SHELL OIL COMPANY

ORAL HISTORY PROJECT

Interviewee: Charlie Blackburn

Date: September 23, 1999

Place: Dallas, Texas

Interviewer: Tyler Priest

Code: MMS002

Keywords: exp, Shell, Mgmt

Bio

Mr. Blackburn had a long career with Shell beginning in 1952 after he graduated from the University of Oklahoma with a B.S. in engineering physics. He became Chief Petroleum Engineer for Houston E/P area in 1964. In 1966 he served as Budget Coordinator for Shell E/P and later became Southwestern Production Division Manager. In 1968 he became General Manager for the Onshore E/P division, and in 1970 he was promoted to VP of the Southern E/P region. In 1974 he became VP for Transportation and supplies, and in 1976 named Executive VP. Shell selected Blackburn as director and President of Shell Energy Resources in 1982 where he served until his retirement in 1986.

Summary

Interview offered insight into Shell's organization and bidding process. Discussion of lease sales and the move to deep water. Interesting commentary on Alaska and frontier areas including technology. Great detail on the Cox Blowout and Bay Marchand. Also, candid discussion of the buyout.

Tape #1, Side A

TP: This is an interview with Charlie Blackburn on September 23, 1999. The interviewer is Tyler Priest.

CB: In the beginning, my dad worked for Shell Pipeline so we had moved around a lot in Oklahoma. When I got out of school in 1952, I had a degree in engineering and physics, which was pretty versatile from the standpoint of . . .

TP: The University of Oklahoma?

CB: The University of Oklahoma, yes. I had interviewed a lot of different companies, a few oil companies included. I had an option in geophysics. I had taken a fair amount of geology. But I had come to the conclusion I didn't want to work in the oil business because I was going to have to move around too much. I was married and my wife didn't want me to move around. That is, until I talked to Gus Archie because my dad said, "Well, at least you ought to go talk to Shell." And I wasn't even on the interview list. I went in there at noon and asked if I could see somebody from Exploration. And they sent me . . .

TP: Was this in 1952?

CB: This was in the spring of 1952. I was talking to a manufacturing guy and he sent me back to see Gus. Basically, that is how I got started. I went down to Houston and was very impressed with what I saw. I went to work on the training program. They sent me out to McCamey, Texas to roustabout, roughneck, and all that type stuff. Back when I finished training, my wife was pregnant and they really couldn't assign me yet. So I worked in the old Technical Services Division directly for Gus. In fact, I was working with Sam Paine. We were working for a guy named Folkert Bronze (sp?). We were kind of working jointly with all this stuff.

So I got the benefit of spending about six months there after my training program, before I got assigned to the field. They sent me to the field for like 18 months or so. I went to west Texas and north Texas, came back to TSD and worked there another couple of years. I finally went to Denver in the middle 1950s.

TP: What kind of stuff did you do at TSD?

CB: I wrote their first report on theory and application of the neutron log. I wrote a report on how to understand induction logging. I was a petrophysicist so I was investigating the various applications of all this new technology that Schlumberger was coming up with. This is when they were introducing the neutron log, the

induction log and later on, the sonic log. All this new stuff was all introduced in the middle to late 1950s and early 1960s. Of course, there has been a lot of new stuff in the last decade that I am not familiar with, because I got out of the . . .

TP: And Archie was . . .

CB: He was the father of all petrophysicists. He was the guy in 1947 when they got ready to plug the wildcat at Elk City who said, "I really think you ought to test this well." They had a big bruhaha about it, between TSD and New York and Tulsa. Finally, they agreed to test it and found the Elk City gas field. So he became famous and had a lot of influence on Galloway.

TP: Really?

CB: Oh, yes. He had a big influence on A.J. Galloway. There were all sorts of teletypes that went back and forth. People wanted to do stuff, and Galloway's office would send it down to TSD to review. Usually, that was Gus! He wasn't the guy actually running the production side of it. There was a guy named Joe Chalmers who was running the production side of it, but Gus eventually became his number two. I don't think he was ever the head of production and research, but he was always the number two guy. He actually died of cancer. That was a real sorry situation, but he was a great guy. He was one of the most gentle people I've ever seen. He never

demanded anything of you. He would lay a scenario out, more or less, and it was up to you to decide whether you wanted to do anything about it. He was searching for aggressiveness and initiative on the part of the employee. If you didn't have that, well, fine. If you did, you got good marks. He became the mentor of Phil Jents, Sam Paine and myself, and two or three other guys. We were the core.

In the early days, there were no petrophysicists assigned to the areas for the divisions. They had reservoir engineers, and they had development geologists. I am now talking about the production department. There were no petrophysicists assigned. It was Gus's mission to try to get some assigned regionally to the area offices. In those days, we had areas in Calgary, Los Angeles, Midland, Tulsa, Denver, New Orleans and Houston. I went to Denver as the first division petrophysicist that the Denver division had. There was one in Billings who had just been put in place six months before. Then I left Denver in January, 1959 to go to New Orleans as the area petrophysicist for New Orleans. Sam was the first area petrophysicist that New Orleans had. So I replaced Sam in New Orleans in January, 1959, and worked in Petrophysics until, in the middle of 1963, I went to Houston as the head of petrophysics research in TSD. Now it is Shell Development.

TP: For the nonscientist, can you just briefly explain what the petrophysicists . . .

CB: What petrophysics is the whole art of interpreting what you had when you got all

these devices that the various logging companies ran down the hole in the well. From these downhole measurements they made like resistance . . .

TP: Rock porosity.

CB: You inferred porosity. You got these curves that had to be measured, conductivity or resistance, which is the reverse. You measured the neutron response, gamma ray response, and density. Eventually, it got to be that way. And from these measurements, we knew what kind of rocks they were from the cuttings that came up because people would look at the chips. But you were supposed to infer the properties -- the porosity, the oil and gas content, and this type of thing. So it was like interpreting downhole measurements to decide whether you had something capable of production or a dry hole. And that is what we did. We got better and better at it because we got better and better tools to do it with.

TP: How was Shell's petrophysical capability compared to other companies?

CB: To our minds, we were clearly the best because we had the leader. We had the guy that invented the name; Gus invented the name petrophysicist. He wrote all the equations and founded the science. So Shell had an impeccable reputation as being a leader in the field of petrophysics. I worked in that until early 1964 and they made me chief exploitation engineer of the whole Houston area. Then all my scientific

days, more or less, came to a halt. From then on, I was trying to learn how to be a manager.

TP: Did you ever spend time at BRC?

CB: Yes, what I did at Shell Development was at BRC. I spent three different periods at BRC.

TP: You did?

CB: Yes. I spent three different sessions at BRC.

We had all these areas, and communications were a lot different. There was a lot of communication by teletype. There was a lot of local authority, but not as much as we eventually had later on. There were a lot of teletypes that went back and forth. The airplanes were mostly propellers. There were a lot of district offices and division offices, maybe 17 or 18 in the country for five or six areas. That pretty much stayed in place until the late 1960s. There was a big head count reduction in the business in 1961.

TP: Did that affect E&P?

CB: Yes.

TP: I know Marketing really felt it.

CB: E&P had a big hit. It was traumatic as heck to a lot of people because we had staff in the area offices. It was a different world than it is now. A different world than it was in 1962! It was a much more relaxed world. Times weren't all that great; oil was three dollars a barrel, had been for years, and it was unsupported by import tariffs and things like that. But a lot of people were retired in 1961, those who had basically marginal jobs or they maybe had gotten promoted to fairly senior levels. They started putting people in New York who were more or less looking out after all the engineering staff around the country. Before, we had no one to do that. It was pretty much all local.

If you got assigned to an area, you stayed there. But then they put a guy in New York who was more or less the first chief engineer. Part of his job was to optimize the utilization of human resources, to put the right people in the right places.

TP: This wasn't what they called the candy man, was it?

CB: He had a candy man working for him. I think this happened in 1959. The guy's name was John Redmond.

TP: O.K.

CB: Yes, he was the first guy. He had a couple of candy men working for him. Their assignment was to figure out which assignment was best for all the engineers around the country.

TP: And this really had just a global . . .

CB: That was the first look at the global human resources, in the Production Department. It was about the same time that McAdams started doing the same thing in Exploration. The vice-president of Production was a guy named Ned Clark.

TP: That is right.

CB: In 1959. Then Ned went on to become executive vice-president, and Bert Easton took his place. Bert died later of cancer. But John was the first chief exploitation engineer, which we called it at the time. We had a chief mechanical engineer, too. This was before we combined the two entities into petroleum engineering. There were a lot of feuds that went on between the two, a lot of one-upmanship stuff about who was going to get to be a division manager. Was it going to be picked from the ranks of the exploitation engineers, or was it going to be picked from the ranks of the

mechanical? When I was in Houston, I was chief exploitation engineer and had a counterpart who was chief mechanical engineer. We worked for an area production manager, who, in turn, worked for an area vice-president. When I was in the Houston area, the vice-president was Ed Christianson, who is now dead, too. You probably heard a lot about Ed.

TP: Yes.

CB: He was a real fable in the company, a big guy. He played football for Wisconsin. He had a lot of influence. He was the one who caused the whole E&P reorganization in 1968.

TP: Really?

CB: It was his and Bookout's doing. But I really think it was Ed behind it. John was area vice-president in Denver. They sent him up there in 1966. He took the place of a guy named W.A. Alexander. Alex is still alive.

TP: I had no idea.

CB: Alex must be 90 now. He retired in 1966 and he was 60 years old. He's got to be 93 but he is still alive. I see him once in a while when I go to Wyoming. He's got

friends in Denver who bring him up there. Anyway, John took his place in Denver as area vice-president, and the Denver area wasn't doing too great in terms of finding oil and doing a whole lot of stuff. Whereas, New Orleans was doing great and had been for 15 years. So Ed called John into New York, sat down with him in the hotel room and said, "I want to reorganize this thing. Here is what I want to do, but I want you to help me work on it."

TP: What was Christianson's position at this point?

CB: He was executive vice president, the head of E&P. He became the head of E&P in 1966 when Ned retired. Clark retired in 1966. He took Galloway's place. Then Christianson retired in 1970. And then Redmond retired in 1974. He was there from 1972-1974, because Harry Bridges was there on an interim basis for a year or two. John took Redmond's place in 1974 for about 18 months. And I took John's place in 1976. I had it for 10 years.

TP: So back to the reorganization . . .

CB: Yes, it started in 1968. John got transferred to New Orleans, and Jim Wilson, who was in New Orleans, got sent to Denver. John, more or less, went in his office and didn't hardly talk to anybody for a few weeks. He was working with Ed on what they were going to do. They decided to reorganize E&P into regions, into two major regions. By this time, Shell Canada was no longer part of Shell Oil. There was

going to be one region in Houston and one in New Orleans. Houston would have Midland, the west coast and Denver. New Orleans would have all the stuff over there. They finally ended up with the onshore part of Texas, too. Don Russell became the coordinator of the effort in Houston, and I became the coordinator of the effort in New Orleans to do this.

TP: What was the rationale behind this reorganization?

CB: Better communications. A lot less overhead, because every time you have an office, you have overhead. You can't help it. You've got to have secretaries, telephones, and space. By consolidating a lot of the functions into one region, you needed fewer people to run the administrative side of the business. So that was a lot of the rationale.

TP: You still had the West Coast area . . .

CB: But it became part of Houston, part of what they called the southwestern region. New Orleans was the southeastern.

To back up a little bit, Shell has always, in terms of the really enormous reserves and production capacity, had three locations. There was California, because of thermal largely, the heavy oil production. In California, it got to be 600,000 barrels a day or

something at one point. It was a big number. And there was New Orleans, because of big discoveries they made in 1954 in East Bay. Then, Shell waded out into the Gulf of Mexico and it became a big center of activity. In the old days, of course, it had been the Mid-Continent up in Tulsa and Oklahoma City and up in there. But production in the Cedar Creek anticline was declining and, of course, West Texas was very important because of secondary recovery: carbon dioxide technology, water flooding and all that stuff. West Texas always was the center of a lot of production, too. The most dominant of all was New Orleans. And there were a lot of things that went on, big arguments like, "Could you make any money in the offshore?? When I was in New Orleans in the late 1950s and early 1960s, there were big arguments between New York and the management in New Orleans over whether you could make any money in water depths beyond 60 feet. Believe it or not, New York wanted to go beyond 60 feet. It was the exploration department.

TP: McAdams?

CB: Yes, R.E. McAdams insisted, and Bouwe actually put guys to work on showing you couldn't make money in greater than 60 feet of water unless you found another East Bay, which was 800 million barrels! They all forgot about the learning curve, the economies of scale and infrastructure. Once you get it in place, things are much cheaper, the threshold volumes are a lot lower and all of that. They didn't all forget that, but the people in New Orleans lost sight of the ball. Fortunately, in the 1962

lease sale, which was sort of the turning point, head office prevailed in a sense. We bought a lot of leases.

TP: That was like an area-wide sale.

CB: I got into one of those two-day deals where you bid. The next day, you could either take your bids back or keep bidding. It was a strange sale. I was not in the exploration department then.

TP: How did the production department feel about this?

CB: The production department was part of the ones causing the problem.

TP: Really?

CB: The production department in New Orleans didn't think you would make any money. When I say real deep, I am talking about in 60 feet. We are talking about water depths that require floaters, semi-submersibles and things like that.

TP: I talked to Bruce Collipp the other day, and he said he sat on his design for a couple of years.

CB: Yes, that was when the *Blue Water* went in, in 1961 or 1962. But it was the only semi- we had, the only floater.

TP: I have heard stories about this in some of the old interviews that we have. They thought New Orleans was holding back.

CB: Yes, they were holding back in New Orleans, but New York prevailed. And I don't think it was just R.E. McAdams; I think Ned Clark, too, had a lot to do with it. I don't think McAdams would stand it. He had to get approval to spend that money, and the only guy who could approve it was Ned! [Laughter] So if Ned had been against it, it wouldn't have happened. But that was a turning point. From then on, Shell has always been a leader marching out there in deeper and deeper water.

I know I am digressing and skipping periods, but we had a really crucial period in 1983, when we had our first wide open sale. We bought a few deepwater leases: Bullwinkle, Popeye, Tahoe.

TP: Ram Powell?

CB: We bought Ram Powell in 1983 or 1984. I think we bought it in 1983. We bought a few leases. Then we looked at what a couple of other companies had done. Exxon and Placid sometimes bid together and sometimes separately on a lot of leases. I

didn't have all the data we would like to have out here, because we preferred to buy prospects. Some companies would buy what we call leads, but we preferred to buy prospects. Billy Flowers came to Houston and talked to Jack and me. Threet was the exploration vice president. We were all worried about this because people were obviously going out in that deepwater, and there is some good stuff out there. Look at Bullwinkle. We didn't have the coverage we would like to have had with seismic. We needed a new seismic boat. So we commissioned the *Shell America*. We bought some leads in the next sale. In the next deep water for the next area wide sale, we started buying deepwater leases that we had one line turns on. We had one seismic line across something and it looked pretty good, and we were buying them for next to nothing. The lease cost was piddling compared to what they were in the late 1970s and early 1980s. So we bought a lot of leases, and that really set Shell's deep water strategy.

TP: The three turning points are East Bay, the 1962 lease, the 1983 and the 1984 sales?

CB: Right. 1983-1984. 1983 and 1984 both. The 1984 sale was when we really decided to get with it in the deep water.

TP: I guess there was a potential turning point, talking to Mike Forrest and Billy, if they had really pushed the bright spot.

CB: We pushed the bright spot.

TP: They seem to think not as hard as Shell could have.

CB: No. I don't agree with them. And Mike Forrest, particularly, is a good friend of mine, but he worked for me in Maxus, too.

TP: Ok.

CB: We didn't push it as far as we should have in 1972, because I almost got fired! I thought I was going to get fired in the 1972 sale. I went to Houston wanting to spend $600 million, expose, not spend, $600 million in bids. That was in 1972. Oil was two or three dollars a barrel! I would say we were being pretty aggressive! [Laughter] I was told that there wasn't any way we were going to expose that much money. I got on the phone and called Amoco and that week, within the next two days, we laid off $200 million worth of exposure to Amoco, by taking them as partners in a lot of the leases. We didn't buy a single lease together. We were really careful how we did that! We did not buy a single lease together. And we bought a lot of leases in the 1972 sale. We had another partner, Transco, and we had promoted them to where they put up 50 percent of the money for a 25 percent working interest. So, they put up 50 percent of the bonus for one-quarter working interest. I am talking now about Shell's exposure of $600 million. So we ended up

actually spending about $200 million.

The biggest thing we bought was the field that Mike Forrest mapped - Pine. That was the biggest thing we bought. But the biggest thing we didn't buy was a field called Southeast Cobra, which Mike also mapped. We wanted to bid $72.5 million on the field. I called head office about three times and they said, "Your maximum bid is $36 million. If you can find partners for the other $36 million, O.K. We are not going to, as Shell, expose more than $36 million." This is one lease. The best I could do was lay off $18 million, so we bid $54 million. And it was bought for $72 million even. [Laughter]

TP: Who got that? Do you remember?

CB: Yes, they actually bought two side-by-side leases, an outfit called Transocean in Houston, and they had gone wild. The lease that we bid zero on, they bid $109 million. And on the next one, the right-hand one, the one on the east, we bid $54 million, and they bid $72 million. That was their second bid. When we sat down with Amoco to try to get them to join us, we tabled our bids and tabled a great big number on the eastern one. They tabled zero. And they tabled a big number on the western one, and we tabled zero. That is how much difference the interpretation was because of the bright spots. But it had deep bright spots that Mike could map.

In the 1970 sale, probably we could have made bigger bids on some of the leases.

TP: I think so.

CB: Yes. We could have made bigger bids if we had really been convinced that we knew exactly what we were doing. But at that stage of the game, it was so early. When we went to a sale in the spring of 1972, we made some big bids. We were second 12 times. We bought one lease that was tall on bright spots stuff. And the only lease we bought had bright spots that were valid. Most of the ones we lost were invalid bright spots. There were bright spots but they weren't oil fields. Mobil bought most of them combination of Mobil and Sohio.

TP: That's right, because Mobil found bright spots.

CB: They went berserk on these things, and they bought all these leases. It turned out most of these things were spurious, and we were just fortunate that we didn't buy them. So I would remind both Billy and Mike that we went pretty heavy on that.

TP: I think they meant that Shell should have pushed it harder.

CB: 1970 would have been the opportunity, if we would have really had the conviction.

TP: With 20/20 hindsight.

CB: Like I used to say to Jimmy Cook. Yes, December, 1970. We were very lucky to even have a sale in December of 1970 because we had the Bay Marchand blowout. While I was sitting in the room listening to recommendations for bids, Bay Marchand blew out and we had 12 wells on fire. They sent two U.S. senators down from Washington to see what was going on, to make sure we weren't destroying the Gulf of Mexico.

TP: So, this was when you were vice-president of southern E&P?

CB: Yes. That spring, I had the same thing happen to me at Piney Woods, where we had a sour gas blowout, the Cox blowout.

TP: Do you want to talk about those two things? Shell seemed to turn Bay Marchand into a pretty good public relations success.

CB: We did at Cox, too. We had a contingency plan for the sour gas. We had made a discovery up there in 1969 that pretty much gave all of us a great deal of worry about what would happen if we had a blowout, because it was 30 something percent of H_2S, which is deadly. It was a great discovery. It was the Thomasville field. I went off to some management thing for a couple of weeks and left Tom Hart in

charge of the division. I was general manager at the time of the onshore division. Bookout was vice-president of the southern region. We had some tools stuck in the hole and the M well in a mess and we still hadn't completed it. We had tested it. We had all sorts of mechanical problems. Tom said, "Charlie, I am glad you are home. I went in the closet sucking my thumb!" [Laughter] It is too bad he is dead. You would have some great interviews from him!

TP: This was right after you had that scare?

CB: We hadn't had the blowout. At John's insistence, really . . . I give credit to John [Bookout] on this . . . he said, "Do you have any contingency plan of some kind? In case we have a blowout, what are we going to do? How are we going to react?" We put together a whole book and we had a contingency team of people that had been designated to do certain things. So when we had that blowout in April, 1970, I went up to John's office and said, "We've got a problem. The well is about to go." I won't give you all the details, but we had 6,000 pounds of wellhead. We knew something was going to rupture. And I said, "I am going to go to Jackson. I guess I will go take care of that and then you are going to take care of this." vHe said, "That is fine." He took care of the New Orleans relationships and New York, keeping New York off our back, more or less. And I went to Jackson and met the governor at the wellhead at the site. The well was burning.

TP: Who was the guy there?

CB: John Bill Williams. He was the one-armed governor of Mississippi. Actually, I met him at another rig. We had another well drilling up there, too, about a mile from the blowout. We talked about it. And, of course, by this time, it was on fire, which means when you burn the H_2S, it becomes SO_2. It just smells. It is not going to kill you. The wind direction was right. We flew a Beechcraft, with the contingency team. Six of us went up there. We had to evacuate the school, which was a black school, within a mile of the blowout, or less than that and find them rooms in Jackson. So I had my services manager with me to get hotel rooms and all that. I had a PR guy and a human resources guy with me. I had a guy who was an expert on toxicology and somebody else to spell me on the radio in the doghouse of the rig. There were six of us. We were joined later by a landman who had a book to write checks. We had evacuated several families that morning, and they went in and put them in motels in Jackson. Then we took this whole school, 300 kids or so and put them in an office building that had been vacated. We made it into a hotel. John had the idea to build a fence a mile radius around the blowout and we got that started. We had a really busy time for about three or four weeks. But our public relations and the governor were of great help. The governor got on the radio that evening and said, "Well, these guys have got control of this. There is no threat to your life. If there is any problem that comes up, they are going to evacuate people." He assigned the highway patrol to us. That night, the wind changed from south to north, and we

got nervous about some of the houses. As part of our contingency plan, we had the location of every house within a three-mile radius. We had all the numbers located. And we went around and evacuated people, all night almost. Washington sent a congressman down and we flew him around in the helicopter and showed him the thing. It killed all the fish in the school ponds, because the sulfur dioxide got in the ponds. But we had good relationships with the schools because we took really good care of them.

TP: How long did the well burn?

CB: The well burned for I've forgotten how many weeks, and then it bridged, which means the formation down where the casing had collapsed came around the thing and stopped the gas flow. Then the gas started going out into the aquifers. So we had to drill observation wells to make sure that the gas didn't get into water drinking supply for these places.

TP: That must have caused some sleepless nights.

CB: Yes! You can't imagine how many times I was up all night! The EPA in Atlanta wanted to get into the deal. I babysat the Mississippi Air and Water guys one night because we had another wind shift. They were talking to Atlanta, which I didn't want them to be doing, but I couldn't stop them because of the EPA. These were the

state air and water guys. We had had them out there. We showed them everything we were doing. We had a truck that would go around and if people would get nervous, he had a gas sniffer with him. He would go to their house, get out of the truck, sniff the air for them, show them his charts, put them in the truck, and show them there was no danger. And it was true, there wasn't. But people get real goosey about stuff like that, because we had big press.

I had spent all day, all that night, the next day, and somewhere in the middle of the next morning. My PR guy had arranged for me to have a press interview at the motel with TV. So we had a big TV deal. It calmed everybody down. And it pretty much stayed calm. I held these guys' hands all that night because they kept wanting to talk about evacuating Jackson. My God, there were 300,000 people!

TP: The EPA guys were wanting to evacuate?

CB: They were saying, "Yeah, you guys maybe ought to think about evacuating Jackson," and I would keep telling them, "No, we don't want to think about that! I mean, look guys, we've got the truck here. It is checking all the air. We've got it windward of where you think anything can be coming from. It will detect anything that is any kind of a problem before it ever gets to Jackson." We set up ground monitoring stations around, too. But the reason that all happened that way was the pre-planning. I'll give John the credit for that. He is the one who called me up to his

office one day and said, "Charlie, you know, this probably needs a contingency plan." If we hadn't have done that, we would have been running around like chickens with our heads cut off.

We had all the houses located. We had the resources located.

TP: At the Santa Barbara spill, the public relations effort wasn't so good

CB: Yes, Santa Barbara had happened, and Chevron had had one in the Gulf of Mexico in 1969 that caused them to cancel a lease sale, because they shut everybody out. They wouldn't talk to the press, which is fatal.

TP: Did you have a lot of national media?

CB: No we did not. We did at Bay Marchand, but we did not in Cox . . . we had some, but not much. Bay Marchand burned for 155 days and we put out 157 press releases. We put out a press release every day. I don't care if it was the most mundane thing in the world. Nobody was questioning what was going on. We did joint flights with the Coast Guard. The first time we overflew it, the Coast Guard was in one helicopter and our people were in another, and we had different reports. So, we went over to see the head of the Coast Guard said, "Hey, how about a deal? Why don't we fly these things together and your guy and our guy can talk to each

other about what they've seen? We'll put out a joint release," which we did. That was of great benefit because there wasn't any one-upmanship left.

TP: You must have had a contingency plan at first.

CB: Yes.

TP: For many years before that point?

CB: No, we didn't have too many plans until Piney Woods happened. Then we worried about having contingency plans for all kinds of stuff.

TP: There is a story that was in the *Shell News* about a guy, a marksman, who had to pierce the relief well?

CB: We did the same thing at Bay Marchand that we were doing at Piney Woods. We relieved the division manager of his normal duties, and he became the head of the team, like the area drilling superintendent went on the team. Billie Jack Burr. We set up a team. Rich Pattarozzi, who is now the general manager and vice-president up there was on it. He might have been the marksman. The marksman had a way of identifying which well was burning.

TP: Right.

CB: They were all directional, and if you didn't know which one it was, you didn't know how to because we shut them off by drilling relief wells. But we couldn't get a relief well drilled fast enough at Piney Woods. We didn't kill Piney Woods with a relief well. We did, but we killed it at 10,000 feet. We drilled a relief well into the side of the blowout well, which is almost impossible. You think about it in three dimensions. Not only do you have to find it this way, you've got to find it in every dimension. And there was some really unusual technology used on earth's magnetic fields and all this kind of stuff, some really high powered mathematics to help guide us into where we could actually intersect. Because the well was 20,000 feet deep, we weren't even sure we could pump into it. We intersected the thing at 10,000 feet, a half distance down. After we intersected it, we ran casing in the relief well, shot perforations from it into the blowout, pumped mud into it, and killed it. It was phenomenal. The service companies couldn't believe it. It took us a year.

TP: And Bay Marchand blew for how long?

CB: 155 days. Red Adair put out the last well. The others we had put out by pumping into them, but we couldn't get the last one out, so we got Red in there and he put it out.

TP: How did you do in the national media? It had to help to have joint reports with the Coast Guard?

CB: We didn't really have a lot of national media. It would have been much worse now than it was then. Senators Moss and Jackson. Our Washington lobbyists brought them down. They wanted to get a firsthand view of what was going on out there, and I took them out in the helicopter. Then, I brought them back to the hotel, where we had arranged for them to have a press conference, which they did. They said, "Hey, these guys have got this thing under control. There is no oil being spilled. They are burning it all. We see no reasons why we shouldn't continue with the December lease sale," because that was the controversy. Should we stop all lease sales in the Gulf of Mexico? It was too dangerous to have these lease sales.

TP: So there wasn't much spilled?

CB: It was burning. Everything was burning. The day that we were going to put out the other well, when we couldn't pump into it, we were going to have to put the fire out with the water boat. We had these boats that sprayed water, in which case we were going to put oil on the water. We announced that we were going to put oil in the water so we could get that last well out. We were going to contain it with boons. We were going to make sure the weather was right, and we didn't get any adverse publicity about it. We put oil in the water, but we also picked it up. We never got

anything but compliments on the whole works. It was two of the biggest disasters you can think of, both in the same year! 1970 was not my year!

But those are big turning points. Being able to handle those kinds of things were big turning points, too, in the whole lease sale business. Cognac was a big turning point. Think about it: we put that thing together in three pieces. Like somebody said, it was like a Tinker toy set.

TP: Before we get into Cognac, I guess we're jumping around here, but that's fine. The 1968 . . .

CB: We set up a division with general managers. That was the other thing, to put closer management focus and coordinate . . .

End of Side A

Tape #1, Side B

CB: We ended up with six or eight general managers and two regional vice-presidents. We had Gene Bankston in Houston and John Bookout in New Orleans. And in New Orleans, I was the general manager of the onshore. A guy named Dick Nelson was the head of offshore. Ed Pearson, who retired in Oklahoma City now, I think, had the old Delta complex. No, we had a guy from California. Ed went to Midland. Anyway, we had three general managers in each of those regions. And the organization stayed that way . . .

The regional vice president stayed that way, but the internal part of the regional vice president's job changed a couple of times back and forth between functional managers reporting to the regional vice president, to eliminating the regional staff entirely and just having general managers report to the vice president, who didn't have a big regional oversight staff. And that is the way it was when I retired. We had regional vice presidents who did not have big oversight staffs like exploration managers and production managers. They had general managers report to them, and they had an economics guy and things like that. In the early 1970s, we started Pecten.

TP: When you were still an E&P onshore manager, were you helping with bids and doing bids for offshore?

CB: No, not until I became vice president. There wasn't any lease sale. There were almost no lease sales between 1968 and 1970.

TP: But in the 1970s, you became vice president?

CB: Yes. I took John's place in July, 1970, when he went to Canada. I became regional vice president. I was there for three years as that. Then they put me off in T&S for a while.

TP: How did the bidding process work, deciding how much they were going to bid on leads?

CB: We had a very disciplined approach to all of that. The division office in charge was assigned teams to work prospects. I will talk about pre-1983, and then after 1983. It was pretty much the same except the bidding levels were so different. Prior to 1983, everybody in industry knew what was up for bid and they all got data on the same blocks. So it got very competitive because everybody was looking at the same stuff. After 1983, in the wide open sales, you might find something that nobody else even knew was there. It was a completely different ballgame, but we approached it pretty much the same way. We had teams of people that worked up the prospects and made the maps. We had an economist from the Production Department and we

actually used the petroleum engineers or reservoir engineers. We assigned them to work with these teams, on the economics and the cost. So in the case of every lease, you had a volume estimate and a probability of success estimate, some idea of what it would cost to drill. We put them all together into an economic scenario. What would this thing be worth if it was successful? What are the probabilities that is going to happen that way? And we determined what the potential profitability would be at certain estimates of success ratio. Let's say if the probability were going to be $100 million, if you were 100 percent successful but only $12 million if you were 10 percent. It works that way because of taxes and stuff. So your maximum bid, if you wanted to make any money, would have been to bid away all the profit because it was present-value profit. It had already been discounted by a rate-of-return demands. So you could theoretically bid it down to zero present value, which would still mean you made a profit because you made your internal rate of return requirements. So that was a discipline we employed, and then on top of that, we had a thing that had to do with uncertainty, that said that you tend to overbid because your calculations are obviously not precise enough. One of the ways you can cope with that kind of uncertainty is to bid two-thirds or 60 percent of this theoretical maximum bid. And I imposed that discipline in 1970, against fairly great resistance! But it stood in some great stead all through the really tough sales through 1983, the ones I was in. I was in all of them except 1974-1975. I wasn't there when they bought Cognac. I was in T&S and wasn't any part of that. But I was either there in New Orleans, or I was there as executive vice president getting to approve of them

in head office. After the bids were approved in New Orleans, they had to be submitted to me and then to Bookout. In fact, when I was executive VP, I'd go to New Orleans. We would go through the bidding process, determining what we wanted to submit. Then we would take the bids into head office the next week or so. The guys from New Orleans would talk about them and John would either agree or add his two bits to the process. So we went through a really disciplined approach on all the lease sales, not just the ones in the Gulf of Mexico.

We had a lot of lease sales in the 1970s and the early 1980s, all of Alaska, the Atlantic Ocean, and the west coast. We had a lot of lease sales. We went through a lot of lease sale reviews! We spent a lot of time on them, and we needed to spend a lot of time on them. It was difficult. When the guys in New Orleans would say --this was after I got to head office -- "O.K., we are ready to show our bids," our chief geologist or our chief geophysicist would go over and sit down with them. They would go over them with them, too. So when they got ready to show me the bids, there was a consensus among the management of the region and the head office staff. If there wasn't a consensus, they would present both sides. They brought their disagreements right out in the open. Jack Threet and I, and later, Tom Hart . . - most of the time, Jack and I were in this thing together - would listen to this if there was a disagreement and we would finally end up saying, "O.K., why don't we do this?" And we would all then reach a consensus? We sorted the law out, and then this is what we are going to tell Bookout! But we would usually tell John,

"You know, there is a lot of disagreement on this. A lot of guys think we ought to do this. Here is our recommendation. Here is what we want to do." And 99 percent of the time, he agreed.

We got more flak out of the board on the deepwater stuff because they kept saying, "How are you going to make any money in the deep water?"

TP: What was your response?

CB: "If we find enough oil, we'll make money!" I mean, look at Cognac. We were making money with Cognac. And we spent a lot of money developing Cognac. That is one of the great things about it: we were making money but we had more than doubled what we thought it was going to cost us, because it was the first time we had done anything like that.

TP: A big step.

CB: Yes. One of the first jobs I had when I went on the Shell board was to go in and ask for a supplement to do "Cognac," because when John submitted the AFE, it was a number about half the size of what it was going to take. He didn't know that. Nobody knew it. As things went along, the cost just got larger and larger. But we obviously were doing O.K. there, and we believed in learning curves. We believed

that when you get infrastructure, costs will get a lot cheaper. The first time you do something, it is going to cost you a lot more than the next time you do it. Or the next time, or the next time, or the next time. There is a theory that says every time you double the number of times you have done something, like from one to two, to two to four, four to eight, that you get a 20 percent reduction in cost. It is called a learning curve and you can believe that. You see it in the chip business. You see it in everything -- computers, televisions, anything. We believed in that and lived by it. These were the first things we would tell the board. Part of the problem was that the Royal Dutch guys on the board had drilled a lot of deepwater stuff around the world and had not found one drop of oil. And one of them, whose name I will not quote, actually said to me, "Charlie, I am not sure that, geologically, there is any oil in deep water."

TP: Those were all frontier areas.

CB: Yes, they were all frontier areas. And that is what we responded, that there wasn't any oil in the shallow water in those same areas! It was a geologic problem. It wasn't a water depth problem. Where they were doing it was not a water depth problem, it was a geology problem. We had the same experience in the Gulf of Alaska, a lot of other places in Alaska, and on the East Coast of the U.S.

TP: Would you provide a brief history of Shell's experience in Alaska? I know Malan

Downey was there.

CB: Marlan wasn't there for all of it. He was there for the Gulf of Alaska.

TP: There was a big disappointment not getting on the North Slope?

CB: Yes. Marlan wasn't there for that. I can tell you how that happened.

TP: Sure.

CB: John can tell you better. He is closer to it. Everybody always had budget constraints, particularly in the 1960s. In 1966, I spent a year in New York as budget coordinator. There were big wars between chemical, products, oil refining and E&P about who was going to get budget money because there wasn't a whole lot of spare money floating around. So budgets were tight and you had to make choices. Some of them were really difficult. They had decided they wanted to do a big exploration venture offshore Washington/Oregon.

TP: This was with the *Blue Water II*?

CB: I have forgotten what rig. They were going to buy all these leases, they were going to go to drill all up the coast.

At the same time, they wanted to shoot a bunch of seismic lines up north of the Brooks Range in Alaska. There wasn't enough money to do both. Ned Clark told McAdams - and this is secondhand - to pick one of the two. You can't do both. Tangentially, the Production Department, the economics boys, had done a big study of how to make money in Alaska. The analog oil field was a billion barrels, which was big. But they came to the conclusion, like the deepwater Gulf of Mexico, that you weren't going to make any money finding a billion barrel oil field, because of the infrastructure requirements and everything. The geologic model they were presented to do this with was the Cretaceous model, very unlikely. In fact, nobody has found any oil fields above one billion barrels in the Cretceous in Alaska. I don't think they'd find any that big. So the model they were looking at, as far as Cretaceous was concerned - that is what everybody thought the objectives were - was correct. And they were correct in their observation that you are not going to make any money with those size oil fields. The classic example of it is in the offshore of Northwest Territories of Canada. There are a lot of big oil fields up there but nobody is shipping any oil out of it because there is no one field big enough for you to afford the pipeline to build the infrastructure to get the oil to a market. It is the McKenzie Delta. When I am talking about Northwest, it is actually farther north than that. It is the McKenzie Delta of Canada. There are a lot of oil fields up there. They are all noncommercial. And that was the conclusion reached about Alaska, that it was going to be a noncommercial basin. There was going to be a lot of oil but it

was probably not going to be commercial. So they chose to do offshore Washington.

In the meantime, BP got a seismic crew up there, or somebody else other than us. They were not doing that rigorous a study. They started looking around and the crew chief shot seismic lines farther north than was supposed to, found something that was not Cretaceous, that had a south dip to it, when everything else was dipping north. That got everybody really excited, this great deep structure that nobody even expected or thought was even possible up there. But Shell didn't know that; they didn't have any data. So, when the lease sale was held, Shell bought a few leases for piddling amounts, but they weren't on that structure. BP, Exxon and Arco bought the leases. But Shell didn't have the data. They would have been in there buying leases if they would have had that same data. So it was missed for that reason, which is one of a whole list of very good reasons, except you have over-extrapolated. In geology, you've put a geologic model forth that turns out to be invalid because you don't know enough. But that happens around the world a lot.

TP: Serendipity.

CB: People stumble in and they have a certain geologic model. When you go internationally - and Marlan can really talk to you about this - if you do an international venture in a frontier basis, a geologic model is apt to be dead wrong.

You may still find oil but it may not be quite the way you thought it was going to be. The geologic model predicted it was going to be noncommercial. Of course, Prudhoe being ten billion barrels, is obviously not noncommercial. But the McKenzie Delta is noncommercial.

TP: How about other parts that Shell developed in the Gulf of Alaska?

CB: There wasn't any oil - no source rocks. We got fooled on the source rock. The temperature never really got high enough down hole to generate the oil. No source rock.

The Gulf of Alaska failed for lack of source rocks. Two or three of the basins off to the northwest failed for lack of source rock. The one off the North Slope, in the eastern part . . . not Chuckchi. I don't know why it failed. I was gone. But the one up next to the McKenzie Delta on the U.S. side across the border from the McKenzie Delta was not a big enough oil field with source rock. The oil fields aren't big enough.

Since we had been through that Prudhoe business, we were only going to participate in the whole frontier thing at a certain level. In our own minds, the frontier basins that we liked were ten percent. We did that on the East Coast and were successful in getting about ten percent representation of nothing. We got above it in the Gulf of

Alaska. We were too strong there. We were exactly right on the famous "Muk Luk" there, that failure. We wanted 10-15 percent, we had 13. So it was almost a perfect sale from the standpoint of us achieving what we were trying to do.

TP: Muk Luk was another case of no source rocks?

CB: No, there was source rock. It was a look-alike to Prudhoe, except that it was breached. But you couldn't be worried about that because there was always that potential. As structure that had been in a big oil field at one time and had been breached, it had oil stain in the rocks. So it had been a big historic oil field but it had been breached by some geologic event that removed the seal.

TP: You got really excited initially.

CB: Yes, but we put a probability of point four on it, which was pretty high, we thought. There were people that put a lot higher than that on it but we were successful. And, you talked to Mike [Forrest] . . . He was the manager of that whole effort when we bought the Muk Luk. We had a jillion meetings about that thing. But we weren't shocked when it was dry, because we actually figured point four means we had less than a 50 percent chance. We were disappointed, yes, because we had $100 million in leases, and about 13 percent of a $100 million well . . .

TP: What should we move onto next? It says in your bio that you moved over to T&S.

CB: For about two years. They were trying to just get me exposed to the other side. Before they made me a director and put me in charge of E&P, they were trying to expose me to the other side of the house. That is about all I want to say about it.

TP: What about other developments in the 1970s? There were several: creation of International Ventures, Pecten, the Belridge acquisition.

CB: I saw in your notes that somebody thought Belridge wasn't successful. Belridge was highly successful. It was a technical triumph because of the cash flow in the beginning, but certainly because we got the production volumes faster than anybody had predicted, and it cost less money. Jack Little had a lot to do with that because Jack was the general manager that took the thing over when we first bought it. He got the production up faster for less money than we had predicted. In the early days, the oil prices were better than we thought. Then, in the later days, it wasn't nearly as good.

TP: That is all I meant.

CB: The group bought Shell Oil in 1984, and things changed on them, too! They never talk about that. They paid a lot of money for Shell Oil in 1984, and they never talk

about how they overbid! That has always been funny.

TP: The technology you brought to Belridge was very impressive.

CB: Yes, the engineers did a magnificent job on that thing. And the technology worked like a charm. They exceeded every prediction they made. Production volumes were fantastic.

TP: They were using thermal recovery?

CB: Yes, they were experts in thermal recovery, the world champions at thermal recovery, really -- the efficiency of it, the cost and everything else. So it was a technical triumph. In the long run, it may still be economically sound because they are still producing, I think. I talked to one of the guys two or three years ago, who said, "We are coining money in California." So I think they were still doing pretty good out there. It goes up and down. Last year, or a few months ago, I am sure it was sorry. But I'll bet right now, at $24 oil, they are happy again.

TP: You were there?

CB: I was there, yes. I was in the middle of all of that. We bought it, John and I actually. The board got enthusiastic. We bid plenty. I guess the board got enthusiastic over

our enthusiasm. The other big things in the 1970s were of course, all those frontier lease sales. There was a lot of Gulf of Mexico but the big Gulf of Mexico stuff occurred with the wide open sales. We bought a lot of high-priced leases and we did O.K. But Shell really did well in 1983, 1984, 1985 and 1986, in the Gulf of Mexico in the deepwater and the shallow water.

TP: And no one really expected the rate of production to be as high as it was in really deepwater.

CB: No, nobody figured that. But we didn't bid hardly anything. The big decision you made when you bought a lease in deepwater was not what you were going to bid for the lease, because it was a million dollars or so. Two-thirds of the leases bought after 1983 have been single bids. You figure, if you bid on it, you had a two-thirds chance of buying it. So why get carried away with big numbers? Your probabilities of buying it were very high, because two-thirds of the leases that had been bought out there had been single bids. You had to bid against the government's idea of what they thought it was worth, which usually was O.K. But the big deal was the cost of the wildcats, the deepwater rigs.

The first deepwater rig we put in the Atlantic was costing us $225,000 a day. I think the rotating hours on the first well that drilled were 13 percent of the total time they were on the location.

TP: When you were considering how to produce in really deep water, what were the various designs in subsea?

CB: We had guys in the organization like Bruce Collipp. Shell's E&P is a highly technical company. And when I say that, we bet on our staff. The technical staff had great credibility usually, which they earned by being able to achieve what they said they thought they could do. Before long when the technical people are telling you things, you tend to believe them because they've got this great credibility. You can see examples of learning curves and things like that. When the technical staff and the production department would say we can do this and it is going to cost this but we can do it when we do it more than once, the cost will come down. You had a tendency to believe that. And, of course, it is true.

We had peer companies out there that might as well have not had technical staff. I don't want to use any names, except maybe Texaco. They would go to lease sales, and I don't know where they came up with their bids. They wouldn't buy anything. They would go to somebody that was highly successful and join them. Maybe the people who had been highly successful had overbid on a bunch of leases -- the reason they bought so many -- they needed to lay some off. They'd go buy an interest in those, versus putting the right kind of bids in the first place because the management wouldn't believe the technologists. They weren't willing to bet on

them. If I had to say anything at all about Shell's E&P, about management's commitment and stuff, it would be the commitment to bet on the technologist. We made big bets on what the technical people told us, because we were not supposed to know better than they did. If we didn't make those kinds of bets, we shouldn't have had them. And companies that have all those people and don't bet on them are making a bad mistake. We made big bets on our technical staff. And the deep water Gulf was a big bet on the technical staff because most of the management came out of those ranks.

TP: . . . a company managed by engineers.

CB: The E&P is, yes, by engineers or geologists. They all came out of the same melting pot, so to speak. We had been them, so we had a lot of faith in what they could do. You keep recruiting the same kind of people, you keep training them the same kind of ways, you keep exposing them to the same sorts of things, so you have a lot of faith in what they are capable of. And that has probably been the single, biggest asset in the whole thing: management's marriage, more or less, to the technology and to the people. And I think the same can be said for Royal Dutch - the same culture. When I was there was the same culture existed in Royal Dutch also. Maybe not quite to the extreme it did in Shell, but it was there.

TP: Speaking of Royal Dutch, Shell has always been committed to the United States.

CB: Shell Oil?

TP: Shell Oil. I mean . . .

CB: Up until 1971.

TP: Up until Pecten . . .

CB: Yes. You always wanted to replace your production. You didn't want your reserves to decline. And it became more and more difficult to do that, particularly in the onshore U.S. Yes, you could in California with the heavy oil. You could in the Gulf of Mexico with the offshore. You couldn't be sure of doing it for the whole enterprise and stick to the domestic activity. So the decision was made that we had to go international. I think Christianson made that decision in 1970, and it was pretty heavily supported. Of course, the first venture was in Canada with the Canadians, and it was a disaster. It was another one of those basins that had oil but just a smidgen. Then we made some joint ventures in Malaysia and the Group farmed in Cameroon because the Group thought it was noncommercial. And it wasn't, but it was a good deal. So we had differences of opinion, which is always going to be the case. One should never make a big deal of a difference in opinion. That is just the way the technical world works.

When they got into Syria, it became highly successful. Marlan put us into Syria. Johnny did. I think he became a personal friend of Hafez al-Assad. As Assad told it -- I was in his office with Marlan when he said this -- "I am glad I made this decision based on technical rather than political reasons," because the Russians had been in there doing all the exploring. And he decided that they weren't doing a very good job. Against great opposition from his internal oil company, the Syrian National Oil Company, which had been thick with the Russians, he opened it up to Western oil companies. Shell and Coastal got the first two concessions. Then Coastal didn't do any good and we farmed in theirs. Of course, they got part of what we wanted in the first place. But Marlan was head of Pecten when we did that, and I think pretty much responsible for us getting in there. We drilled several dry holes, persevered, and finally found the first oil field. Then they found a lot more. They finally had leads but the State Department made them leave, and the Group runs it now. But that was probably the single business success story of the international in Syria. And Cameroon was a big success story, too.

TP: There were still other parts of the world where you would work.

CB: Take pieces. There are plenty parts of the world we stubbed our toe, too.

TP: Well, that is what I meant. The group obviously didn't want Shell competing with

them.

CB: There were some parts of the world that they didn't want us messing around in, like the North Sea. It would really have put a monkey wrench in the works. We wouldn't like them messing around the Gulf of Mexico. We made a gentleman's agreement that there were certain parts of the world that we wouldn't mess in, and there were certain parts they wouldn't mess in, like the Gulf of Mexico. And that made sense. In the English North Sea, they had to be in joint venture with Exxon and they couldn't get out of that. When we bid against them in China, they got a lot of flak from Exxon. Exxon was their bidding partner in offshore China. Ours was Phillips Petroleum. We bid against Exxon and the Group. Exxon couldn't believe that we and the Group didn't compare notes on that lease sale. But we didn't. We were competing in a classic case of competition in the offshore Chinese lease sale, which was about 1982. I went over there to sign the agreements in late 1982 or early 1983, in the Pearl River Mouth Delta. That is one of the few producing fields, one that is owned by Shell and Phillips. But as a general rule, Pecten was able to go anywhere except the obvious places where you didn't want to go, like in Holland or the North Sea or Nigeria. Right in their own backyard. In the same token, they didn't come to the U.S.

I don't know what you are aware of but there was a big class action lawsuit called the Shareholder Derivatives Suit, claiming that the Royal Dutch had kept us from

being international.

TP: That was the Halpern case?

CB: Yes, the Halpern case, which was finally dropped. It was pretty sensitive stuff. But up all through the 1960s, Shell Oil had no reason to go international.

TP: That's what I keep hearing.

CB: We didn't have enough money! We had to constrain the budget. That is one of the things that kept us out of the North Slope.

TP: You were busy with the offshore.

CB: Yes, the budgets didn't really get liberal until the big boom came and the price of oil went through the ceiling in the late 1970s.

TP: That made things like Cognac more economical.

CB: Yes. We built Bullwinkle on $20 oil, figuring we'd get $20 a barrel, and that is about what it did. That was deepwater to 1,500 feet.

TP: You retired in 1986, right?

CB: Right.

TP: In looking through these *Shell News* interviews, you talk about some reorganization . . .

CB: There were a lot of tax reasons to do that in the late 1970s, and early 1980s. We set up SWEP and we set up a couple of subsidiaries like that. It saved a lot of tax. And it was upheld.

TP: Was it sweeping reorganization?

CB: No. Actually, the same guys were running it and we had internal boards for us. We had a board of directors for each of them, but it was all internal stuff. So it was not a sweeping reorganization.

We had a pretty big reorganization in 1980, but it was just structure of the regions versus the divisions kind of stuff. There wasn't anything really sweeping -- no big outsourcing or anything like that.

TP: When did Shell do its big hiring? Right after World War II and then again . . .

CB: We did a really big hiring in the middle 1970s.

TP: Middle 1970s.

CB: The boom had happened and we were expanding. One year, we had a $2.5 billion budget in E&P. So we had all this stuff going on and had a real big shortage of engineers. Of course, we got carried away and hired more than we needed to, but you can't always foresee the future that clearly. Don Russell was vice-president of production when we did that. Chuck Wilson, who is now president of Shell Canada, was the chief engineer. The general manager of engineering in the Production Department. I think we had a quota one year of hiring 215 engineers or something like that. It was a big number.

Then, of course, we had a lot of strange things going on during that boom period. Our attrition rates had gone up. Everybody was hiring, and the business was going like crazy from 1976 to 1980. The average bid per acre in the Gulf of Mexico reached its peak in 1980, and it was enormous because you didn't have wide open sales. The bidding just got ridiculous. The whole business got ridiculous! People were giving people company cars to stay. We didn't do that. We gave our key people -- the first time we ever did -- restricted stock invested over a four-year period. So if they left, they lost part of it. Then the next year, we gave them more.

So it pyramided.

TP: It wasn't very common in Shell, or in the industry, up to that point, to have people moving around. I know, at least in Shell.

CB: No, it wasn't but our attrition rates went up to 8-10 percent. Some companies had 30 percent attrition rates. That will kill you! I heard a story I never could totally confirm, like Amoco lost half of their Denver office or something like that. It was because of the independent's paradise. The independents were expanding like crazy, and they were hiring all these guys away from the majors. That all came to a screeching halt after 1982. Then, of course, by 1986, it was really at a screeching halt. The big watershed events have always been. So deepwater . . it was a 1962 decision to stick with it in the Gulf of Mexico. Big decisions arose about California and thermal oil, because that became a real big profit center. And those decisions were made in the early 1960s. Of course, it was all substantially reinforced with Belridge, along with some pretty important decisions around the carbon dioxide business.

TP: West Texas?

CB: West Texas. Flooding Wassan and building that pipeline. In the decision to get into the coal business, we purposely tried to make it reasonably modest. We paid about

$100 million for R&F Coal Company to get our entry into the business and to start learning the business. We didn't want to make a great mistake. In other words, we didn't want to buy a $500 million company. We wanted to get our feet wet trying to learn the business. Before that, we had all these coal leases up on a Crow Indian reservation in Montana, but they never materialized. We never developed a market; we never became economical.

At the time, with the way oil prices were, it looked like coal was a great place to be. You could really clean up because the BTUs produced were going to be worth a lot. But when the oil prices went south, it was like shale oil, tar sands, and things like that. They were only economical at certain prices. We had good positions in Athabaska and Peace River. They really were hectic times in the late 1970s.

TP: Was there any support for diversifying?

CB: There was a lot of pressure, more than support. It was high pressure.

TP: Oil people within Shell Oil saying, "Why should we get involved in this? Let's stay with what we know best."

CB: Inside of E&P, there were people who said, "What are you doing?" Like when we started a gold mining venture. That was really controversial in the mining

organization. They were out there looking for gold and at some point, uranium. But the gold was really controversial! It was like there was going to be this big shortage of energy and there was all this opportunity. You'd better be doing everything you can. There was a guy on our board named (Carmichael) Pocock who died of a heart attack. He was the chairman of Shell Transport and Trading. He thought we should be exporting coal. And we kept saying you can't afford to export it. You are going to lose money! I'd show him the numbers. He'd come and I would send him out to the mining company so he could visit the guys and they could show him all the economics! He had this burr under his saddle about the need to export coal and the numbers just didn't work. But he was a big believer in us getting the big coal position, which we got.

TP: You ran the business as well as you could.

CB: Yes, we had a really good guy running the organization. I don't know whether you have talked to Mahaffey. He was a really good guy. He was a very, very good business man. So we didn't get carried away . . .

They built it up and sold it. And when the strategy was right, we bought something small to begin with and worked our way up from there. We built our first nonunion mine in Illinois against all sorts of opposition. It worked well. Jack was a damned good guy for that. When he retired, I tried to hire him, but he didn't want to work

anymore! I tried to hire him for Maxus Energy of which I was chairman when I retired.

End of Tape #1, Side B

Tape #2, Side A

TP: I've heard a lot of stories about Tom Hart.

CB: Yes, there are more stories about Tom, and most of them are true. Very colorful. Six foot seven, 260 pounds. Harvard undergraduate. LSU graduate school. Just backasswards.

TP: Masters in Law?

CB: No. He had a master's in geology from LSU. He grew up in Lake Charles. He was bad about putting people down and all that, but he was a brilliant guy. He could generalize things better than anyone I've ever seen, almost to go from all this detail down to general concept. So he was a big part of the organization.

TP: What was his position with the company?

CB: When I became executive vice president, he was exploration vice president. Then he went to London as coordinator of planning for the group, and Jack Threet took his place. Jack had been in Pecten. Then Don Russell took Pecten for a while. Then Don came in as vice president of production, and Marlan took Pecten. And then after Marlan retired, Mike Forrest took Pecten. Before Tom became vice

president of exploration, he was general manager in Denver and he was regional exploration manager in New Orleans. He came up in the Exploration Department. Then after he came back from London, he became regional vice president for the southwestern region. He finished his career back again as vice president of exploration. When he retired in 1989 or 1990, he got lung cancer because he smoked about four packs of cigarettes a day. He would come in my office when I was smoking. I would look in my ashtray and I would have smoked one, and he had smoked six.

TP: Spoke his mind?

CB: Diplomatically. It depended. He spoke his mind. Most of my associates spoke their minds. That was part of our culture. You could speak your mind without being insulting. There's nothing wrong with disagreeing, as long as you do it the right way.

TP: Bookout was that way.

CB: Yes, he used every way he could to try to get you to change your mind about something. And then after you'd change it, you would find out he had a reason in the first place. He just wanted to see if he could talk you into changing it. But we all knew him well enough to know better after he had done it to us once!

I'll never forget him talking to Don Russell and me in the building of a gas plant. This was when he was vice president in New Orleans. We were going to add on to a gas plant. The question whether to do it union or nonunion. The construction company had a nonunion arm and they had a union arm, which had a different name. They could do it either way you wanted them to. It was in Plaquimines Parish. Don and I figured we could put up with the flak the sheriff was probably going to enforce. So that was the key: was the sheriff going to enforce the law? We recommended to do it nonunion. I was general manager of that division. Don was Regional Production manager.

John sat right there and talked us both out of it. And we finally said, "Well, maybe you are right. Let's do it with this." And he said, "You got it right the first time." What a lesson! But he raised so many objections that he finally convinced us that we were wrong when, all along, he agreed with us. But he wanted to make sure we had thought it through.

TP: To look at it from all possible angles?

CB: Yes, he was really good.

TP: Dedicated.

CB: He did it right. He was dedicated, too, yes. He worked long hours.

TP: That's what I heard.

CB: He never stopped working. Bob Nanz tells a story that when Bob was exploration manager, he and John were to meet and go to some meeting in Denver. Bob was the head of exploration research in the lab. John was the exploration manager of one of the areas -- Denver or someplace. And they were going to meet, and the staff was going to make a big presentation to him. They got up there and got to talking to each other in some bar and never made the meeting! John was so busy trying to figure out what Bob knew and pick his brain, that he never got out of the thing to go to the meeting! I think this was Nanz's first encounter with him!

TP: I am going to have to go through the trauma of the buyout.

CB: Yes.

TP: How did Bookout deal with it?

CB: You can't believe how well he handled that, because I saw it firsthand. I was right in the middle of that, doing the appraisal. We had to come up with what we thought

we were worth to recommend to our board whether they accept the group's offer. And we gave the board a number, and they told the Group they couldn't accept $58 a share. They would be willing to discuss X. Pete Baxendell walked out. He said, "Thanks, but no thanks." And we had a tender offer that afternoon! You couldn't blame him, but at one of the parties, everybody was doing basically what their fiduciary responsibilities were, including van Wachem and Baxendell.

TP: What was the motive behind the buyout? They had this cash on hand . . .

CB: I think there was a lot of it in that. And you have seen a lot of the things happen since, like the consolidation of Chemical. In the long view -- and the Group was really good on the long view -- is it is going to be much more efficient? In other words, they had many limitations on what they could invest in the U.S. If they wanted to invest a lot more money, we had to have it. They couldn't just funnel it to us. That wasn't possible. So it opened up a lot more flexibility for them and how they invested in the U.S. And I think that was part of their vision. As a matter of fact, they wanted to double their size in the U.S.

That is what they represented it to be, and particularly Baxendell did. Pete really didn't have a devious bone in his body. I wouldn't say that for a lot of the older people. I don't think he did. I think he just wanted to have the freedom . . .

Maybe they thought they had investment limitations outside the U.S., that they had plenty of money and they could pour more of it into the United States. They couldn't use Shell Oil as a vehicle to do that under the previous structure.

TP: Were they mainly interested in investment opportunities in E&P?

CB: In whatever, not just E&P.

TP: Were they committed to the deepwater like Shell Oil?

CB: Not really. They were skeptical of the deepwater part.

TP: I am wondering if that by this time, they had come around.

CB: No, they had not, because we hadn't seen a great many deepwater discoveries. We had found Bullwinkle, but we hadn't made any big discoveries in the real deepwater out there. We bought the leases, bought Mars in spring of 1986. Auger, Mensa in 1984. Anyway, in particular, Pete was always questioning "Are you really sure there is any oil in that deep water at all?" They weren't really in a position to tell us to stop because the board was supportive of it. There were just two votes on the board. I sat on that board ten years. I never saw but one actual vote. When they polled the board membership, there was a lot of consensus, and a lot of discussion.

But when you had an issue and voted, everybody agreed. We had one case where we had to vote whether we were going to split the stock two-for-one or three-for one in 1979. It was a big argument. The chairman, a guy named Dick Duborner, actually polled us individually and I think the last vote was almost a tie. Finally, Dick said, "Well, if it is that way, if you want to just split it three for one, go ahead." And John said, "No, no, it's too damned controversial, Dick. We'll just split it two-for-one and forget the three-for-one split." We were in New Orleans. That board meeting lasted until seven o'clock at night!

TP: That was the only vote. How long were you on the board?

CB: Ten years. Most of the time, we had a lot of discussion but the time of the discussion was finished. Even when we bought Belridge, it was, "Do I hear a motion to bid X? "Yes." "Second?" "Yes." Any comment? We already had all the comment. We didn't have board meetings where “ayes” were counted, because the comment had already taken place. The only objection to buying Belridge was when one of the board members warned us to take a partner. He didn't think we could handle it ourselves. But, beyond that, they were more enthusiastic than we were!

I have about exhausted everything I can think of.

TP: Then I don't want to keep you too long.

CB: I've got plenty of time.

TP: This has been very helpful.

CB: If I can think of anybody else you might need . . . you've talked to Mahaffey, you've talked to Nanz, you've talked to Bob Ferris. So, you have talked to most everybody that was involved.

THE END