MMS OFFSHORE GULF OF MEXICO

ORAL HISTORY PROJECT

Interviewee: ED PICOU, JR.

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Interviewer: Tyler Priest

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Bio

Mr. Picou graduated from LSU with a B.S. in 1955, and Shell hired him while he was attempting to complete his master's degree. He began working for Shell in 1957. He worked in paleontology during his entire career at various labs. He worked on the salt dome study leading up to the 1962 lease sale.

Summary

The interview covers various topics. He has interesting discussion on the salt dome study. Comments on the geology of the gulf coast basin. He also described Shell's exploration success. Covers various aspects of paleontology in exploration. Ends with comments on the Roosevelt Hotel and the Petroleum club.

Side 1

TP: Today is July 8, 2003. This is an interview with Mr. Ed Picou, Jr. The interviewer is Tyler Priest. We are at Mr. Picou's office in New Orleans. Let's just start off with a little personal background.

EP: O.K., well, I was born in Baton Rouge and went to LSU there with the thought of becoming a chemical engineer, but, as fate had it, I took an elective in physical geology. The instructor was the old gentleman who founded the school of geology there at LSU by the name of Henry V. Howe.

TP: This story sounds a lot like Jim Lampton's.

EP: He was such a charismatic person and just made the geology come alive for you. It just was so interesting that I was swayed into geology and just abandoned any thought of going into chemical engineering. I always had a love for going to the beach and looking at shells and things such as that. So, my natural bent was to go into the paleontology and the stratigraphy aspect of geology which is the layers of rock in which the fossils are found. By the time I got into my junior/senior level, I specialized in micropaleontology and was taught, not by Henry Howe, but by one of his protégés, Dr. Harold V. Anderson.

Dr. Harold V. Anderson came to LSU after World War II and did his Ph.D. thesis on the Mississippi mud lumps and their genesis. He worked in tandem with another Ph.D. candidate at the same time by the name of James P. Morgan. So, the two of them did research for their Ph.D.s on the evolution of these mud lumps. Part of the evolution was that mud lumps, just like a mud volcano, would bring up all this material and the microfossils were part of the material. And so, Dr. Anderson analyzed all these microfossils and that was his part of the dissertation.

Dr. Anderson recognized that I had a, shall we say, calipers in the eyes for these little microfossils, and he thought that I should devote my career to this. By the time I graduated with my bachelor's degree in the spring of 1955, I had interviewed with a number of companies, including Shell in the fall of 1954. All of them said basically the same thing, 'Come back after you do your two years in the military service and we will see if you are still interested in a job.'

So, I came back to the university. Because I graduated in the spring, I had a full semester worth of time to kill before on active duty. So, I went on into graduate school and took twelve hours of credit. Some of that was in stratigraphy, and I took Dr. Grover Murray's course in Gulf Coast geology. So, in September of 1957, I came back to wrap up that master's degree, but fate, here again, intervened. Even before the semester began I ran into the same two gentlemen who interviewed me in

the fall of 1954. Their names were J. Frank West and Jack Larson. They recognized me. They said, 'What in the world are you doing out here? We wanted you to come downtown and start work with us when you got back.' I said, "Well, I had twelve hours on this master's degree. I thought the proper thing to do was come back and finish." 'Oh no. We can teach you more at Shell in the two years that you would spend down here finishing this degree. So we would much prefer you to come downtown.' So, I was in a quandary. I was a young guy. I did not know what to do. So, I went and talked to the department chairman, and he said, "Well, Ed, it is up to you. You can go to work for them, and after a while, if you do not like what they have to offer, you can always come back to the university and complete your degree." I said, "Fine." So, I had the weekend to mull it over. I talked to my parents about it. I talked to a couple of students about it. So, I just decided I would just go to work for Shell.

I went to work for Shell in their small Baton Rouge office. There were some real key people there working there. Billy Flowers was there. A fellow by the name of Claude McMichaels was there. A very elderly gentleman by the name of Stanley Say, who worked for Shell down in Mexico prior to being thrown out of the country. He had a group working special studies. I do not think Jerry O'Brien was there. He may have been very late but there were some key players there in that Baton Rouge office. We had a group of paleontologists, I guess about ten of us and I can . . .

TP: That Baton Rouge office was mainly working southern Louisiana?

EP: Just south Louisiana. It was the south Louisiana exploration division, and we had about 80-90 people there. We had a full compliment. We had even some seismic crews working out of the Baton Rouge office. I think Forrest was one of the party chiefs there. Back in the days; as I am sure Forrest and Flowers have told you, geophysics was not that good. The electric logs were the primary tool. The geophysics could tell you there was a lump, some sort of structure to drill, but you had to integrate the wireline surveys from all the logs around that prospect that you were going to drill. And part of that was the paleontology. What were the bugs telling you? It was a very concerted effort. And even after they shut that office in 1960 and moved to New Orleans, in September of 1961, I was working for Lampton right downtown here in the old Shell area office at 935 Common Street. The building is still there. And we worked on the fourth level there at 935 Common. That group of people was the marine group, and it was a very, very small group of people. Jerry O'Brien was there. Perry McClure was there. Ronnie Knecht was there. Tom Fields was there. I guess you could find an organizational chart for 1960.

That 1962 lease sale was the first one that I was involved with, and I helped Lampton and a group of people pull together geologic data from onshore fields to use as go-bys or analogs for these prospects.

TP: That is one thing I was confused about. I thought the salt dome study looked at salt domes offshore, but it was onshore.

EP: No, it was onshore. We pulled together data for some . . . I have got the book in there . . . 34/38 onshore salt domes and some other salt dome-related fields. But all those analogs were from onshore where we had a suitable amount of well data and maps and production data. So they used these data as kind of go-bys for these prospects, because prior to the 1962 lease sale we had shot a lot of offshore geophysics. At that time, companies had to nominate acreage. So, it was incumbent on Shell to find all these bumps and lumps. We might say, 'this looks like Week's Island salt dome,' or 'this looks like White Castle,' or 'this looks like some other field' that we had this data on.' So we could kind of theorize that this is what we were buying. So a lot of work went into that, and only recently has that information been released and published.

TP: Oh, it is published?

EP: Yes, it is published, and I have a copy of it. You can get a copy of it.

TP: O.K. I will have to get that citation.

EP: Yes, I will get it for you before you leave. Actually, I guess it was Tom Fields and Jerry O'Brien that were the movers and shakers and pulled all that information together for publication. It is published jointly by the New Orleans Geological Society and the Houston Geological Society.

TP: Was Ronnie Knecht the one who initiated this study? Or, who, on a management level . . .

EP: I may be misleading you but I believe that he was one of the people; perhaps he was not the sole person. Ronnie was very forceful, and he had the vision of seeing that the offshore should be just as productive as the onshore. By looking at the strike of the coast line -- it was kind of diagonal to the true of the geology -- we could see that, my gosh, if a Golden Meadow which is a very late Miocene type field and onshore, there would be corresponding fields offshore. Ronnie and these people who had put together this study just said that the offshore had to be as productive.

TP: I am trying to understand the timing of this sort of realization. You hear people saying the same thing, you know, in the late 1940s. I just am trying to understand when industry said, 'ah-ha, the offshore is going to be as productive as the onshore.' It does not seem like there was as much conviction in the earlier days.

EP: I think, again, it was the diligence and the tenacity that Shell had which made them

do all these regional studies and understand how the animal behaved. It was not until about the early 1960s they really said, 'hey, we really know what we are doing here.' And that is why Knecht was so bullheaded. He went to New York and demanded of McAdams to borrow money from Royal Dutch Shell to go to this Sale 10.

TP: I did not realize that they borrowed money from Royal Dutch Shell. It was not from internal funds that they got this money from?

EP: No. They borrowed money from Royal Dutch Shell to go to Sale 10 in March of 1962, and, as you know, that is where we bought well over one-half million acres.

TP: The first federal sale was 1954, and then a long hiatus because of the tidelands dispute; I guess people were just thinking, 'well, we are just moving out a little bit from shore and they were not really thinking about . . . '

EP: But that Sale number 10 in 1962 went all the way out to the shelf edge because, in those earlier days . . . I even met the man that worked on laying out the grid, the offshore . . .

TP: George Schoenberg, the Shell attorney in New Orleans?

EP: No, this guy was with Exxon. I cannot remember his name now, but I met him at some AAPG function some years ago. He was just one of a committee. He was not the man. He worked as a committee to equitably divide up this offshore...

TP: Was this when they made south additions . . .

EP: Maybe it was.

TP: I think Shell was . . . the Shell attorney in New Orleans was instrumental in that too. So it must have been a part of a committee that was meeting in the OCS office in New Orleans.

EP: It was not until all that was in place that I guess the government felt comfortable holding the sales out into water depths up to 600 feet because in that Sale 10, we bought the blocks. Prospects, like Prospect Edge out in Grand Isle was right at the 300-600 foot bathometric contour along with those wild cats in 1963 drilled by the *Blue Water #1*.

TP: This is something I have heard – that Shell had some deep water bids that they won in 1962 that were rejected because they were the only one bidding and they barely met the minimum . . . This is one reason why Shell held its famous school for industry to share the semisubmersible technology with industry. They realized that

they were not going to be able to get these leases without some kind of competition. Do you remember any of that?

EP: I do not recall any of that but I do recall though Shell's connection with Odeco and how Shell engineers worked with Odeco to build these drilling rigs – the *Mr. Charlie* and the *Margaret* and all these things. Shell continued working with them to . . . because as we were going out in deeper and deeper water, we needed rigs to drill in that deeper water. So, we had a very close connection with Odeco.

TP: That was forged by Dykstra and Laborde.

EP: Yes. I can well remember in the early offshore days. Now, I can only go back to 1961, but the geophysics was the leader. I mean, it could lead us to where to drill, but paleo played a really, really important role. It still plays a role today, even with those wonderful visualization things that we have. My credo is that any two rocks of different ages can have the same physical properties. And we knew two or three we had surveyed. You have got to have some way to ground truth it – how relative in common space is to the same hunk of rock 50 miles away. The only way you can get that is the bugs. They tell the time. They tell the time. They tell the bathymetry in which the sediments were deposited. True, today, we do not use much of it, but there are some instances where you do.

I can tell you that on some of these offshore salt domes we worked the paleo on as many as 100 development wells because the E logs were not that definitive and neither was the geophysics.

TP: Difficult to get reflections in some places.

EP: Right. You never knew exactly what the electric log was telling you and what these little sands were. You had to hang an age data on it and make it relative to other wells that you drilled. That is the way we did it. And that is why, even after Lampton left, and a fellow by the name of Blair Parrot . . . Blair was also at that reunion in Galveston one year ago. Then I came on as the supervisor of the paleo group. I used to tell the managers all the time that I could not leave any part of the offshore map idle very long. I would always try because by that time, the government would allow a company to hold wildcat log for two years, and after two years, it became public domain. And after that well was released, I would contact my co-equal, say, at BP or Amoco or Exxon and say, 'Hey, I would like to borrow materials or trade you materials on your wildcat you drilled out in North Padre Island block 117.' And they would say, 'Yeah, well, we would like to have material on your Shell well drilled in South Marsh Island Block 110.' And I would go to the respective geology people and say, 'Look, Exxon would like to have material on this South Marsh Island well, and do you think that would be a comparable trade for material' . . .

TP: This was before the two years was up?

EP: After we had the logs and could see that there were sands, say, all the way to TD. Well, how old are those sands? Well, I ran the paleontology on those wells. We could plug them into the regional stratigraphic framework, and by doing so, we could keep our maps up to date all across from Brownsville, Texas around to Florida. And we always maintained a key well file in those sorts of wells. We went into that key well file. Capturing information in a computer was almost unheard of back in those early days of the 1960's when Lampton was the division paleontologist, but we were inputting at the microscope fossils, well data summary, all the formation tops that could be used to flush out the interpretation of the electric log. We captured all that. And by the time I was division paleontologist, we dumped all of that into a huge relational database. Whereby, if you were a geologist and you came to me and said, 'I want a map of all the tops of, the top marker in the middle Miocene,' I could punch a button and give it to you in just a few minutes. We were the first group in the offshore division to have all of our information digitalized. It just made life so . . .

TP: Do you mean the paleontology . . .

EP: The paleontology. We could service all the geologists with any kind of

paleontological information they needed. If they wanted all the well data, and all the tops data on all the wells in West Delta, we could print it out for them.

TP: When did you digitize this data?

EP: It must have been about 1974 or later. We had it on punch cards and all like that. It was so clumsy. We printed out these massive, tractor-driven printout sheets, and we had books of data. We had a book on West Delta. We had a book on the Grand Island. Periodically, Janet Patterson, who was "Our Girl Friday" who did all this work, she would reprint all these books and destroy the others. But we covetously kept those books because they were hard to do and produce. Finally, like I say, in about 1974-1975, I hired this young man by the name of Jim Hebert [sic], who understood computers. He was just great with computers. He said, "Ed, let's do this. Let's dump all this information into this relational database. Whereby you can pick any kernel of information that you want or the whole thing. You can have it all.' It just made our life much more simple. It really was good.

TP: When did the industry begin using micropaleontology? Did it go back to the 1920s?

EP: Oh, yes.

TP: In the Gulf Coast.

EP: Let me tell you: The first oil well was discovered on January 10, 1901. Spindletop. By 1922, companies were already using drill cuttings. There were macrofossils or microfossils to help them understand the stratigraphic sequence. By 1933, Gulf had already hired paleontologists. Humble Oil had hired paleontologists. Shell had hired paleontologists. In the early 1930s, publications were already coming out through the American Association of Petroleum Geologists bulletin about Gulf Coast stratigraphy. It all predated electric logging. There were more electric logs run in the Gulf Coast or anywhere until almost before World War II, in the late 1930s. Then there were rudimentary first electric logs. So, paleontology was well established as the primary tool for refining the stratigraphic column and pinning down the age of these reservoirs. And sure, they were using torsion balance geophysics, refraction and stuff like that, but it was not until, I would say, after World War II that the computer expertise began to blossom and geophysics expanded, exponentially so.

TP: You had companies like GSI . . . .

EP: Yes. So, paleo, like I say, had its hey-dey. I once made an estimate of all the well logs that we had worked. Onshore south Louisiana alone represented well over 700-800 man years of at the scope looking and plotting data. It was just incredible! Comparable to, perhaps even a larger amount of data than from coastal Texas. They

had huge staffs of paleontologists working in Corpus Christi and in Houston working those trends in the same sort of work that we were doing over here in Louisiana. And all that information is almost lost today. At one time I wanted to put it into the computer and it was never done. It was never done. And yet, that information is very valuable. It is to me because I worked on it, but to Royal Dutch Shell today, it probably is not because Shell has no interest in onshore Louisiana . . .

TP: Academic interest?

EP: Academic interest. But I cannot tell you how many times, even before we left Baton Rouge, I was well sitting as much as 70, 80, 90 days per year on rigs. I was controlling drilling and calling back to the office saying, 'Yes, we have reached the _____. Do you want to run a control log here or not?' 'No, let's wait until we get a bump and then we will run a control log, then we will set pipe and drill deeper.' Back then, it was very hard to do because the communications was always by radio. You know, as hot as it was, once the heat wave started interfering with the radio transmission, we would always try to do the bulk of our radio talking at night because during the day it was hard to communicate.

Paleo played a very dominant role in assisting not only the wildcat drilling but in the development drilling of all these fields. Today, we have still a very small complement of staff left in major oil companies. Major work is done by consultants.

After I left Shell in 1991, most all of the oil companies have also divested themselves of all their biostratigraphic staffs. And at a research conference in Houston, it was decided that we needed, all of us old-time paleontologists, to preserve this information somehow. Through the Gulf Coast section of the Society of Economic Paleontologists and Mineralogists, I was elected chairman of this committee to pull together the information that will have used in trying to preserve and bid information on some 217 key marker fossils. And we had to describe them. We had to figure them. We had to cite certain place wells where they were found. This was the thorny part; Shell had its own nomenclature for all these fossils. Amoco had their own nomenclature. Exxon had their nomenclature. BP and Union had their nomenclature. And we had to sit down as a committee and work through all the synonymy that this was indeed the same fossil. And finally, in 1999, we published that, and it has been a big seller. People wanted that. Even one service company bought like 25 copies or 30 copies . . .

TP: What was the title of this publication?

EP: Well, I will have to get it for you. I will give you some information out of it. It was a major effort because we old-timers wanted to preserve and have at hand for the people who were replacing us because a lot of the same stratigraphy is being used offshore. So, it is for offshore use as well as onshore use. So, it is a valuable publication.

TP: A question, going back . . . I wanted to ask you more about the salt dome study onshore. Can you list three or four things that came out of that, principles that you went by then or were there different things for different kinds of salt domes?

EP: I think that, and Jerry Brown was instrumental in this, too, between true piercement dome, intermediate dome, and deep seated salt domes . . . How do we define the objective section around a salt dome? What areas of a salt dome might be more prospective than others due to the size and shape of the dome? Also, the criteria were developed from that study. Like I say, I am surprised Shell ever let go of it and allowed it to be published in the common public domain, but they did. Well, after all, it is pretty old, but still in all, I think all the salt domes in the Gulf Coast basin have been leased and drilled by now. That is one reason.

TP: It probably helps a lot of the smaller companies buy up the old leases and try to . . .

EP: It still sells quite well. It is still a good publication.

TP: Did objectives change as you move from the Miocene onshore to, I guess it would be more recent rocks, you know, as you went further and further offshore? Miocene was still the thing that you were looking for until you got into the Pleio-Pleistocene in the early 1970s, right?

EP: Right.

TP: Did anything change in the geology or is it just . . .

EP: It is just more of the same. I told Dr. Peter Vail, the guy from Rice who developed all this seismic stratigraphy and sequence stratigraphy. I told Peter Vail once at a meeting, "Peter, until you came along, I could tell all these young geologists exactly how the whole Gulf Coast basin was filled in and was developed. It is a very simple process of ancient Mississippi River being saved from the craton into the basin, filling up a certain area, and once it reaches its isostatic equilibrium it has to move to some other place and fill it in somewhere else. And the process starts all over again. And, of course, you are building on another layer of Jurassic salt that acts just like toothpaste in a tube, where you hit it with your hand, it squeezes and goes somewhere else.' And that is basically how the Gulf Coast basin was built. If every increment of time is a place on that map where that depocenter is located across a growth fault and that growth fault allowed the expansion of that section to be built and that locus until it reached that equilibrium which was usually about 8,000 feet, you could move about 8,000 feet of sediment into that location. Then, the river had to go some other place. And there were times during the Tertiary, around 65 million years, when the craton reached an equilibrium and the base level of erosion was almost zero. And then, what happened in the Gulf Coast? The previously deposited,

huge wall of sediment, its weight alone subsided and the Gulf would encroach over that and weigh down basin-wide shales – basin-wide shales, that could later in time be identified by their contained microfossils. And then, something happened to the craton. The craton had some sort of pyrogenic uplift. It rejuvenated the base level of erosion, and voila, here comes all the sediments here. It was a constant seesaw between the craton and receding basin and base level of erosion.

TP: That is a great description for the layman to understand. That is very good. Robey Clark mentioned it was just like taking a big fire hose of sediment and moving it from one place to another.

EP: Exactly. I will give you a copy of this paper right here which kind of sums up. Forrest Curtis presented that paper everywhere. Everywhere. Because it summarizes . . . We wrote that paper for a presentation in 1976. It was the 50th anniversary of SEPM, the national SEPM. Each regional section asked to summarize all the concepts that had developed in the previous 50 years in their specific regions.

TP: This was the 1976 annual meeting . . .

EP: And we presented that as the Gulf Coast summary of how . . . We gave it a fancy title, but it summarized the thoughts and processes, the ideas, that we generated in

those 50 years. It was a fun thing to do.

TP: Who among the other oil companies would you say were Shell's peers in micropaleontology and geology? Were other companies running the same kind of study that you were in preparation for the 1962 sale, that you were aware of?

EP: All the other oil companies that had major paleontological staffs, whether it be the old Humble that preceded the Exxon days, Pan American that preceded Amoco or Chevron, Chevron Gulf. Calco. I do not think any one of these companies' paleo staffs were blessed with the integration that we had within Shell. I can say this, Ty, now because I am 71 years old and have talked to a lot of my peers who were in these staffs. I can tell you one guy who was head of the paleo staff in Humble. His name was Duane Leroy. The same time I was working in the offshore, he was working in the offshore for Humble. He ran their paleo staff, and he was always intimidated by Shell.

TP: Everybody was, from what I . . .

EP: He said, "Ed, their managers want to know what Shell is going to do in the next lease sale." I said, "You are sure not going to find out from me!" People from Chevron said, "You know, you guys really had your act together." I said, "Yes, we did, and we kept it together because we always worked as a team – just like a three-

legged milk stool. There was a paleo, there was a geology, and there was a geophysics. And we all stayed together as a team."

TP: This was just something that had been time honored in the way Shell operated or were there certain managers who were to be credited for keeping it together?

EP: In hindsight, I can truthfully say, until the early 1980s, I think . . . Well, I would stretch it to the mid 1980s. We were not able to keep some home grown managers - people like Billy Flowers. I started work with Billy Flowers. We used to play basketball together after work. He was the area vice-president here, general manager . . . we could keep people like Billy Flowers long enough, people like Mike Forest, on the team who understood exactly how to do it.

After the middle 1980s, after Billy Flowers retired, we started getting in feuds with a lot of people coming from other areas -- from Denver, from old Denver area, from Midland, from Alaska, all this west coast experience. They really did not understand the complexities of Gulf Coast geology. Take, for instance, God love him – I love the man – Burt Bally, Dr. Burt Bally. He was a chief geologist in Canada and came down as chief geologist in the states. He came to [glitch in tape]. He said, "Oh, Gulf Coast geology, all the same. It is a piece of cake. There is nothing to it." But he really did not understand it. He did his Ph.D. in paleo in the Alps, which is kind of a funny geology tool, but . . .

End of Side 1

Side 2

EP: . . . understand how complex the geology was in the Gulf Coast, particularly in the offshore that we are now working so intensely. So, Shell's prowess in the offshore stayed dominant until the middle 1980s. After that, things began to change because all the old-time management began to change. Not that the thrust was not still there and carried forth, but it began to change.

TP: So, there was still a significant degree of continuity even after Dykstra and his people were displaced?

EP: Oh, yes. Let's face it, a company like Shell can only move forward to the strength and the success of its exploration team. And the successive managers after Dykstra knew that. And they learned to keep that team in place in making these discoveries. Like I say, even in the 1980s, whenever we were going to lease sales buying acreage in 6,000, 7,000, 8,000 feet of water, I kind of winced and thought, how are we going to drill in that? But, oh gosh, the English guy came around . . . his name right now . . . Dave . . . a British guy . . . a kind of senior moment . . . I will think of his name later.

TP: Not David Barran?

EP: No. He is here in the offshore. "We will find a way to do it. We will find a way to do it." And we ultimately did.

TP: That is a mantra that always seemed to be repeated.

EP: Yes. "We will find a way to do it." So, like I say, I have had any number of other company people come up to me and say, 'Man, that Shell team was something else. You guys really knew how to find that oil and gas.'

TP: You are right. The exploration department or aspect of the whole endeavor seemed to be a crucial part that is not often appreciated because Shell was doing so many great things in production, too, with Collipp and Geer and all those guys who were involved with *Blue Water I* and the other truly deep water stuff that they were developing like the subsea and all of that. It seemed like other companies . . . one interpretation I have heard is there was not a whole lot for Shell to do onshore. They did not have the same kind of positions that, say, Texaco and Gulf and Humble . . . They may have been more preoccupied with production and what they had in south Louisiana. Shell just had to focus on exploration.

EP: Had to move on. Really. It was all over. It is amazing. We had a really good team

and head office left us alone. Thank goodness!

TP: And guys who ended up in top management spent time in New Orleans and seemed to at least have the faith in the staff here. I am thinking of people like Bookout.

EP: Oh, yes. Well, that is another thing, too . . . As long as Bookout was in place, Bookout being a geologist, he understood the trepidations of trying to make a real good commercial discovery. It is not that easy. And so, as long as Bookout stayed at the helm exploration was in good stead.

TP: I am just beginning to look more at maps and trying to find historical maps of fields in the whole region. You just see hundreds of little tiny . . . I guess they are not so tiny, but when you compare them to, say, the Middle East or East Texas. I guess, in the grand scheme of things, they are fairly small but there are a lot of them and they are all over the place. You really have to be precise.

EP: Oh, yes. Absolutely. Talking about maps, this is a total aside. I am reading *1421, The Year That China Discovered America*. It is quite possibly true that Columbus and Vasca de Gama and these other latter day people used charts and maps made by the Chinese. A fascinating book.

TP: I will have to check out that book.

EP: But anyway, that is kind of an aside, talking about old maps. This was published, I think, last year or this year earlier by a retired admiral from the British navy.

TP: I will have to see that . . . Then there is that book, *The Map That Changed The World*. I have not read that.

EP: I have read that. It is fabulous. In fact, I have an autographed copy by Simon Winchester. There is one book he did on Krakatoa. I also have an autographed copy of that one. It is a fabulous book.

TP: Well, I have tried to find historical maps of the offshore. The National Archives, USGS records has some. Does the AAPG have stuff like that? I guess they would not have the leasing maps.

EP: They would not have the leasing maps but . . .

TP: I have also been told that the Transco map was something that everyone used, I guess, for the pipelines.

EP: The pipelines. The old Transco pipeline. Of course, another resource is the Gulf Coast Association Geological Society's transactions volumes.

TP: I have looked through some of those.

EP: They might have all that on CD-ROM. I can even pull it up through the AAPG from their web site. Early maps are kind of hard to find. Really hard to find.

TP: Yes, they just disappear. So I guess, going back to the 1962 sale and the aftermath . . . and Shell did very well in the 1962 sale compared to the other guys.

EP: Oh, yes. We bought some wonderful fields.

TP: That is one of the reasons why it was so successful.

EP: And I think part of that success was based on doing that analog study for all those onshore salt domes. I mean, we were really worked tooth-and-nail on that.

TP: How did the work you were doing evolve as you moved into, say, the late 1960s sales and the 1970s sales? Did you work in the Pliocene too?

EP: Yes. I stayed in the offshore division from 1961 . . . in 1965, I spent about one-half a year in, of all places, Lafayette. They had a small exploration office in Lafayette. I knew when I got there, that was going to be a short assignment because by

Thanksgiving, they announced they were shutting down the division and moving it to New Orleans. And then, from January of 1966 until December 31, 1966, I worked in what was called . . . It was a recreation of the old office I started in, in Baton Rouge. It was called the South Louisiana Exploration Division. But we did not have any budget to drill wells and no budget to shoot seismic. It was just a holding position. And I had about a dozen paleontologists and I kept them busy working samples on deep key wells across south Louisiana and doing kind of special studies for the geophysical group. So, in January of 1967, I came to this very same building. The onshore division was melded in with an exploration group that had come down the previous summer from Jackson, Louisiana. In fact, I worked on this very same floor in 1967 through March of 1968. I had a corner office.

TP: 234 Loyal?

EP: 234. Room 928, right down the hallway. I stayed in that office until I moved offshore. I was told I was going to go to Houston after our lease sale in offshore Texas because then, the lease sales were separate between Louisiana and Texas. I stayed in the offshore from January of 1967 until March of 1968, when I did go to Houston. During that time, I did a special study putting together all the information on the Pleistocene. It was an internal report. I have a copy of it. So, everything that we knew about the Pleistocene and the offshore now was used as kind of an analog for the offshore for the Pleistocene lease sale. And then, in 1960, I did go to

Houston. After arriving there, I realized, my God, this is déjà vu Lafayette all over again because they had no budget. In December of 1971, I came back to New Orleans and stayed in the offshore until I retired. So, I had kind of a strange history.

One thing I want to tell you that is not common knowledge: When I was hired on in September of 1957, the division geologist, J. Frank West, was just recovering from a detached retina operation, and Jim Lampton was kind of running the group temporarily. But at that time, in September of 1957, the division paleontologist by the name of Don Macomber had recently left Shell to go to work with Jack Crosby, a previous Shell employee, to form Crosby, Macomber Consulting Service. So, whenever I arrived, Jimmy Lampton, with J. Frank West's approval, set me up in J. Frank West's outer office, and Frank had me examine the wells that he was personally interested in because he could not spend much time at the microscope. So, I prepared all the samples and did all the paleo. Have you ever seen a paleo strip log?

TP: No, I have not.

EP: I will show you one before you leave. I worked so many wells. I was preparing this information, and after I had worked the well, I would say, "Frank, here is this marker and this sample right here. Look at it." And he would look at it. And so, he mentored me through working wells for him. For over one year I worked wells

specifically for him all over south Louisiana. So, that really afforded me a beautiful opportunity to learn a lot. Whereas, the other younger guys were working in specific trends, I got to move across the map. So, his tutoring helped me immensely. So, I really got a leg up whenever it came time to promote somebody. They promoted me to go to Lafayette and I came back. Then, I was in this holding pattern again until I was sent to Houston. Then, I came back and, Blair Parrot took over for Lampton. I took over for Parrot. So, I had a strange career of showing up at the wrong time at these offices where my job was to send through some of the paleontological staffs and keep the best. I pitched the oldest guys and let go some of the younger guys. So, it was kind of tough.

TP: So, as you move to the Pliocene, Pleistocene . . . is there much difference from . . .

EP: Not really. It is still part of the tertiary. It is not drastically different except that in doing the Pleistocene, we had these sea level borings which was a new wrinkle, but the paleontology, doing the paleos, was about the same.

TP: I guess the key development in that period as far as exploration was bright spots?

EP: Yes, right. By then, the computers had come on and technology was such that paleo was already, I would not say put on the shelf, it was still playing a vital role but it was not quite as important.

TP: Did it play a role in deep water turbidite geology? That was what you are looking at in those early 1980s, the first area wide sales . . .

EP: Well, yes, because by the time I retired in 1991, we had already drilled on Mensa and Mars. We had drilled Auger and all of those things. So, I had gone to The Hague in September of 1990 for a stratigraphical workshop and my paper was all about how we tied the shelf deposit sediments into the deepwater sediments – the criteria and whatnot that we used. And the Royal Dutch Shell people thought that was the best thing since sliced bread! They really liked it.

TP: Isn't offshore West Africa similar?

EP: Oh, yes. Believe it or not, by September of 1991, I was already pitching off and we got rid of the bulk of the water stratigraphers. But, like I say, I think Royal Dutch Shell, and most of the other companies, too, realized, or their mindset was if they were from management, why do we need this minutia of data when you can just see it in a 3D version? But as you work a 3D data cube around a salt dome and got it down to the nitty-gritty around the dome, those things wink and blink as you move from fault block to fault block. You never really are sure of your correlations. Stratigraphy is still needed to sort out those kind of phony things. And, like I say, jumping 50 miles away in 3D seismic can be treacherous.

TP: And most of that work, as you said, is done by consultants now. When did Shell get rid of their biostratigraphers?

EP: In 1991.

TP: Was this the industry sort of generally?

EP: Between 1988 and 1991, the bulk of the big companies got rid of their bio-strat staffs. The very date that I walked out of the door, eight of my staff walked out of the door. Between us nine people, we had 281,000,000 years of experience of working behind the microscope! That is gone. And that is why we old-timers in this professional society thought it was prudent to try to preserve some of this stuff for the consultants who would be coming on board now and later. That is why we did it.

TP: Well, it is a good story, and it is vital. It is certainly a piece that I was not aware of until I talked to Jerry and you and Jim.

EP: Like I say, paleontology was the leader from day one, from 1922-1923 on through until when we left the companies, really.

TP: And paleontology is most valuable in the Gulf Coast? Did Shell do this kind of

work in other . . .

EP: Like in California, Shell had comparable staffs of paleontologists working in tertiary of California. Tertiary of California has overprint of all the compressional tectonics that we did not have until we got into deep Gulf.

TP: One other thing I wanted to ask you, seeing the names of Rufus Leblanc and S.W. Loman: How did the geologists and paleontologists and operations interact with what was being done at Bellaire and in research? Was there a lot of interact or were they two different worlds?

EP: It was basically two different worlds. The production geological engineers who had an assignment at BRC might ask us in operating divisions for specific data for a field. But early on, people like Rufus Leblanc and Hugh Bernard and Blair Parrott, they did a lot of work on the recent Gulf of Mexico ferreting out sedimentary geometries of sand bodies and things like that.

TP: As a way of trying to understand it historically?

EP: Yes. Just from the very latest events. And they used paleontology as well because they did salt borings through these sand bodies into the underlying clays and shales. And Blair Parrot who succeeded Lampton, who was ahead of me, that is the way he

started his paleo in Shell. But there was not too much interaction at all between Shell Development and us in operating divisions. In fact, the new man, J. Frank West, told me when I first went to BRC in 1959. He said, "Now, we are going to tell you all this kind of stuff. You can listen to and believe what you want to believe. You cannot believe everything those guys will be telling you over there." He said, "Keep your ears up," like that, but he was kind of a squirrely kind of guy.

TP: Yes, I know there was some tension between research and operations in the 1950s in particular, because there was the feeling that research was not really contributing to the business needs of the company. I talked to Bob Nanz quite a bit about some of the reforms that they made in the late 1950s. He was another key figure . . .

EP: Oh, absolutely. A fabulous person. Just a great guy. One of these visionary kind of people that you need. Bookout was a visionary kind of person. Going back to my experience in New Orleans: Billy Flowers and Forrest were visionary kind of people. They could see well beyond the immediate, and that is what you are looking for to keep a company going. But I kept my head down on that microscope!

TP: How about McAdams? Did you ever have . . .

EP: I never really knew McAdams. I was around in his company only about three or four times, but I never really knew the man. I never knew the man at all.

TP: How about Tom Hart?

EP: Oh, yes. I knew Tom quite well. A real maverick kind of person. He was from Lake Charles. He went to Lake Charles. Of course, he was part of the old Tulsa crowd, as I called them, or they called them. He did real well over here in the New Orleans area because he worked here in the same building, down on the 7th floor. He was the exploration manager for all of the interior salt basin. He was succeeded by Dick Grolla. Dick Grolla was in Houston. I do not know if you have ever . . .

TP: I have come across that name, but I have not talked to him.

EP: Tom was quite a guy. After he came back, he left and went to head office and came back to One Shell Square . . . I remember he used to call me up every once in a while to go reminisce about old times. I'd sit there and have lunch and his two double martinis, you know. He was fine. An unbelievable guy!

TP: As I said to the meeting last year, I have heard a lot of Tom Hart stories.

EP: I remember one time, I was heading down to go to a party. I worked late. It was on a Friday. It was during Mardi Gras. A Shell engineer had an apartment above the A&P Grocery at the corner of Runnel and Orleans Avenue. At that time, the

parades used to go down Runnel Street and turn there to go to the auditorium. And he invited me to a party during that parade, to watch the parade from the apartment. I was walking down Bourbon Street and who called up to me but Tom Hart. He said, "Ed, where the hell are you going?" "I'm going to this party." He said, "Hell, I am going with you." I said, "Fine, Tom. I am sure there will be no problem." So, he went to the party. He proceeded to have one hell of a fine time. He was pontificating on this and that. Of course, he was three sheets to the wind by the time he left, by the time we all left, but we always reminisced about that party down on Runnel Street. A crazy guy!

TP: But incredibly intelligent from what I have heard.

EP: Oh, yes. Extremely intelligent. He was a visionary kind of guy, too.

TP: Another guy who gets lost in the shuffle, and I was talking to Jim about this, is Ronnie Knecht.

EP: Well, Ronnie was perhaps too persuasive. He was too much of a, to use a modern day term, "in your face" kind of guy. And in spite of his success . . . without Ronnie, honestly, I do not believe Shell would have ever been as successful as we were, because he was the playmaker for that Sale 10 in 1962. Without Ronnie, I do not think we would have been there. But after his exile, he went out to Midland and

was general manager out there and floundered around. He never really found himself again. I think, whether McAdams said, 'you have done your thing,' and just put him on a shelf or not, I do not know what happened to Ronnie.

TP: I heard he was all business, headstrong . . .

EP: Oh, those beady bright blue eyes and that intense fever. He could have been another Billy Graham. I mean, he was such a missionary. He had that zeal. He would just overwhelm you. He really did. I can truthfully say . . .

TP: What was his background? Where was he from, do you know?

EP: Ronnie grew up here in New Orleans. He was a graduate from Jesuit High. Track team. Went to LSU on a track scholarship. Was on the track team of LSU and lettered in track. He went to work for Shell . . . I may not be exactly right but I think I am, in 1949, the same year I graduated from high school and went to LSU. He went to work for Shell in that Baton Rouge office. And he was there when I got there probably around 1957.

TP: So, was LSU overrepresented in the New Orleans area?

EP: Oh, yes, sir.

TP: It seems to be a pipeline from LSU. I mean, not just to Shell but to a lot of companies.

EP: In fact, I am writing a memorial for Dr. Grover Murray, to whose memorial service I went to on June 22. He died on May 22 and they had a memorial for him on June 22 in Lubbock. He was at LSU eighteen years. I went to LSU in 1966 to go to Lubbock. But Grovery Murray and James P. Morgan, H.B. Anderson, Clarence O'Durham and a couple of other people, they had a fabulous faculty there. Fabulous!

TP: That is what I have heard.

EP: Because Grover went out, had worked a few years before he came back to teaching, he knew how to get companies involved in academia. And LSU, next to UT Austin and OU in Norman was the powerhouse and stayed the powerhouse for oil company geologists. If you got your degree, whether it was a BS or a master's at LSU, there was no doubt you were going to get a job. Hands down. You got a job. Just fabulous.

TP: It seemed like all guys had two allegiances: one to the company and one to their alma mater. Texas A&M, for example. They had a different specialization, but

there are still a lot of Texas A&M guys represented in the industry.

EP: Still today. I knew every faculty member up at LSU. I am on the advisory council for the dean of the College of Basic Sciences of which geology and geophysics is a group. I was on the search committee representing the alumni to find a chair for the geology . . . it is in my blood! It's LSU.

TP: Did oil firms find a lot of research at places like LSU?

EP: They had in the past, profusely so, but nowadays, not so much. We are trying to turn that around. There is a mindset for dealing with LSU, but other schools now, too . . . . there were a list of funds that came from the National Science Foundation. They are tainted. If they come from an oil company, well, that is not research money. You are just doing a job for that oil company.

TP: Just like consulting work or something.

EP: Consulting work. We are trying to turn that around. Whether we will be successful or not, I do not know.

TP: Grover Murray was sort of the key liaison between LSU and . . .

EP: And industry. Right. Just a fabulous person.

TP: It seems, as I am working on this history, I want to follow all the connections and follow it to its roots. The universities play a key role in producing the people with the expertise to be able to move into . . .

EP: Oh, yes. I just read in the most recent AAPG bulletin where they announce distinguished lecturers, one will be traveling the circuit who is an Australian. The central thrust of his abstract is that we need to, again, reinforce that tie between industry and academic geology departments as we had in the past. I thoroughly endorse that. I want to send that abstract to my alma mater because it is important. It is important.

TP: I was walking around this morning . . . I am curious about the old Roosevelt Hotel. I had never been to the Fairmont and walked in there. I have heard a lot of stories about the petroleum club and about Bouwe Dykstra playing his games of gin rummy. I am trying to get the culture of the New Orleans life in the oil industry.

EP: That building on the corner there, the building on the corner of Barone and Common is the old Shell building. The Petroleum Club was on the third floor.

TP: Of the Shell building?

EP: Of the Shell building. That is where Dykstra and Oudt played all the gin rummy. Our offices where Lampton, me, Jerry O'Brien, Knecht and all these people, were on the fourth floor in our own division. And we had a door on the third level in the Petroleum Club where we could go into the Fairmont, when you would go into the Fairmont. It was pretty neat because back in those days everybody went to the Petroleum Club. It was a hub of activity.

TP: I wanted to get the flavor of that.

EP: You were privileged to see all these people come and go out of the Petroleum Club.

TP: The Gulf guy I talked to yesterday, his name is Marty Miller. He was in production. He said the exploration guy for Gulf, Roy Payne, played a lot of gin rummy at the Petroleum Club. So he probably played . . .

EP: I do not know who would be left here in New Orleans who frequented that Petroleum Club except some older people.

TP: So, where were Dykstra and Oudt's office in the Shell building?

EP: They were up on the top floor. I think it was 14 or 16.

TP: And the Marine Division was on the fourth?

EP: Yes. We were a small group financially. We did not really expand until they moved us out to Veteran's Highway at that office space. I wish I could tell you who to interview for . . . surely I will have to put my mind to it.

TP: The Fairmont had a little historical brochure. It is the center of Louisiana politics. Huey Long had a suite there and his campaign headquarters.

EP: Right. And in New Orleans, the Geological Society, had their luncheon there yesterday in the Blue Room, all the way in the Blue Room. So, there is a lot of history tied up in that one block! Really.

I can remember going to lunch there in the bar at the old Petroleum Club occasionally and knew people and could sit there at the bar and have lunch. There would be people over there playing cards and talking, making deals and whatnot. It was an unusual place. Unusual. A great spot. It is gone forever now. It is just too bad.

TP: When did Shell move out? When the built the Shell building?

EP: Yes, the big Shell . . . In fact, the man who bought the property and had that Shell building built was . . . I cannot recall his first name. His name was Kennedy. A really nice man. He worked out of the old Richards building. Before we had this building, the old Shell building, we had our regional office in the old Richards building.

TP: Where was that?

EP: That was on Barone Street, in the second block of Barone on the river side. In fact, the first marine group people worked in the Richards building until the Shell building was built.

TP: When did they build the Shell building next to the Fairmont, the Roosevelt? When did they move in there, do you know?

EP: It had to be in the early 1950s. Boy, I am hazy on that.

TP: No, but you have a lot of sense of the area.

EP: I do not know. I will have to dig out some stuff. I do want to show you the paleo strip log before you leave.

TP: Well, do you have anything else? This has been very helpful.

EP: Not really.

TP: I can shut off the tape now. I want to thank you for your time.

THE END