhere else where they had more extensive courses. So I wrote a letter to the head of the department of geology at the University of Toronto. This was of course, in the Depression. I had no money to go to the University of Toronto and I told him that. I asked him if there was any possibility of me getting some sort of financial help and very much to my surprise, I got a letter back after a week or two saying, yes, they would be able to give me a scholarship. Now the scholarship only amounted to \$50 a month but that was big money in those days. More importantly, it included free tuition. So with free tuition and \$50 a month one could live quite well in those days. So that summer I was working in Saskatchewan for the Geological Survey of Canada and as soon as that work was over I took off to Toronto. Fortunately there was 3 other friends of mine in the same boat so I had friends down there immediately. 4 of us took part of a house, rented part of a house and we bached while we were going to school. That was in the fall of 1931 and I was just about, I had gotten my Masters degree in 1933 and I was just about to get my PhD in the spring of 1935 when, very much to my surprise, I was offered a job with the Geological Survey of Canada. This resulted from the fact that the then Prime Minister of Canada, R. B. Bennett, came up with a scheme of setting aside a million dollars for the Geological Survey in Canada to try and help develop the natural resources of Canada. So of course, they needed, that was a lot of money, so they needed all the geologists they could lay their hands on. So off I went to Ottawa and after a week or two I was assigned to run a field party down in the province of New Brunswick. So off I went to New Brunswick and spent the summer there, mapping the rocks in the general Newcastle area in the province of New Brunswick. I had 3 very fine boys from the University of New Brunswick assisting me. Then in the fall I came back to Ottawa, where I spent the winter studying the rock samples that we collected and writing a report on the summer's work. Then in the spring of . . .no, then in the summer of 1936, still with the Geological Survey of Canada, I was assigned to a field party in the province of Manitoba, where 2 of us were in charge of a large mapping program between the Ontario boundary and Lake Winnipeg and all the way north up to Norway House. We had 16 sub parties, or actually, we looked after 16 separate field parties.

#166 NM: That was a lot.

ES: Yes. We had an airplane to help out with our transportation problems. I can remember that most every day I visited a different field party in order to consult with the, by airplane.

NM: What type of airplane were you using?

ES: This was a World War I Falconer, no Falker??? I guess the name of it was. When it was being serviced we used a German airplane, very common name but I can't remember it now. After 2 years with the Geological Survey I decided I'd better go back to school and finish my studies for my PhD. So I went back to the University of Toronto on the 1st of January in 1937 and I worked pretty hard from then until about the 1st of May, after which I received my PhD.

NM: That was very quick work.

ES: Well, I'd done practically all the work beforehand you see. But I had actually, a lot of examinations to write and take a final oral examination. So I had to, in order to prepare myself for this oral examination particularly, I had to review all the geology that I'd ever taken. Because you were told ahead of time that they would ask you any question whatsoever in the whole field of geology.

NM: So that's a very broad subject.

ES: Yes, a very broad subject. However, the oral examination was much easier than I had anticipated. Because the professors who gave it to you, knew you. In other words you had studied under them for a number of years so I'm sure they had their minds made up even beforehand. That summer, the summer of 1937 I decided not to go back to the Geological Survey of Canada.

NM: Why?

ES: Why? Well, mainly because I thought that I didn't particularly think that a government job was what I wanted. So for the summer of 1937 I got a job with a mining company, prospecting in northern Quebec, prospecting mostly for gold.

#235 NM: Was it a temporary job?

ES: Oh yes, all jobs were temporary in those days. So after that job was over in the fall I came back to Toronto and reported to the president of the mining company that I was working for and the consultant and of course, one of the first things I asked was, have you got something for me to do during the oncoming winter. They said, well, of course, we don't do any field work in the wintertime so perhaps you'd be good enough to come and see us next spring when we're planning our work for the summer. However, I wanted a job right then so I went back, I went to Noranda, Quebec, where I had some friends of mine working for the United States Smelting, Refining and Mining Company. They worked the year round up there, up in the north country. So I talked myself into a job with them. This job I kept until the spring of 1941, at which time I felt that the war was getting serious then and I felt that I should be doing something to aid in the war effort. So I went down to Trenton, Ontario to enlist for training in the Air Force as a navigator. This was something that for some reason or other, that geologists seemed to, were considered to have been favourably trained.

NM: Because you have been using planes a lot of time and. .

ES: I suppose, yes. However, they welcomed me with open arms, then I had my medical and I was turned down because I had a slight, I've always been slightly colour blind. Partial green-red. So they wouldn't accept me into the Air Force. Neither did they feel that I should go into the Army or put myself into any position where I'd be stopping bullets.

They felt for some reason or other, they were greatly impressed with my education, so they sent me to Ottawa. I ended up in Ottawa with a technical job with an organization which represented both Canada and the United States. It was called the Inspection Board of the United Kingdom and Canada. They had several divisions but the division that I ended up with was tanks, the manufacture and inspection of military transport and tanks. This turned out to be mostly a matter of trying to become somewhat of an expert in the metallurgy of steel.

NM: Was it an interesting job for you?

ES: Yes. I moved around a great deal, I made an awful lot of trips, especially to the United States. I spent quite a bit of my time at proving grounds, particularly at Quebec, where they had proving grounds just outside of Quebec City. This was in testing steel, testing the ballistic quality of armour plate and armour castings. That means we would take that sample and actually shoot bullets down. So by and large, I ended up of course, I ended up with an Ottawa job, which was an office job in Ottawa, which concerned itself, I was head of a department there where it was responsible for research work in the manufacture and testing and so on, of armour steel and armour castings and so on. I ended up, in the spring of 1945, when the war was beginning to taper off, of all things, in order to summarize all the developments that had taken place during the war, in the . . .

End of tape.

Tape 1 Side 2

ES: Strangely enough I wrote my entire experiences with armour plate and armour castings and so on, I made a book out of it, I wrote a book on the subject. I worked under a British Colonel and I thought it was funny that my name didn't appear on the book at all but it was approved and it was signed by my Colonel.

NM: And you were the one that wrote the book.

ES: I wrote the book. And of course, copies of all this stuff went to the British government.

NM: What was the title of the book?

ES: I can't remember exactly, Production and Development of Armour Plate and Castings in Canada During World War II, something like that. By Colonel Hoor, and of course, he immediately sent a copy of this over to Great Britain with his name of it and I presume that he got quite a few brownie points back home for this book. Which of course, was top secret.

NM: Did you protest that your name was not on the book?

ES: Oh no, in the Army you don't protest, you don't protest to your Colonel. But that's all right with me. So while I was working on this book, this was January or February of 1945, I had a letter from Dr. Sproule, who was then of course, working for Imperial Oil, in Saskatchewan I think. Wanting to know what I was doing and what I had in mind after the war was over.

NM: Did you know him before he sent the letter?

ES: Oh yes, I went to school with him. Or I went to University or Toronto with him. So of course, this sounded pretty good to me because at that time it was obvious that the war

was coming to an end and of course, that meant that thousands and thousands and thousands of jobs were coming to an end. So it looked as if there were going to be, after the war did come to an end it looked as if there was going to be a tremendous race for jobs. So even though this was back in the wintertime I wrote to Dr. Sproule and I said, I didn't see any possibility of getting out of my present spot until some time in the spring and would it be. . . I'd like to hear from him and whatever job he had in mind for me, would it be possible, could he hold it open for me until the spring sometime.

#053 NM: What was he doing at the time?

ES: He was doing geological work in Saskatchewan for Imperial Oil. So at any rate I wrote back to him and said if, the Lord willing and the creek didn't rise that I'd be out there about 1 day after I got finished the job I was on. So I got finished the job I was on and I was already to take off for Calgary I guess. Dr. Sproule spent the winters in Calgary, that was right, he was in Calgary. So I was all ready to head to Calgary but there was one little detail that I had to go through and that was that I had to get approval from the Manpower Board in Ottawa. You couldn't just take off when you felt like it. So I went to the Manpower Board and I said, I understand that the oil exploration has an A priority. They told me, they said, it did until yesterday. So this set me back. I went to Dr. Hume, who was a big shot in Ottawa with the Geological Survey and the Department of Mines and he was infuriated. He didn't agree with it. So he went to the Manpower Board on my behalf and managed to get me approval to take this job with Imperial Oil.

NM: Did he succeed?

ES: Oh yes, oh, he succeeded.

NM: Who was Dr. Hume?

ES: Dr. Hume was a geologist. He's been on the Geological Survey of Canada many years in Ottawa and he had graduated to an executive position with the Department of Mines and so on. So he had a lot of clout in other words. So of course, I've been ever lastingly grateful to him for getting me released from the wartime.

NM: And how was Cam Sproule, as a man? I've heard a lot about his personality.

ES: He was certainly awfully good to me. He had his eccentricities but he had tremendous energy and he would give you the shirt off his back. I prefer not to get into personalities on this. I don't think it's very nice to be. . .

NM: He was a friend of yours.

ES: He was a friend of mine, yes. Like most of us he had some good qualities and some eccentricities.

NM: Like everybody.

ES: Like everybody else, yes. So that was the beginning, that was the start of my career with Imperial Oil. I always remember that I left Ottawa on my birthday, which was April 9th, 1945, and I was on my way by train out to Calgary, when the train stopped. The train stopped at every divisional point and I can remember, I believe it was April 12th when we got off the train for a little stroll at a divisional point in western Saskatchewan, I forget the name of the town. And the word immediately spread that President Roosevelt had died. This was quite a shock to everybody on the train, then there was a great deal of

conversation from then on as to who would be replacing him. Somebody seemed to remember the man by the name of Truman, who was the Vice-President and therefore he certainly would replace him immediately. I heard a lot of people saying, well, who is this Truman, I've never heard of him before. Anyway, about 1 day later I arrived in Calgary and reported in to Dr. Sproule.

#138 NM: Had you been in Calgary before?

ES: No, I'd never been in Calgary before. So in about a couple of weeks I was sent out to Moose Jaw, Saskatchewan, which was the headquarters of the work that Dr. Sproule was in charge of in Saskatchewan. I stayed in Moose Jaw for 2 or 3 weeks, preparing to take a field party out for the summer. Finally I gathered together a field party and we initially headquartered at North Battleford in Saskatchewan. And I worked out of there, long distances out of there, I might say, for the entire summer.

NM: How many persons were working with you?

ES: 4, including myself. And we mapped quite a large area in Saskatchewan, also we spread out into central Alberta. I'm sure you don't want, this is far too much personal. . .

NM: No, this is fantastic.

ES: When the fall came, the assistants that I had were all still going to school and they had to go back to university. So our field party broke up and I returned to Calgary, at which time I was told secretly that Dr. Sproule was due to be transferred to International Petroleum, which was headquartered in Toronto. International Petroleum was a wholly owned subsidiary of Imperial Oil, to look after their work in South America. I was told that I was probably going to be asked, on towards spring, I would probably be taking over in Calgary from Dr. Sproule, providing that I kept my nose clean in the meantime. So I worked that winter in Calgary in the headquarters here.

NM: How was Calgary in this time?

ES: I'll always remember that the first census that they had, which I guess was 1945 or 1946, the population was 96,000.

NM: It has changed.

ES: So there's been a big change. It was a very fine place to live. Working for a large company like we were, you had lots of friends, you knew a lot of people, automatically just knew a lot of people. It was just a wonderful size, it was like a small town. And in very short order it seemed as if you got to know practically everybody in town. Certainly everybody in the oil business at that time at any rate. Yes, it was a very pleasant place to live. Even though we had, in a way, it was certainly by today's standards, it was a pioneer situation really. For instance, we didn't have a car and you couldn't buy one. They were not yet available after the war. When Eatons got in a shipment of men's shirts, word got around there was a great line-up, just to buy yourself a shirt or a few shirts.

NM: Which year was this?

ES: That was the winter of 1945-'46.

NM: Can you tell me about the headquarters of Imperial in Calgary?

ES: I remember the building that I was in was on the corner of 4th St. and 7th Ave. I can't remember the name of it now but it's long gone at any rate. They had people in several

buildings. They were primitive I suppose, by today's standards but they were very adequate and very homey places to work. From then on, most of our work at that time was field work. In other words, there was the one big oil field and that was at Turner Valley. Imperial had an interest in the Turner Valley field as a result of having the controlling interest in the Royalite Oil Company. Many of the people in Imperial in those days had got their start in the oil business down in Turner Valley. But I think we're getting into, you know, too much detail. From then on, I was under the impression that you were going to, you were mostly interested in getting people's opinion on oh, various subjects, looking. . .

#270 NM: We are going to come to that. So you took over Cam Sproule's work?

ES: Yes. And in turn I worked under Jack Webb. Jack Webb was the exploration manager for the Calgary office. Dr. Ted Link was chief geologist but he was located in the Toronto office.

NM: Did you do a lot of travelling or were you staying mostly in Calgary?

ES: I was mostly in Calgary. I didn't do a great deal of travelling. One of the great trips that I had, and this was after the discovery of Leduc and we were very anxious to actually see reefs at the surface, where you could see them. So a number of us made a trip down, about the end of October, 1949 I think it was, we made a trip down to west Texas, where we were hosted by what is now the Exxon Corporation people. They had an office in Midland, Texas, that's in west Texas. They took us on a marvellous field trip, which lasted about 2 weeks, showing us the actual reefs that were at the surface there, where you could see them. This included a trip through Carlsbad Caverns, which was most interesting. In fact the whole trip was just exceptionally interesting to a geologist.

NM: What was the image of Imperial at the time?

ES: When I was growing up, Imperial Oil was sort of a household word in Canada. It was the big company and I think it had, I think generally speaking Imperial Oil had a marvellous image. Even when I started with them I think their image was exceptionally good. And they had the name of being a wonderful company to work for. For instance I can remember when I was going to school in Toronto, at that time, Imperial Oil was the only company in Toronto that worked only a 5 day week. They had both Saturday and Sunday off. There used to be a story around that that was the meaning of Esso, Every Saturday and Sunday Off.

NM: That's a good saying. So it was a very, very good thing to work for Imperial?

ES: It was regarded yes. Now I can remember when I was going to school in Toronto, it certainly, every secretary and accountant and whatnot. . .

NM: Everybody was dreaming to go.

ES: Yes. That was their ambition, to get a job with Imperial Oil. Every Saturday and Sunday off. And the pay was supposed to be good and so on.

NM: This is the end of the first interview with Mr. Ernie Shaw.

Tape 2 Side 1

NM: This is the second interview with Dr. Ernie Shaw. Dr. Shaw, can we go on talking about your life and your career?

ES: Yes, I continued working in the Calgary office right through to June 1950, at which time I was transferred to Imperial's head office at Toronto. The last 3 years of the 1940 decade were extremely interesting. As everyone knows the Leduc field was discovered in 1947. This discovery seemed to break the ice as it were, because the Redwater field, which was much bigger, was discovered in 1948 and the Golden Spike field was discovered in 1949. Also in these last 3 years of the 40's several other lesser fields were discovered. At long last these major fields convinced just about everybody that western Canada was an important oil province.

NM: Before that nobody really believed there was a lot of oil?

ES: No, that's right. I spent from 1950-1956 in the Toronto office of Imperial Oil with the title of exploration advisor. I still don't quite know what that means. My family and I enjoyed this period very much. I found it very interesting, even though I didn't get a great deal of geological experience out of it. But I met a great many fine people in the Toronto office and made many trips to the New York office as well as trips to such places as Venezuela, Los Angeles, London and parts of continental Europe. I returned to Calgary in 1956 and worked in Calgary for the most part, managing Imperial's foothills exploration, until 1973 when I retired, having reached the ripe old age of 65. This period of foothills exploration interested me very much. I like to think that I became somewhat of an expert in the foothills of Alberta and northeastern British Columbia. After my retirement I took one month off and my wife and I took a trip to Europe.

NM: Where did you go in Europe?

ES: I can't remember particularly because I've been there quite a number of times, we'll just have to let it go there. After one month I was persuaded to start working as a consultant with the consulting firm of JLJ, all former Imperial geologists and geophysicists.

#074 NM: What does JLJ stand for?

ES: Jordan, Lewis and Joos???. I carried on with them until 1979 when they all dispersed, either going to work with companies or going out on their own. Now that ended my . . . no, the end of 1979 my health caught up with me and so I retired once and for all. Looking back I have tried to think of personal highlights during my career in the oil business. But the period 1945-'79 just adds up to a whole string of highlights which was the most interesting time of my life. Before leaving my personal history I would like to mention something about my family. I was married to the former Margaret Elliot of Dundalk, Ontario in 1941, while I was on war work in the east. Our subsequent family consists of Gerry, who is in business in Calgary.

NM: Oil business?

ES: No, brokerage business. David, who has recently moved to Houston, Texas and our daughter Kathy, who is married and lives in Denver. Each of them have provided us with 2 grandchildren. I can say that our family has been and still is, a great joy to us. Now I

would like to dwell on the industry highlights as I see them in retrospect. Strangely enough, the greatest highlights in the oil business as I see them, have been some colossal failures. But perhaps this is inherent in the business of oil exploration. Because one success in ten is usually considered normal. That is, you're doing all right if you make one discovery in 10 wildcat wells. I should review the past by decades to illustrate or demonstrate what I mean by this alarming statement. As I said before, the late 1940's established western Canada as important oil country. The decade of the 50's was characterized by a rapid spread of exploration throughout the provincial areas of western Canada. Dozens of companies, mostly from the United States, came up to western Canada and dozens more were organized and promoted. It was a very successful decade and discoveries were made in all 4 provinces. Perhaps the Pembina field, discovered in 1953 was the only giant field but new discoveries came in a steady stream and maintained the interest of the participating companies. All of this, in spite of the fact that the prices for oil

#196 and gas were ridiculously low in present day terms. The decade of the 60's, for awhile, was a continuation of the 1950's pattern. But very early in the decade explorationists were experiencing increasing difficulty in finding new plays and so they began looking farther afield. Enter the frontier areas, such as the Northwest Territories, the Yukon, the Arctic Islands, the Arctic Coast and offshore. Pacific offshore and the Atlantic offshore plays which consisted of Scotia Shelf, the Grand Banks of Newfoundland, the Labrador Shelf and the Baffin Sea. Collectively these were referred to as the frontier areas and many companies organized special groups of people to carry on exploration. Primary exploration results in these areas looked very promising. More and more money was budgeted for these areas and less and less for the established areas across the southern part of the western provinces. Next the decade of the 70's. The high in anticipation came in 1971, when the CPA set up a geological committee to assess Canada's potential oil future. Whereas this covered all the potential areas in Canada, including those which had been pretty well explored, it was primarily an assessment of these frontier areas. This committee, like most of the rest of us, got carried away and came up with simply astronomical estimates, which they unwittingly developed by pseudo-scientific methods and presented the results in probability curves. The management of CPA accepted the estimates, apparently with few if any doubts, and communicated them far and wide, apparently with little thought of the great disservice they were doing for the industry. Government's, both federal and provincial became very greedy and gradually imposed almost impossible taxes and royalties on the industry. The drilling phase in the frontier areas was in full swing and failure after failure resulted but there were just enough successes to spur them on. Further discoveries will still be made but already, colossal failures have ensued. Just as unfortunate was the fact that these wild estimates greatly discredited the geological and geophysical professions. Just to run through some of the most notable failures, approximately 13 deep, expensive wells were drilled off the Pacific coast and they were all dry. Many wells were drilled in the Yukon and Northwest Territories and this enormous stretch of country, to this day, is still a one oil field area and that is Norman Wells, which was discovered in 1921.

NM: This is the end of the tape.

Tape 2 Side 2

ES: The Arctic Islands, in my view at any rate, have been a great disappointment. After years and years of good exploration and dozens and dozens of wells, the booked reserves are only 13 ½ TCF of gas. The small amount of oil that has been found is not carried by the CPA as an established reserve. Now this is a fair amount of gas but it won't be commercial for a long, long time. The Atlantic offshore plays, which were perhaps assessed most highly but after a large amount of seismic work and dozens and dozens of wells, one oil field, Hibernia has been found, which is estimated at 1.1 billion barrels. The Sable Island area is estimated by Mobil, the main operator, at about 2½ TCF of gas. This is but a mere fraction of the estimates or the predictions that were made by the geological committee in 1971. The Beaufort Sea discoveries have been hailed as indicative of a second Middle East. But as far as I'm concerned the jury is still out on the Beaufort Sea discoveries. I suspect that most of them, for a long time to come, will be non-commercial. The remaining reserves for western Canada peaked in 1969, at 10.5 billion barrels. The end of 1982, that is 13 years later, there were 5 1/4 billion barrels. In other words, exactly half. This in itself is an indication of colossal failure in most parts of the frontier areas. 10-15 years ago we heard a great deal about the energy crisis and rightly so. The general public seemed to believe us to some extent at that time. Now in 1983, we are down to 5 1/4 billion barrels in western Canada, that is, exactly half of what we had in 1969 and in eastern Canada we have the 1.1 billion barrels at Hibernia. Strangely enough we don't seem to hear much about, or anything about, the energy crisis nowadays. And even though the price is out of sight people keep on buying new cars and using up these remaining reserves at quite a rate. In my view, we should be scared stiff because we are much more dependent on the Middle East than ever. But we have no line-ups at the pumps and the super optimists have lulled us into complacency. Besides, all the reliable oil people lost their credibility 10 years ago. That's about all I had in mind.

#110 NM: Can I ask you, how do you foresee the future of the oil industry in Alberta and in Canada?

ES: I think it's had its best days and of course, the provincial government of Alberta seemed to be acting on that basis. The Alberta reserves and the production has been falling for quite a number of years now, at a pretty rapid rate. And I see no possibility of it ever returning to anything like its former self.

NM: It will never be the same again?

ES: No. But the reason why I feel very scared of the present situation is that both in Canada and the United States, we are more and more dependent every year on the oil from the Middle East. The Middle East is an extreme trouble spot in the world.

NM: For political and economical reasons.

ES: For instance, if the Iranians block the Ormoos??? Straits, a third world war could easily be started. I consider that a much more dangerous situation than the present invasion of

Grenada, the troubles in the Central American countries and so on. So that's what I have, is that enough?

NM: Looking back at your career, Dr. Shaw, who was the most influential person in the oil patch for you?

ES: Do you want me to repeat what I said before. I think perhaps it was Jack Webb. Of course, he was a very close friend of mine. I think most people thought he was much too conservative to be a good oil man but I think he did a great deal to temper my natural enthusiasm, perhaps over enthusiasm at times.

NM: What do you consider your achievements?

ES: My achievements? Well, I like to think that I have made some contributions. But I think I'd rather not talk about them.

NM: Here is the last one, looking back at your career, is there anything nowadays you would have done differently?

ES: Do you mean just in the oil business or. . .? I think maybe there are a great many things that I would do differently were I to have it to do over again. I started in the oil business pretty ignorant of the oil business. So as I gained experience I did what I did at that time, on the basis of what I knew at that time, and my judgement at that time. And thus I guess I wouldn't have done anything different.

NM: Thank you very much for this very interesting interview, Dr. Shaw.