

OFFSHORE ENERGY CENTER

ORAL HISTORY PROJECT

**Interviewee:**

RON GEER

**Date:**

September 21, 2002

**Place:**

Houston, TX

**Interviewer:**

Dr. Joseph Pratt

Side A

JP: This is an interview with Ron Geer at the OEC Hall of Fame. Today is September 21, 2002. The interviewer is Joe Pratt. Ron, we have detailed stories from you about Bluewater 1 and Rudac. We have talked with you at length about the Shell School for Industry. It would be interesting today, I think, to pick up from there and tell the story of what comes next at Shell within the industry in the 1960s.

RG: Well, after the School for Industry, the principals who were involved in Bluewater 1 activities in New Orleans were disbursed; namely, Bruce Collip, who was involved in Bluewater 1 and part of the team I had in New Orleans was transferred to California to head up an activity out there because Shell in California was privileged to have a greater portion of offshore acreage than any other single company on the state lands all up and down the coast of California, Oregon, and Washington.

And so, there was a big push to develop a capability of drilling in that environment, which was a lot different from the Gulf of Mexico. The maximum wave height was only about 45 feet. But, since the water depth increased

rapidly as you went slowly offshore, when you got to the three mile limit, which was the extent of the state lands, you could be in several thousand feet of water. So, the big push was to provide a capability on the west coast that had been originally developed in the Gulf.

Initially, the drilling activity out there was done by the CUSS 2, which was subsequently renamed Glomar 2, but it was the vessel that was used to drill in Alaska in the summer time. And then, when winter time came, it was relegated to go south and drill exploratory holes up and down the coast and made the discovery well at Molino by 1962 or 1963. But, as a result of the focus of activity on the West Coast, after having focused on the Gulf of Mexico and getting that operation going, Bruce went there and I went to New York on an assignment. This was prior to a proposed assignment I was going to have in The Hague to take some of this technology to The Hague and further train the groups' activities in this type of business

When I got to New York, the people there were concerned about the fact that we had embarked on two systems approach initially. It was Ned Clark's vision that the rewards were so great that it justified having the two programs going on - the one at Shell Development and that then transferred to New Orleans, and before that, the one

that paralleled it was going on in California under Bill Bates and Howard Shatto; they were developing that activity.

It then became evident that we had two somewhat dissimilar, fundamental approaches to how we drill and complete wells in ever increasing water depth. So Burt Easton in New York, who was the vice-president of production at the time ... prior to that, he had been the director of research at BRC... it was under his direction that all of this technology initially developed and he subsequently found himself as the vice-president of production. So, Burt, having known what I had been doing and what Bruce had been doing, requested that I put together a plan of how these two technologies could be put together in a complementary way. Could we get the best of each system.

I was asked to design or develop a plan and an organization that would foster the marriage of the two systems. And I did. I was given the freedom; 'Just tell me what you need, who you need, when you need it, and when you will have the results.' I had a blank check and full support.

Quite frankly, at the time I put another person's name to head the thing up because I was assuming I was going to The Hague as I had been earlier instructed. So, when I got this program all put together, we had a presentation to Ned Clark who was the executive vice-president of E&P, and Ron McAdams who was exploration president; and also Burt Easton. When we got through with the program meeting, Ned Clark said, "That sounds very good to me. Let's have at it!" As we got through, we went into Burt Easton's office and he said, "When are you going to be in California?" I had not even planned to be in California I had planned to be in The Hague, but I told him, "Well, I will have to think about that."

To make a long story short, I went to California to head up and bring this thing together and form what was called the Marine Technology group. That was in 1964. I was in the head office in 1963. I left there in October of 1963 and went to California as the number two man in the mechanical engineering group, and subsequently put the organization together. I was all part of a head office organization. We were domiciled in California in the West Coast, and we used all the administrative facilities there. We were a head office as such, we started working on putting the system together and designing a marine riser system that would allow us to go into 1,000

feet of water. Prior to that, the maximum depth of water that we had capabilities in was about 600 feet. But, the water depth out there has been so great that the push was to exceed that. And so, we did.

In the meantime, Bruce worked on and developed Bluewater 2 which went into operation about 1964 or 1965; I cannot remember the exact date, but in that time frame. We married those systems together and we were responsible for the total technology for deep water for the company as a whole. And that was SIPM, Shell Oil Company, etc. SIPM paid a pro rata share of the cost of doing this, providing its operation. I left there in about 1966 and became the chief mechanical engineer in the West Coast Art Williams, who was the chief engineer there, moved off to a production manager's job and I became the chief engineer there.

As a side step to your question about the Arctic . . . we had a group of people out there looking because we made a discovery in middle ground and there was a push on to design and develop an ice-resistant structure that would withstand 12 million pounds of lateral force. That was the design criteria based on the wracking up of a certain amount of ice depth - how thick the ice would be and then the loads on it based upon the current flow. The inlet

current is quite severe, up to as much as 13 knots, and the height of the inlet tides were anywhere of 30 feet, you had to worry about a quite sizeable side load on the structures.

The first structure was platform A, which Dillard Hammond was directly involved with. That structure was in the process of being installed in 1964 when the April earthquake hit Cook Inlet. Fortunately, it did not do any damage. It did a lot of damage to the coast line as far as sloughing off in buildings, but the structure was able to withstand because it was designed for seismic loading as well as ice loading. That was the first platform up there. Subsequent to that, in 1966 we started the second platform, which was platform C. In the meantime, Chevron designed and built platform B, which was the middle ground shoal, so there were three platforms in the middle ground shoal.

We put in platform C and, as a result of that, there was a need to pipeline the oil to shore. There was some gas developed, but gas prices in those days were only worth about 3 cents an mcf at the wellhead and it did not justify putting in a pipeline. Plus, the currents in Cook Inlet were so severe that the ability to lay a pipeline and have it remain on the sea floor was

significant. I was directly involved in arranging for the engineering to be done for that pipeline. Bob Visser, who worked for me, was the project engineer on platform C when it was installed in Cook Inlet. He was also the project engineer when we put in the first pipeline at Cook Inlet. It has stayed there... this was in 1968, I guess. But Shell made a movie of that called "At Slack Tide Only."

In any event, the problem is that it was only about 2-1/2 miles from the middle ground shoal to shore, but the tides are so great and the shifting of the bottom was so pronounced under the scarring conditions of all the rock floor and everything that came out with the ice that the pipeline had to be stabilized. And, the only time that you could move the lay barge was during slack tide. On that barge we were working 24 hours a day around the clock, time and materials. It was not a contract job. McDermott could not take the risk. They did not know enough about it. So we took the risk.

We did it on a time and materials basis. There were 200 men on the barge laying the pipeline from shore and out to the platform. The only time we could move it, as I said, would be when the tide was slack. You had 30-45 minutes ... you had to be on location, the pipe well



had to be ready to lay off and move ahead, and that pipe was laid.

One tug was lost. A tug was pushing up against a barge to keep the barge against the current. We had mooring lines out, but it was not capable of withstanding the loads on it with the current. That tug rolled over and sank. Nobody got hurt. People worked 24 hours a day. In fact, we had a timekeeper going around talking to each one of the fellows on the barge, the working people, during the time they were on it; they hotbed it. You would have one crew in the sack and the other crew out working, and vice-versa.

We had one guy . . . we asked him how many hours he had worked that day and he said "25!" There were some guys that worked double shifts. They just worked until they dropped. The timekeeper, he said, "How many hours did you work?" The guy said "25." He said, "Hell, there are only 24 hours in a day." He said, "O.K., then, put down 24!" But the point was, it was a can-do activity. That pipeline has paved the way for other pipelines in the inlet.

Following that, as a side light to what you were saying about the Arctic business, Shell was very active in that

operation up there and had been up until, I guess the late 1970s and early 1980s, maybe mid 1980s. The production of the middle ground shoal started dwindling. The price of the barrels did not improve much. There was a lot of gas there, but as I said earlier, it was not valuable enough to justify putting a pipeline in to bring it ashore. All those operations were subsequently sold to another company.

Shell was active on the west coast in the Gulf of Alaska, too. We had a dominant position. Amoco was a joint venture partner with us. Chevron had been a joint venture partner in the middle ground shoal. We had a lot of activities and I worked very closely with Carl Dawson, who was the chief engineer for them, all of their other engineering people, and for the Chevron research people at Lahambra. Larry Fasher, case in point; Larry and I were very good friends and worked very closely together. Prior to him becoming the vice-president of that organization, he was initially an oceanographic engineer and did a lot of work in waves and currents and stuff of that nature. Subsequently, because of his capabilities, he rose up into the administrative ranks and became a vice-president.

Talking about Larry's and mine and Carl Dawson's

activities with the offshore conferences - I do not know whether this is sidetracking too much, but it is a sequence of activities that took place. In the 1962/1963/1964 time frame, there was a fellow by the name of Mort Richardson, who was a naval academy graduate from Annapolis, he was deeply involved in marine technology. He had put together an offshore dredging conference that had been reasonably successful and, as a result of that, he saw a need for a platform or a base for discussing and exchanging technology on the offshore drilling and production end of the game.

And so, he got together with ... I forget the fellow's name now; he is dead now. He was one of the fellows that designed and built the weight indicators that were on every rig in California. Anyhow, Mort knew me and he knew Larry, and so he asked Larry and I to serve as the technical program committee to put together OECON, which was Ocean Engineering Conference 1, and OECON 2, which were in subsequent years. And so, we did. We put together the technical program and orchestrated all that and participate in it.

During that time frame, Mort was making a good bit of money out of this activity. It was a commercial venture for him. I have nothing wrong with that. I mean, he had

a good idea and he pursued it. The thing that Larry and I got disturbed with was the fact that we were doing all of his damned work and he was clipping all of the coupons! I was not envious of the money he was making but I thought it was not proper. They were using us as a basis for getting all of our friends to come participate. So, we collectively said that we thought there ought to be a different form. It ought to be a multi-activity; that is, it ought to be a multi-technical society venture, a nonprofit organization . . . although SPE became a very profitable thing, and all of the societies that participated in it and currently participate in it receive significant revenue from it. And that is fine. But as a result, we told Mort we were not going to support that anymore. We told him we were through with it.

Carl Dawson was very active in SPE at the time. We talked to Carl and laid the groundwork in 1967 and 1968. And so, between Carl Dawson's activities and other people's activities, this is what formulated the basic concept of OTC; OTC's first year was 1969. Dick Nelson with Shell Oil Company was the program chairman. Dean Cox actually did all the work. He was the coordinator of the program and it was held down there at Albert Thomas Hall.

But basically, that was the fundamental undercurrent, if you will, in how the OTC got initiated from the OECON thing. I mean, there was a lot of technology exchange there, a lot of good technical papers, but it went by the wayside. And OTC, of course, came on strong.

JP: Talk a little more, if you would, about the first OECON meeting. Was that in New Orleans?

RG: No, OECON's first meeting was in California. The weight indicator is named after the individual who was the principal sponsor; in other words, Mort Richardson used him as the mainstay because he had industry-wide acceptability. He was extremely well-respected; he was a technological innovative individual. I am trying to think of his name. Well, I just cannot right now.

JP: Tell me, how was he making money off of this?

RG: Commercially, I know that he was charging them a fee for putting this on. He charged the organization. And, of course, he got a portion of all the admission fees. He wound up with, I think it was \$75,000 or \$85,000 out of each one of these income for a little administrative work. But, all the fundamental program part was between Larry Thrasher and I. We knew people in the industry who

had knowledge to write papers and stuff like that.

JP: About how many people attended those conferences?

RG: My guess, Joe, is that it was probably between 150-225 people at that time. Not anything like the OTC. No

way. JP: It was still a substantial amount of people.

RG: Yes, it was a substantial number of people. The first one was held in Long Beach, California, at the Long Beach Convention Center. I think the second one was held there, too. I cannot remember.

JP: As the OTC has grown so large, in these OECON meetings, were there more focused issues you were dealing with? Was there a dominant issue?

RG: No, it was more or less in keeping with the breadth of the diversity of the programs that go on at Offshore Technology Conference. It was of that same general flavor. There was not any single focus. I mean, there were oceanographic, meteorological presentations. There were equipment presentations on a specific piece of equipment. There were drilling techniques, but not near the number of papers because it was in its infancy and,

of course, OTC has bred, quality-wise, a very high quality technical forum. It has become a very highly sophisticated technical forum with extreme, cutting technology being made available to the public at that time, but that was in 1963 and 1964, and maybe 1965. I do not remember exactly.

JP: We can look that up.

RG: That was the gist of it. And, as I said, the main thing is that we just did not think that it was right. Larry Thrasher and I thought that there ought to be broader involvement of the Technical Society. In the first two, to my knowledge, other than mooring system geology consideration, there was no geological part. There were no geophysics and stuff like that. Fundamentally, it was oceanographic engineering, mechanical engineering, rig engineering - things of that nature. I do not think there was any geoscience. There could have been, I cannot remember.

Going from there, Bruce was successful in getting the Bluewater 2 to go and we had a total system put together. The marine technology group was successful in building a system with marine conductor capability to drill in 1,000 feet of water at that time. Shell was very active and

drilled a number of holes up and down the West Coast. Unfortunately, none of them were prospective to the extent that they had commercial hydrocarbons. And then, in 1968 I think it was, they had an offshore lease sale there in the Santa Barbara Channel - a large sale which the industry was really geared up to participate in. The water depth was 3,000 feet and we had equipment on the rig to drill in 1,000 feet of water, and we had the technology to extend that to the 3,000 feet. So, the question was, could we lay a pipeline? We worked very diligently.

I was chief engineer at the time and Norm Montgomery headed up the marine technology group. The question was, was Shell going to be able to ante up enough money to make it worthwhile? In other words, were the big values going to be such that we could make a buck at it? I got called on a Sunday. The exploration people were working on the bids for the sale which was to be on a Monday; Monday or Tuesday. Anyhow, I got a call at home on a Sunday from Jack Doyle, who was my boss, because he had been asked a question by Jerry Burton, who was the vice-president of production of the West Coast ... Jerry was previously an exploration geophysical engineer.

The big question was: How confident are we that we can



lay a pipeline in 3,000 feet of water? One of the largest prospects came on in shore in a little shallower water, but the major portion of the prospect was in 3,000 feet of water. And the question was, how confident are we? I told them, "No problem." I said, "It just took a little time.

We have got the technology." We had already laid some experimental pipe in the Gulf of Mexico and we knew all the things that needed to be known about the stresses in the pipe and how to get it down there, what the cost was going to be and everything. It reassured them. So, they went back to the drawing board, screwed up their courage and bid on it. But, they were not successful. They did not have the same degree of confidence that Exxon had. Exxon had a stronger vote, if you will, in their organization as to what the property worth and they outbid Shell by a good margin. When they announced lease sale that morning, well, by 11 or 12 o'clock Shell knew that they had lost out.

I criticize Jerry Burton in this respect. He jumped the gun. He was very concerned because Shell's activities in the West Coast at that time were getting to be marginal, from the standpoint of justifying and supporting an organization out there. We had some of the largest

undeveloped reserves in the heavy oil sands and stuff, but the near term was that we were going to have to add to the reserve position if they were going to be able to justify containing it. I will tell you a little story about that later, with regard to how we did some stuff in the Arctic.

Jerry Burton got apprehensive that he was going to be hung with this contract on Bluewater 2. I think it was a five-year contract at the time and it still had, I think, two years to go. Anyhow, he called the Humble/Exxon people up and offered them Blue Water 2 with all of its technical capabilities and Exxon did not have it. They had no way of drilling at that point in time. They had confidence that, in time, the technology would be available to them, but they did not have the answer. I mean, we had the answer in hand.

Where I criticize Jerry Burton, and I told Jack Doyle this, I said, "Jesus, we had an ace in our hand and we could have negotiated a partnership with him, a farm in, and drilled the damned wells!", which we did in subsequent cases. But, turn loose a Bluewater 2 and got out with money with that contract was what he was concerned about. Let it all go. That was in 1968. So, that technology, which we had developed and had the

capability, was lost, from the Shell standpoint.

We did not have it in our subsequent activities on the West Coast offshore, other than when we got in the Gulf of Alaska. That was a different thing because, here again, the Gulf of Alaska had what was referred to in the industry as "whale-sized" geological formation - huge monster formations. We contracted with Sedco to build a new rig, which they did. That rig was put to work up there with Amoco and subsequently, unfortunately, there was nothing there. There had been oil and gas there years ago, but the geological features were... it was too cold and it was not conducive to hydrocarbons as far as anything. So, Shell sort of moved out of the West Coast.

In the meantime, Shell of Canada was involved, too. We trained all the Shell of Canada's engineering personnel, including their management, on offshore drilling operations on the West Coast. In fact, I was directly involved with that. I had them assign to my organization three engineers that came down. We taught them everything they needed to know and they worked on the rig so that they had firsthand experience.

And then, we arranged to have their management come down

and stay on the rig for several days during some very severe weather conditions. I told them, I said, "You need to understand how these operations are because you are going to request these guys to do things which cannot be done and you need to be able to appreciate what they are up against and do not ask for the moon when, in fact, you cannot get off the ground." So, they did. They came out and they got well-experienced and they understood what they were up against. They had a rig in the West Coast working for a number of years. But here again, it was the same thing off of the Vancouver Island area; that was, unfortunately, nonproductive.

JP: What was the subsequent history of the Exxon track?

RG: They built a structure out there, Hondo. What his name that is with Exxon - the vice-president of production? Terry? I forget Terry's name right now. It starts with a K, I think.

JP: Koontz?

RG: Koontz. I know Terry real well. Terry was a young engineer working out there. He and I worked together on some things with Exxon because we had a close working relationship between our sales and Exxon production and

Research. Claude Halcott was vice-president then. He is dead now. Claude and I worked together on a number of things along with a number of their engineers because there was a mutual respect and a sharing of technical capabilities between those. And when we transferred this rig over, of course, we had to train some of their people and "hold their hands," so to speak. We were paid, I mean a token, but we were paid for the services. But, it was peanuts compared to what the potential would have been if we would have kept the rig and formed a joint venture with them. But there was an awful lot of anti-oil activity in the Santa Barbara Channel at that time and there still is, as you well know. It is unfortunate, but that was the case.

JP: When I listen to you, it sounds like the mid 1960s might have been about the most exciting time imaginable, with the Gulf technology, the new California challenges, the new Alaska challenges, and then, towards the late 1960s, the North Sea starting to become real.

RG: It was. The whole industry's tempo at that time was gung-ho. I considered myself very privileged, along with all the other people that worked in that environment during that time frame, because you were really only limited by figments of your imagination. There was top

management under Ned Clark, who was a very strong visionary person, a very can-do person and he gave all the leeway to his troops that he thought could do what needed to be done. He gave them all the support; financial support, people, whatever, to do the job.

With regard to the West Coast, those activities were running wide open. The Gulf of Mexico was running wide open. A lot of the technology was being transported to the North Sea. I negotiated the first contract for the first steel structure in the North Sea with a group, brand A structure. We sent our personnel over there, allow by the name of Lowell Johnson - I know him very well - he went over there as a lead engineer. He subsequently started his own business in Tulsa. Lowell Johnson went over to work at Lofstof (?) in the design group with them. I negotiated the contract with the SIPM people for us to do the design here in the states to transport the design over. That was the first steel structure.

During that time, Lowell was instrumental in doing the design work on the first concrete structure. He spent a good bit of time over there. After that, he came back, subsequently quit Shell and went into business for himself. He had Lowell Johnson and Associates in Tulsa

and did a lot of work for the company as well as other people. A fellow by the name of Jimmy Mayfield, who was deeply involved in COGNAC, worked for him and I think stayed on Shell's payroll as a paid consultant, for I do not know how many years; he may still be, I do not know. Jimmy Mayfield was a very, very capable person and Lowell, in himself, was a very capable person.

That whole technology blossomed and was transcended from here. Of course, the drilling rig technology likewise took place. A lot of the work came from here and was taken to the North Sea. The jack-up rigs that went over there that were heavy weather rigs . . . the North Sea, of course, had a weather spectrum that was significantly different than anything else. And so, one of the most critical things that had to be determined early on with regard to wave loading was to find out what the maximum wave conditions were and the wind conditions in the North Seas; and, they were very severe. So that played a dominant role in the design criteria that went into these structures.

The SPAR technology that was eventually put in place in the Brent field, the Brent SPAR, that technology evolved out of the marine technology group I had. Jerry Graff was a naval architect. The Hague assigned one of their

people to our organization in order to get up-to-speed on the technology, so Jerry was working on that. He created the concept that is patented in the United States. Although other people have been thought to be some of the first, he was actually the first inventor of the SPAR technology. He went back subsequently to the group and, eventually, they built the SPAR.

It took quite a while for them to screw up the courage to do that and use catenary flow lines from the SPAR. That was the first application of those which is now pretty commonplace in the Gulf of Mexico. But all that technology initially evolved out of the Marine Technology group and was transported to various places; the idea was to use that group as a technology development group, but also as a training ground. So, we had a lot of people from various organizations in the company - Shell, SIPM, Shell of Canada - come get educated, make a contribution, develop techniques, then go back and put that into practice.

JP: When I look at the Shell School for Industry, and then you start talking about what is going on all around the world after that, how in the world do you place bets on what technology you need to develop in an era when there is so much going on in so many different places?



RG: What we did, and one of the things that I was responsible for, was to make a forecast of technology needs; in other words, exploration in order to do their job of looking down the road at geological features in various water depths in order to be ahead of the competition, or at least equal with them. We had to understand when a given technology would be necessary for developing a prospect in a given location - whether it was in the Gulf of Mexico, in the North Sea, in the Bass Strait, off of New Zealand, South China Sea, Alaska, wherever. One of the things that I was responsible for was to make a forecast of all of the technologies associated with various locations.

I wrote an API paper in 1973. I made a forecast of what technologies would be available, or what time frame under what conditions, and looked at the ocean margins all over the world in order to see what technology would be required at what water depth and what the potential was. The case in point is that, in about 1984, there was forecasted to be about 28 billion barrels of undiscovered oil and about 167 trillion cubic feet of gas. At that point in time, that was about equal to or greater than what had already been discovered worldwide. So, half of that potential reserve was thought to be in water depths greater than 660 feet.

So, what you had to do was look at what technology was amenable. Bottom supported platforms were good out to a certain depth, and we went to the extreme limit with Bullwinkle in 1,300 some odd feet of water. And so, what we tried to do was to look at the various hunting grounds around the world - not only in the United states, but around the world. We looked at what technology would be most applicable because, you go to 660 feet and say, O.K., bottom supported platforms, and in most cases, it would probably be the best technology economically speaking. Then, we go from 660, to 1,000, 2,000, 3,000, 5,000. I made a forecast up to 10,000 feet of water and predicted where industry would be by the year 2000, and we were there. Everything I had predicted took place in that time frame.

We also forecasted that offshore production which, in 1984, cost us about 20% of the total production worldwide, onshore and offshore ... was expected that by the year 2000 it would increase to 35% because onshore production was declining. But, the offshore would increase by 35%, and I forecasted that by the 2020 it would be about 65%. And, quite frankly, I have not done any analysis or read anything since I worked this out for the company's inside benefit; I do not know where it stands right now - how close it is to that.

But, my forecast on the technology hit it right on the money.

I made a presentation to John Redmond, who was executive vice-president of E&P at the time, because exploration needed to know where they should prioritize their activities. They wanted to know where the best hunting grounds are in an economical sense in what we have to have in the way of equipment and technology to be able to accomplish that, because there is no use of buying property if you cannot develop it. So, the present day value of money came into play in terms of what is the economics of this venture versus that venture? It is a trade-off. I made a presentation to John Redmond at that time. John Redmond was a supportive person who was a visionary such as Ned Clark, and his comment was, "We will be number one in the offshore." That was his commitment, to be number one.

So, the technology, in keeping with that, is what we have done. That technology that I looked at covered platforms, floating drilling operations, ice-resistant structures, underwater completions, and TLPs. I looked at every particular technology in order to see where the economics were, and would we be in a position to use or have that technology at our fingertips when the need

arose? I did that because, as you know, most of the offshore property in deep water take up to 10 years to develop and in shallower water, maybe in 1,000 feet of water, you can probably do it in five years. But as you get into deeper water and when you get in the Arctic, it's another whole ball game. That was the driving force.

I made this 20 year prediction and it was unreal how accurate it was. I was asked in the late 1980s if I would make another 20 year prediction. I said, "No, I am going to retire!"

JP: You said 1973 . . . do we have a copy of that paper?

RG: I have a copy of it and API should have a copy of it, too, but it was given in Denver, Colorado. I do not know what the date was, but it was the API annual meeting in Denver, Colorado in 1973.

JP: What approximately would have been the title?

RG: It was, "Offshore Drilling and Production: Where Do We Stand And Where Are We Headed?" I think is the title. I have got a copy of that paper in that box of stuff along with a keynote address I gave at the Boss Conference at MIT in 1982 that does a similar job of forecasting. This

paper I did was in conjunction with our internal business to give our company the benefit because, as you know, when we had Bluewater 1's operation initially and we bid on property out there which no one else bid on because it

End of Side A



Side B

RG: ... our bonus money back. But, we did not want to get in that position again and that is of course, what initially led to the school being given.

If you want to talk a little bit about the Arctic activities . . . we drilled a well in 1969 in what was called Lake 79. It was up in the Beauford Sea area. It was a wildcat. Here again, Shell's activities needed to develop new reserves if they were going to stay a self-sufficient area operation. Jerry Burton was not certain how to play this game because there was a lease sale coming up in a certain time frame. Actually, it was in about six week's time at the time he started.

Jack Dole, who was production manager and my boss at the time, his comment to Jerry was that if he enjoyed his job as vice-president in the Pacific Coast area, he needed to do something exploration-wise to add to the reserve position; otherwise, his job might be in jeopardy. Jack Doyle told Jerry Burton that one afternoon and then he went on home for the end of the day work-wise. That night, about six o'clock or so, Jerry Burton called Jack on the phone and he said, "Were you serious about what you just said?" Jack told him, "Jerry, I am very

serious. We have a fixed reserve position and is declining; it is not growing. We have a marginal operation out here. We have got the largest potent 1 reserve of the whole company, but we do not have anything that is bookable right now. So, if you enjoy your position as vice-president, we need to add to it. We need to participate in some of these exploration plays."

We had bought some property years ago up in this particular area where this lease sale was going to be held, but we had never done anything about the exploration ... just cooled the thumbs at that point in time. So, Burt got on the phone and he called Ed Christianson. Ed Christianson was the executive vice-president. I do not know if you know him. Big Ed was his name. He was a huge man, an exploration-type person. Ed was in London. Jerry called him on the phone and got him out of bed at about two or three o'clock in the morning and he said, "Ed, we are going to drill a well. We are going to plan to participate in a lease sale. I just want to let you know." Well, he was not asking anybody. In essence, he was kind of feeling him out to see whether he was exceeding his bounds or not. Big Ed said, "Sounds good to me!"

He did that on Saturday morning. By noontime Saturday,

Doyle called me at home and said, "You had better get your thinking cap on. We have got to put a rig together and we have only got 30 days to do it in. We have got to put a rig together and drill a well." I said, "Fine." I worked all day Sunday. Monday morning Ray Millott, who was a drilling superintendent on the West Coast at that time, and Bud Furry, who was the drilling foreman, and myself and two other engineers, sat down and started planning this rig. Parker built the rig and put it together for us in Tulsa. It was built in a 50,000 pound package so that we could carry it on a C130 aircraft; we made an ice runway up there.

To make a long story short, we put the rig together, put it on location in 30 days time, and started the well. One of the biggest problems of drilling in the Arctic is the frost. You lose the hole if you are not careful. So, you have to make sure that you do not wash the hole out going down and lose the hole. Texaco had drilled an offset well. They were just one location over, and they had started their well two weeks before we did. They tried to prevent us from clearing our location because we had contracted with the people who had the earth moving equipment up there in order to prepare the location; they had all the Caterpillars and everything and they were going to send it back to Fairbanks. We would have had to



have gone on down to Fairbanks and haul it all back up there and we would have lost time and we were fighting a deadline to get this well drill in time to bid on at the lease sale.

And so, Bud Furrick went over and took the keys out of this equipment, he swiped the keys in the middle of the night to keep this equipment from moving. We had already contracted with the contractor. We had a contract with the person who owned the equipment to move that equipment off of their location and we did - we moved it down there. But I told Doyle . . . he said, "We will never get the hole down in time." I said, "Yes, we will. I will tell you what I will do. I will bet you" . . . his nickname was "Blackjack Doyle" and he was a very tough Irishman. I said, "I will bet you a fifth of Jack Daniels that we will do" so and so and so, "we will get" such and such. And we did.

What we did is we put an ice chiller up there. We had some refrigeration machines and we refrigerated all of the mud. We kept the hole intact. In just a short time, we passed Texaco. Texaco lost a hole at 2,500 feet, which was the bottom of the permanent frost. Later, Texaco joined us; they closed down their operations to become a partner to us and we went ahead and drilled our

hole. There was nothing worth that.

The point I am getting at . . . it was a can-do time and we did things you could not do today. It was mind boggling and it was fun because we were out there leading the pack, so to speak.

JP: When you think of your own experience, do you have any guesses about the Beaufort Sea in the future?

RG: No, I do not. There were a number of islands built out there. In fact, Shell built an island and I spent a good bit of time with the congressional group, the technology assessment group. The Congress had a group of people that were supposed to assist in assessing the technology in order to give them some insight into what areas of the country that were considered to be off limits might be amenable to environmental sound development. That was one of the things that I was involved with, with setting up the Arctic program in the Shell Development, was to make sure that we knew what we were doing and that we could understand the ice loads on the structures; not only freestanding structures like in Cook Inlet, but on gravel islands and stuff, which a number of them are built in the Beaufort Sea area.

Shell built several up there. Here again, there were none that were productive. I took a whole group of people from the Congressional Technology Assessment group and I testified before them. In fact, Dillard and I both testified before them on the technology base for the industry as a whole in order to give them some confidence that the Department of the Interior and the management people could move forward with leasing in these areas, that there was sound technology and it was doable, and that it was economically viable. But so far, other than Prudhoe Bay itself, there have not been any great reserves developed.

JP: Amoco and Shell were up there together in the late 1980s and early 1990s. They kept thinking that they would find good stuff. I guess the punch line was that they found some oil and gas, but it had to be big. There is no reason to find it if it is not big.

RG: No, if it is not huge and, of course, in those cases like Prudhoe Bay, there are two or three billion barrels. I do not know what the number is for the Alaskan reserve up there, the AMR. I cannot remember the numbers now, but the spread is quite great. The environmentalists have always focused on the lower side, saying, well, it not worth it if it is not that big. And that true, but I

think the industry as a whole should be given an opportunity and I think that the government should become realistic in their understanding of what the capabilities are and let exploration do an analysis to find out. I mean, you can drill some holes and find out if there is something worth developing.

The technology today with directional drilling and horizontal drilling is such that you can reach way out and have one small pad and several wells that will drain miles and miles of reserve if Mother Nature has been generous there. But, I think that the mind set, unfortunately, is one of an emotional nature, generated by a lot of uninformed, ignorant people and disbelievers. I think that, unfortunately, the industry still suffers from a lack of acceptance by a lot of the environmental people. Unfortunately, they just do not believe that what they are saying is doable and is credible.

JP: I talked to you earlier, before we turned the tape on, about Cognac and you said that Pat Dunn and Gordon Sterling would be the . . .

RG: Yes, Pat knew all the nitty-gritty detail. I was deeply involved in all the mechanical aspects of it, but a lot of the choices that were made and the trade-offs that

were made were done in Pat's group. Pete Marshall, along with Pat and Gordon Sterling and all, they were the ones that were deeply involved in that and can best advise you on the nitty-gritty there.

Bruce was deeply involved in the mooring system and in the lowering system. There were some large winches used to lower these sections down because it was built in sections over time. And part of it went in the foundation in the mid section and the top section was the last part. And then, the pile driving and everything, that was all a part of it.

Gordon subsequently went from that job to become the project manager for Bullwinkle. He can give you all the nitty-gritty on that, too.

JP: Well, I am about to talk to Peter Marshall right now. I appreciate your time. We do want to be sure that you save all those archives and we will help you be sure they are going someplace where they will be safe for a long time. It is good history, it is important history, and we do not want to lose the documents.

RG: Well, when I get a chance to get all of it sorted out, I will do that.

THE END

