MMS OFFSHORE GULF OF MEXICO

ORAL HISTORY PROJECT

Interviewee: John Estes

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Interviewer: Jason Theriot

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Bio

Bio: John Estes worked for Bethlehem from 1949-1982. He is a former manager and engineer at Bethlehem Shipyard in Beaumont, former President of Bethlehem Singapore, and former assistant VP of Bethlehem Steel in Pennsylvania. He was born in Alabama and received a degree from the University of Texas in 1943. He worked in shipyards in New Orleans and Port Arthur before joining Bethlehem Shipyard in Beaumont in 1949 at the beginning of the offshore industry. John helped design and build Bethlehem's fleet of jack-ups during the early offshore industry. He is retired and lives in Kingwood, Texas.

Early Career: He was a design engineer and assistant chief of design during the development of the industry's first jack-up rigs, “Mr. Gus” and “Mr. Gus II”. In 1960 he became chief engineer of the Beaumont yard then general manager. In 1973 he accepted the appointment as president and general manager of Bethlehem Singapore, where he worked for 4 years. He returned in 1977 to run the Beaumont yard before being transferred to Pennsylvania as assistant VP of Bethlehem Steel.

Company's history/significance: Bethlehem Steel had a long history in the US. Shortly after WWII, Bethlehem opened a shipyard in Beaumont, TX to build vessels for the emerging offshore industry. In 1954, Bethlehem's engineers, including Estes, designed and built the industry's first "deepwater" jack-up rig, “Mr. Gus.” Bethlehem was also one of the first American shipyards to open a yard overseas. From 1973-1977 Estes served as president of Bethlehem Singapore building rigs for Asia's offshore industry.

Work force/other issues: He mentioned that the shipyard was segregated in the early years. Many of the skill workers--mostly whites--were overflows from the war years. Many of the local hands had fathers who built wooden ships before the war. Also, many of the locals living several miles away on farms and took days off of work to work their cattle.

Tape 1, Side 1 – Part 1

JT: This is an oral history interview with John Estes, E-s-t-e-s, in Kingwood, Texas, on March 6th, 2008. The interviewer is Jason Theriot. This is for the MMS Ship-Fab Project. John Estes worked thirty-five years for Bethlehem Shipyards in Beaumont, Texas. This is an oral history, tape one.

JE: —born in Birmingham, Alabama, and when I was about nine we moved down to the Mississippi coast and lived there until 1943, when I went to University of Texas, and finished there in the Navy V-12 Program. Then I went to work in New Orleans at a small shipyard, and migrated to Port Arthur to another small shipyard, and then after that when I moved up to Beaumont to the Bethlehem yard, Bethlehem had bought the yard in 1947, and I went there in 1949.

JT: What was your training at the university? Was it engineering?

JE: Mechanical engineering.

JT: Now, what was the shipyard in New Orleans, do you recall?

JE: Calmes, C-a-l-m-e-s. It was a small yard, did tugboats and barges.

JT: And you were working on engineering with designing?

JE: Yes.

JT: Were they building those tugs with steel at the time?

JE: Yes.

JT: Boy, wartime in New Orleans, especially in a shipyard area.

JE: Well, this was after wartime.

JT: Where was the shipyard, in Port Arthur?

JE: Port Arthur, Gulfport.

JT: Okay. What's the gentleman's name, the owner?

JE: [Bruno] Shultz, a man named Shultz owned it, Bruno Shultz.

JT: O. W. Burton was another big name?

JE: Burton worked for Shultz. I think he was kin to him, a brother-in-law or some kin, and Burton had another yard, split with Shultz and operated a yard.

JT: You're talking about the pioneers of the shipbuilding industry right there, those two are big names. So when did you go work for Gulfport, what year was that, do you remember?

JE: Well, I got out of college in '46. That would have been late '47.

JT: Describe to me if you will the atmosphere of the postwar years in '46, '47, working in a large shipyard community like Port Arthur-Beaumont. I mean, that was a huge fabricating center for shipyards for military ships during the war. Describe to me living in that environment.

JE: Well, they had had to adapt to more commercial work, which, of course, they had put aside during the war, and so after the war was over and there was no more government ships to build they had to get back into industry. But there was a demand for barges and tugs, because there had not been too many those built during the war for commercial use, and then the oilfield was growing, so there

was becoming more demand for servicing the coastal area, not talking about offshore necessarily, but the bays and bayous, drill barges.

We built quite a number of drill barges, "bay barges" they call them. They just went into shallow water and set out on a shell bed, and generally shell, sometimes, no shell, because that was still growing. They were developing the oilfield along the Louisiana coast, inland.

JT: Essentially a conversion from military naval ships to commercial oil field ships, I mean, basically within a year or two, right? I mean the offshore industry as we know it really begins in '46 and '47.

JE: Then in '54 we'd been doing some research work as to what an offshore rig ought to look like. What could somebody go out and drill in a hundred feet of water, because there were no precedents set for this. Bethlehem engineers had worked with Shell and Atlantic Richfield and several others on research projects, kind of just brainstormed and came up with all sorts of crazy ideas, many of which went into the wastebasket. That was before we shredded everything, so they just went to the wastebasket. Then in '54 we got a contract to build *Mr. Gus,* and that was the first deepwater rig. It was actually drilled in about ninety-five—it was designed for a hundred feet of water, and actually drilled in about ninety-five.

It worked for a year, and then was a casualty of, well, the operator didn't follow the procedures right. He was moving it off location, and then a storm

came along, and then a McDermott dirt barge came to assist, and did more damage than help. It anchored on the stormy side, and then its anchor chain broke, and it ran into the rig, and that, of course, helped push the rig, which was already leaning, pushed it on over, so it was a casualty.

JT: Was it recovered?

JE: Pieces, but not as a rig. Then there was a slowdown while we built *Mr. Gus II*. We were designing it based on the things we learned not to do on *Mr. Gus*, and built *Mr. Gus II* in 1957, and as far as I know it's still sitting out there in the Gulf now as a production platform, worked for many years successfully, and from it then there was a slowdown in the business because of the argument about who owned what out there, the tidelands, yes.

Fortunately, Price Daniels, our attorney general, won that case in the Supreme Court, that Texas got out to three leagues, which is ten miles or something, some odd number, and then business began to pick up. Then we started with a man who had been involved with *Mr. Gus* and *Mr. Gus II*, James Storm, James C. Storm, Jimmy Storm, and we built *Storm Drill I* for him.

It was quite different from *Mr. Gus*. We had looked at *Mr. Gus*. It was quite an expensive design, and we needed to make it more economical, so we went to three legs instead of four, still with a mat. Bethlehem specialized in mat design, which was just a barge hull-type thing which sat on the bottom, rather

than the independent legs that penetrate through the soil and up to a hundred feet of depth.

JT: It was a jack-up also?

JE: Yes. And altogether then from *Storm Drill I*, with half a dozen other companies, or ten other companies we built almost over ninety, almost a hundred. Now, all of those were not built in Beaumont, because in 1970 we started the yard in Singapore. But Beaumont did the design work and built some of the components, built the jacking, some of the jacking. We ordered all of that out of Beaumont, the jacking systems, and sent them to Singapore.

JT: But did the design work in the Gulf of Mexico?

JE: Well, it worked anywhere. But the primary reason for opening the Singapore yard was because there was a demand for rigs in Singapore. In fact, one of the rigs we had built in Beaumont went to Singapore. It was for Reading & Bates, and they needed to drill off Indonesia, so they took the rig over and then talking to them and other companies who were drilling over there, they said, "Well, you need to build rigs over here." So we got some land and built a shipyard.

In '73 I went over there as president and general manager. It was owned 70 percent by Bethlehem, and the other 30 percent was owned by the Singapore

government, actually their development bank, Development Bank of Singapore, which is a government entity, basically, and they were our partners. But Bethlehem managed the project.

JT: And the workers were all indigenous?

JE: Yes. Yes, at the most we had nine Americans, nine expatriates over there, and we did at one time hire a bunch of Indian welders from India, because Singapore couldn't provide enough of a labor pool. So there were labor contractors in India who would send a man over to India to test the welders, you know, get them all certified, and then he'd bring 200 welders over to Singapore, and he took care of housing and feeding and transportation and all that sort of thing, just under his contract.

JT: Sounds like it made for an interesting mix. You've got American executives and managers, 200 Indian welders, and *x* number of probably Singapore laborers. I mean, the headaches that you guys must have had...

JE: The majority were Chinese, but a lot of them were Malaysians, and, of course, they all took different holidays. But you could always find somebody who didn't have that holiday if you needed somebody to work while, say, all the Chinese—Chinese New Year you just almost shut down the yard.

JT: Were they unionized?

JE: The yard was not at that time, and oh, while I was there the local union kept agitating and wanting a vote and whatnot, and so we said, "Okay, fine. We'll let them vote," and they voted. But the union situation there was quite different from here. The first thing here if you have a strike, you negotiate a contract before anybody goes back to work. Well, they voted to have the union, and then we said, "Well, okay now, when can we get together and negotiate a contract?"

"Oh, we'll be in touch." It took a year to get a contract, and meantime everybody worked and were happy.

JT: What about the language barrier? That must have been interesting.

JE: Well, the British had spread English around a lot. Now, you had to be careful with it, because sometimes you would tell a postman, a local something, give him some instructions, and he would nod his head like he understood, and go off and do something else. But some of their—they got a lot of their supervision, the local supervision who had been in their navy yards, the British naval base. See, the Brits, that was a big naval base, and a lot of the local supervision spoke English pretty well. But you sometimes wanted to check, "Now, tell me back what I told you," because they didn't want to admit they didn't understand.

JT: Generally, were they good workers?

JE: Yes, they were very good workers. As a matter of fact, what we had been told was that it would take twice as many man hours—shipyards deal in man hours, and we had been told it would take twice as many man hours to do something there than it would in Beaumont. The first rig that we built, it took just slightly more than it took in Beaumont, but it wasn't long before we were up to the Beaumont production.

JT: So you were there from '73 to '77?

JE: [19]77 I came back to Beaumont as general manager of that yard, and then in '78 I was transferred. I went to the home office as assistant vice president, in Bethlehem, Pennsylvania.

JT: So how long were you there for?

JE: Till I retired in '82.

JT: That's interesting. You got to see kind of the industry downturn.

JE: That was one of my reasons for leaving when I did. I'd been thirty-four years with Bethlehem, and I'd lived through two booms. It got to the point during those booms where drilling contractors would call you up and ask you, "When can you deliver a rig?"

And you'd tell them, "Well, April next year."

"Okay. Put me down for a rig, April next year. Oh, by the way, what's it going to cost?"

JT: Oh, by the way.

JE: Yes.

JT: Not too concerned about the—

JE: That's right. It's, "Can I get a rig on that date, because I can get a contract. Some oil company is looking ahead and wants to book up a rig on that date." That's the way it was during the booms.

Then at other times, when things were way down I had one of the guys in Bethlehem treasury department come to me, and he said, "You haven't had any new rig orders in four or five months."

I said, "No, we haven't."

He says, "Why don't you do this? You've been making a lot of money on those rigs. Have you thought about cutting your price so that you could sell rigs again?"

I said, "Well, if you look at the pictures, the photographs in the newspaper of the drilling rigs that are stacked down at Sabine Pass, and understand that you could buy any of those for half of what a new rig cost, or less, we can't cut our prices." I said, "As a matter of fact, you almost can't give a rig away, because if you give somebody a rig, what's he's going to do with it? He's going to take it to Sabine Pass and it's going to cost him a couple of million dollars a year just for insurance and maintenance, even if it's dead shipped with no crew hardly on it. So, you know, nobody wants a rig."

JT: I think the count was upwards of 4400 rigs down to 1500 rigs in a matter of two years' span in the early eighties. The rig count went down so fast.

JE: But see, this was a guy in our treasury department who had this brilliant idea, cut your price and sell more.

JT: Well, we talked about the workers in Singapore. Let's back up a little bit and talk about the same type of workers in southeast Texas in the late forties when you came to town and began to work at Bethlehem. Tell me about, you were a migrant worker yourself, coming from Alabama into Texas. Tell me who were

some of the workers in the yard in Bethlehem after the war. What type of backgrounds did they have, ethnic-wise?

JE: Well, went Caucasians and blacks, no Chicanos to speak of. The blacks were mostly in the labor gang, drilling, sandblasting, and jobs like that, no pipe fitters, no electricians. It was sort of, I guess you'd say it was segregated. They were laborers mostly, and did some work on the cranes, not any crane operators, but hookers and whatnot. They were not a large workforce.

JT: Where were the blacks from? Were they from southeast Texas?

JE: Yes.

JT: Had they migrated?

JE: No.

JT: And the whites, basically your skilled hands, your welders and your fitters, were they natives?

JE: Yes.

JT: But like yourself, they had probably migrated from Alabama, Mississippi, Louisiana, other parts of Texas.

JE: Well, a lot them were just native Texans and lived around that part of the world, and grew up and went to work in the shipyards. See, that had been a shipyard for many years before Bethlehem bought it. They built wooden ships during World War I in that yard.

JT: And that was the Pennsylvania shipyard?

JE: Yes. Then they built a lot of drill barges, the bay barges.

JT: In the late thirties and during the war?

JE: Yes. They had built—up until World War II they had built all the bay barges that had been built. They're the only people building them.

JT: Gulfport was a big barge builder, weren't they?

JE: Gulfport built oil barges mostly. They didn't get into drill barges.

JT: So the hands that worked at Bethlehem in the late forties were either—I'm talking the steel workers—they were either leftover migrants from the war, or possibly even before the war, and these were men who had probably worked on the wooden ships in the thirties, right?

JE: They might have worked on the wooden ships, or on the drill barges during the thirties and early forties.

JT: And so your supervisors and your leader men probably had quite a bit of experience even before the war.

JE: Yes.

JT: Pennsylvania Ironworks, they were what type of—tell me a little about the background if you know anything of it. It's my understanding they had been in the area for quite a while, had even built railcars before World War—

JE: Pennsylvania Ironworks? There's a book—

[Tape recorder turned off.]

JT: Bethlehem before it got involved in shipbuilding, just as a huge steel manufacturing in the U.S. Tell me a little bit about, if you can even comment about the decision of going to shipbuilding.

JE: You know, there's a lot on the Internet. I went in last night, and if you just click on Bethlehem Steel, and then it gets you into shipbuilding, and I don't remember the year, but they bought a yard in Quincy, Massachusetts, the Fore-River Yard, F-o-r-e, Fore-River Yard, long before World War II, in the early years, early hundreds. As I recall from reading, they built five naval vessels for the Chinese navy.

But that yard operated many years. It built the first nuclear-surface vessels, the *Bainbridge* and the *Long Beach*, and after that experience the man who was vice president at that time decided, we will never again build a naval vessel, because the navy—this was, what was the admiral's name who was the nuclear guru? He was a tough nut. Mine, too. But he was a tough nut to deal with. He would call up on Friday and say, "I'm going to be up at three o'clock tomorrow afternoon, and I want to meet with a manager and the project people on Saturday afternoon at three o'clock, and they'd better be there."

JT: He's a significant historical figure [Hyman Rickover], and if you look at the early stages of nuclear power, he is a big advocate of having submarines and nuclear

vessels, and then that kind of jumps into a nuclear power industry that you'll be building up in the sixties and seventies.

JE: Yes. And a lot of people in the navy couldn't stand him, but Congress just, he was untouchable. But he reported the general manager at that shipyard, he thought to the vice president, and said, "At eight o'clock some mornings he's not in his office." Well, it's a general manager's prerogative not to be there at eight o'clock. But anyhow, they built those two ships, and then later they were big in commercial tankers. They built the *Manhattan*, which was the tanker that later on added an ice-breaking bow and made the Northwest Passage, northern passage around Canada, so they were big in big tankers, supertankers.

But that market kind of got away from them, and they sold that yard to General Dynamics, who operated it for a number of years. I think it's closed now, I'm not sure.

JT: So what you're saying is somewhat there's a logical step for a major steel manufacturer to go into steel shipbuilding.

JE: Right, because—

JT: Particularly with the need of it during wartime.

JE: Well, yes, during the war Bethlehem built, according to what I read last night, 1,127 ships during the war in their various yards. Now, they didn't have Beaumont then, but they had Sparrows Point, Maryland, which was a big yard, and the Quincy yard, and a couple of yards on the West Coast.

JT: I want to just ask a quick couple of questions about the first jack-up drill barge, the *Mr. Gus*. I know you were involved in that. What year, if you can recall, did you guys begin discussing this type of technology, maybe in the drafting room or the engineering room; when did kind of this brainstorming that you talk about, when did this occur?

JE: Basically, they were thinking towards those lines when I went to work there in '49, and that's one of the reasons that Bethlehem bought that yard, was they anticipated some business in the Gulf, because the yard had been for many years building drill barges successfully, and Bethlehem also was in the drilling-machinery business at that time. They built drill works, rotary tables, crown blocks, everything for a drilling rig in their big plant in Corsicana, Corsicana, Texas, up where the fruitcakes come from, the great fruitcakes.

JT: Okay. I'm not from here, I'm from south Louisiana.

JE: Okay. Well, Corsicana is up between here and Dallas, closer to Dallas than it is here, and Bethlehem, that was their headquarters for what they called Bethlehem Supply Division. They had supply stores all over south Louisiana and Texas, where you could go in and buy a drill bit or a drilling rig, and they manufactured the complete rig except for the derrick itself, but they sold the steel to the guys that built the derricks.

JT: So these guys, the managers and higher ups, they see something like *Mr. Charlie* built in 1947, south of Morgan City, they see this industry moving from the bays out into the hundred-foot depth.

JE: They didn't know what, and we didn't either when we would go, "What can we design that can go offshore and drill a well?" There were no rules, there were no regulations, there was no historical background, so it all came from people—

JT: It was all created.

JE: Right. And the regulator—you're familiar with America Bureau of Shipping? Okay. When we started building *Mr. Gus*, we sent them some plans and asked them to review them so we could get it inspected and classed. After a while they mailed them back to us and said, "This won't fit anything, any rules or regulations that we have, so we decline to do this."

Well, a few years later I think they began to realize, hey, this is a business here. So in 1967 they organized a committee to come up with some rules, which were published in '68 in a book about that thick. There were engineers involved, Tim Pease, you know the name, I'm sure, and there were various engineers from different companies, except the LeTourneau. LeTourneau said, "Don't want to have anything to do with you." But he was at his yard at Vicksburg. And there were oil-company people, drilling contractors and oil-company people, besides engineers from builders, and we came up with some working rules, which was a book that big, but now it's about that thick.

And the Coast Guard had the same attitude, because they said, "Well, we don't know where this fits? You know, is it a vessel, or is it a what, or is it a barge?" And so we were just having to make up our rules as we went along, until there were some, the ABS rules, and we didn't change anything there, because a lot of the stuff we were doing got into those rules.

JT: Well, if you started in '49, and you stayed through to, again there are some ideas floating around on where this industry is going, and what Bethlehem can do in particular on how to keep pace with that—*Mr. Gus* comes out when, '52, '53?

JE: [19]54.

JT: Okay. You're talking about five years, and a lot of brainstorming, and a lot of sketching and going through the various choices. What did the jack-up, and where did the idea for the jack-up concept come from? *Mr. Gus* is a jack-up, correct?

JE: Yes. Well, if you looked at *Mr. Charlie* and some of the early ODECO rigs, which were bottle rigs—do you know what a bottle rig is? There's a limit to how big this is going to be if you're going to drill in 200 feet of water. And the jack-up is more versatile then, because it has a range of drilling depths. You can drill in fifty feet of water, and your working platform is at a convenient height above the water level, for just bringing people onboard, and supplies onboard and all that, and also for your, where you set your little platform to put your well on eventually, that in fifty feet of water you don't want a rig sitting up 200 feet above water while you work. So that's the main reason for the jack-up, just versatility in depth.

JT: Is there anything that you guys could look back on, maybe in the wartime, maybe in someone else's experience, maybe in a photograph that somebody saw in a magazine, like a *Popular Science* or something, but for somebody to come up with the idea that, "Hey, let's use a vertical up-and-down jack-up concept"? Or is this just something that just came out of the blue?

JE: I don't really know where the concept came from, and nobody else did either, except the man named [Col. Leon B.] Delong—you've probably heard that name—who had a patent on some—he worked for the army, and designed wharves, jack-up wharves, and I think some of it came from that.

JT: Is Delong D-e-l-o-n-g?

JE: Yes.

JT: Maybe this is a wartime invention?

JE: Yes. I don't know how extensively it was applied. Delong had some patents which everybody had to look at and avoid. In fact, there was a book this thick, and I don't know whatever happened to it. It was a big book that had many patents about various-type vessels that can be used in explorations of any kind, diamonds, whatever, and a lot of old patents, none of which applied. There was not a duplicate jack-up in any of those. We did a lot of work. Our patent attorneys had to research everything we did.

JT: But Delong's jack-up wharf may have entered into the discussions, to help stimulate some of the creative-engineering ideas?

JE: Yes, and I think there were some rigs, maybe one rig built with his—he had an inflatable jack, a rubber diaphragm. It had a ring around the column, a round column, and it had a ring around it, and there was a rubber diaphragm inside of that. You pressured that up and it clamped onto the platform, see, just by the friction of the air pressure, which, of course, has limits on how much of a load it can carry.

JT: Any idea what his first name was?

JE: No.

JT: That's very interesting. That's very helpful stuff. So it was that technology. I know you were in the engineering department. Were you chief engineer at the time?

JE: Not at that time, no. A man named Jim Steel was chief designer.

JT: They must have thought you guys were crazy building that jack-up in Beaumont in the early 1960s.

JE: Well, *Mr. Gus* was originally built in two pieces. It was two platforms, and we had some problems on our first location, and took it back into the shipyard and rearranged it, and welded those two together to make one long platform out of it.

JT: And all of this was in Beaumont?

JE: Yes.

JT: Did Bethlehem also have a facility in Port Arthur?

JE: No, no.

JT: But didn't they have a large dock on Pelican [Pleasure] Island at one point?

JE: Pelican Island down by Galveston? Well, later on. After the rig-building business was gone, they got a navy dry dock that they moved to Pleasure Island in Port Arthur, but that was strictly for repair and remodeling of rigs. They were out of the building business at that point.

JT: The Golden Triangle, Beaumont, Orange, and Port Arthur, they certainly have been well known for their shipbuilding, their ship craftsmanship, pioneers in welding, pioneers in all types of offshore shipbuilding industry. Talk a little bit

about the competition between the various companies and the various areas in the Golden Triangle, generally speaking.

JE: Well, the competition basically was in the type of rig we were building, because we were building that type rig in Levingston, which was, I'd say, the most competition right there. LeTourneau was the main competitor, and LeTourneau built only independent-leg rigs. Some companies stayed with those, and other companies said "well, mat-type rigs work fine, don't give us any trouble." They're reliable and they bought them from us. I mean, obviously when you sell almost a hundred of them within a world, they've proved something.

We licensed, there's a yard in South Africa, we licensed them to build one. We licensed a Chinese yard to build one, and then we built a bunch in Singapore, one of which we sold to the Chinese government. But Levingston had a design. It was a nice, good rig, and they were a qualified company for independent legs, but they never tried—I believe they did build one small mat-type rig.

Now, over in Louisiana there's some small yards that built mat-type rigs for well servicing, but that's all they were for was well servicing, which is just a small role. That's for just going out to start pulling the tubing out of the well, and changing that out. And as far as I know, none of those were able top design for hurricane weather.

JT: Talk a little bit about that. How much of a factor did the storms and the hurricanes in the Gulf of Mexico play into the designs of the early jack-up rigs?

JE: Well, they played a lot into it, because there was not much history on wave heights in the Gulf of Mexico, and not much about the soil characteristics. Now, two different organizations got into that pretty quick and heavy, and did a lot of work. In the soils, you had to know what kind of bottom it was, particularly with an independent leg. Some of those might go a hundred feet in the bottom. Well, then that's a hundred feet that you can't have on top, if it's down in the mud.

So we had to take that into consideration on our loading on a mat rig, as to much is soil compressed.

JT: Are you talking about maybe a geological survey?

JE: Yes. Well, actually having soil, somebody going out with a machine that goes down and takes cores out of the bottom and checks them.

JT: What about hurricane preparedness or prevention? By '53 we haven't had a major hurricane in over a hundred years in the Gulf, no, fifty years in the Gulf I should say. Who were the experts that were coming to y'all and helping you with those kinds of specific designs?

JE: A man named Reid, R-e-i-d, Jack Snyder and Reid, and well, they worked at various places, A&M, and at one time Reid was at the University of Hawaii, and they did a lot of work on—you see, you had two considerations. One is, what's the probability of a wave of a certain height? The second is, well, what's the force of it? And they did a lot of consulting on that.

And it's been collected all around Shell and all the different major oil companies that had their own people consolidating data, and kind of putting it all in forms where everybody knows that in the Gulf of Mexico you should be sixty-feet above still-water depth, except in [Hurricane] Katrina, maybe it needed to be sixty-five feet, I don't know. But that was the first consideration. And in non-hurricane season you only go twenty-five feet above water depth.

JT: Well, in 1956 I believe, the industry had a run in with Hurricane Audrey. How did the jack-up design fare in that big monster hurricane that came through the Louisiana Gulf Coast?

JE: Audrey, it hit Cameron, drowned 300 people. That was not—you can't say it wasn't a major hurricane. Well, it was a major screw up. That was not a 200-year storm or anything like that. Offshore it was not as bad as it was in-shore. The problem with Audrey was that they had told the people over at Cameron, "There's a hurricane out there, and you ought to be ready to leave tomorrow,

because it's going to start coming in." Well, it came in during the night, when nobody expected it. It started—it had been moving slowly, and then—

Tape 1, Side 2

JE: —before daylight, and it was just a matter of warning. The people didn't have a warning. But as far as being catastrophic to offshore, it wasn't.

JT: So then the jack-up technology worked.

JE: Yes, yes. Yes, I don't think there was any rig damage offshore then, because it was all just fatalities there on the beach in Cameron.

JT: Tell me a little bit more about living in Beaumont during this period, and what I'm interested in is kind of the community of Beaumont as it centered around the industry, the refineries, the shipbuilding. Tell me what it was like, and maybe compare it to where you grew up in Alabama, and where you are now in Kingwood.

JE: Well, I grew up in Alabama, in Birmingham, which was an industrial town, steel mills. Of course, some of that was during the depression, and you don't need to get into that. That's a long time ago. But the City of Beaumont, of course, was

mostly driven by the refineries and chemical industry, and most of my neighbors and most of my friends, they worked there or worked at the bank, or lawyers or dentists or something like that. But there's a big engineering population in the refineries and chemical plants.

Sun Oil headquarters were in Beaumont at that time, and then Sun, they worked thirty-seven-and-a-half hours a week in their office, and you could always, if you needed somebody to do something, committee-type work for your church or club or whatever, call a guy at Sun Oil. They've got time to do it. And anybody went to work for Sun Oil, they were going to be there from now on. They had more stability than anybody.

Then all of a sudden Sun sells to Sunray DX. They merge with Sunray DX, and they start moving Sun Oil people out of Beaumont, and there were a lot of houses for sale. But Sun did a wise thing. Sun would take them over. They'd keep the yard up. The houses looked like they were being lived in, and they'd only put them on the market as the market would absorb them. But there went all our good committee workers, you know, with all those people being moved out of town, some of them to Dallas, some to Houston. I know two or three that were moved, and in a year they were back, came back and got another job somewhere, because they didn't like wherever they were transferred to.

JT: Well, speak about the workers, not necessarily the engineers and the college graduates like yourself, but maybe the skilled and the semi-skilled workers. Did they live in Beaumont, or were they migrants, or did they travel?

JE: Most of the time, well, a lot of them lived twenty miles up in the country, had a little spread of land. I know one guy, a machinist, had a good bit of land, raised cattle. Some of those fellows would care—we had a policy of penalizing people who didn't show up for work when they were supposed to, and after so many occurrences of not reporting they'd give them two days off without pay. So, you know, this is what the guy wants in the first place, so that's not punishment.

Those that worked on ship repair—see, we did both new construction and ship repair at Beaumont, and ship repair generally, people working on that put in a lot of overtime, and sometimes we'd have to take people off of a new construction job and put them on ship repair, because we needed more workers on a ship that the guys wants to get it out and back to work. So after a guy is working three or four days, eighteen hours a day, he wants a couple of days off, and decides it's time for him to plow or do something at his farm.

JT: Make a little income on the side, probably.

JE: Yes.

JT: Did your workers have benefits like what we would know today, maybe?

JE: Yes. Yes.

JT: Insurance, health, those kind of things.

JE: Yes, yes.

JT: Was Bethlehem unionized in Beaumont?

JE: It was unionized, and we never could know exactly, but we think only about a third of our people actually belonged to the union. But we did have a union contract, and sometimes they would strike for a day or two, or three days. There never were any prolonged strikes.

JT: What about training? If you had, let's say, newcomers coming in, or maybe someone's son who was interested in getting involved in welding or pipefitting; tell us a little bit about the training programs that Bethlehem had.

JE: Depending on the demand at any particular time. We did not run continuous training schools. We would train people as we needed. If we were short of welders, we would try to get a bunch of trainees for a class of welders.

JT: How long were these classes, two weeks maybe?

JE: I don't know.

JT: So essentially you didn't have a program in place to bring in new guys and train them constantly.

JE: Right, in any of the crafts.

JT: Did that ever change during your tenure there at Bethlehem, or was that—

JE: No, no. That's pretty much constant or usual for shipyards, because of the cyclical nature of the business. Now, a yard that has a big backlog has got to run training classes constantly.

JT: Okay. Talk a little bit if you will about what we refer to as kind of the civic responsibility of a major company in a community. How involved was Bethlehem in the community in relation to the sponsored events, or maybe charity events, or donating funds, or various philanthropical types of things? Can you comment on that? Do you remember?

JE: Well, we were very diligent about collecting contributions for United Appeals.

JT: What was the United Appeals?

JE: United Appeals is a group, they have the same thing in Houston. Companies give money to them, and they parse it out to Boy Scouts, Girl Scouts, Red Cross. Any charitable organization requests money from the United Appeals, and they make up a budget, and they try to raise in Houston, say, fifty million bucks or so. Then they go to each corporation and say, "Spread the word amongst your employees."

Well, the man who was manager there for a good while in Beaumont was very active in that, and we had one draftsman who said, "No, I don't want to give anything."

So the general manager came upstairs and talked to him and says, "Look. Why don't you just give a dollar? Then we can say you gave something. And if you want to, I'll give you the dollar." But he wanted it to be 100 percent, see, that at Bethlehem your employees were behind the United Appeals 100 percent.

JT: You guys have a pension plan?

JE: Yes, which went—it was taken over by the government pension board when Bethlehem went bankrupt.

JT: Wow. Did that hurt you guys any, or you were already out?

JE: Well, I was already out. I'd gotten out and taken a lump sum.

JT: Let's talk about the boom of the 1970s, and then we'll go into the bust of the eighties, and then that should round out our little discussion here. Energy crisis, OPEC embargo of 1973, the price of a barrel goes through the roof. Tell me a little bit about how the recession and economic problem impacts Beaumont, but on the other end how the increase in the price of oil, and increased construction and exploration activity in the Gulf really helps. It's kind of an interesting balance there.

JE: Well, in 1973, in September of 1973 I moved to Singapore.

JT: That's right, you were gone. You were on the other side of the world.

JE: I was gone, and we had no fuel crisis in Singapore, because there were big refineries there. Singapore's a big refining center.

JT: When you come back in '77, '78, how had things changed in the shipbuilding world in Beaumont?

JE: Very little. And we did have some fuel shortage when I was in Bethlehem. After a while I was living up there. It was our next fuel crisis.

JT: Up in the north?

JE: Yes.

JT: But the industry was expanding. It's continuously moving further on the shelf, and even off of the shelf. The drilling activity in the Gulf of Mexico is really increased in the late seventies. Did that create any more need for Bethlehem's work?

JE: Well, Bethlehem, of course, got out, went bankrupt and closed the shipyard, well, closed the shipyard first, and sold it to Trinity Industries, and then the company went bankrupt. A lot of these big platforms are being built over in Pascagoula, a lot of the big semi-submersibles and tension-leg, the ones for 3,000 feet of water and 5,000 feet of water are being built over in Louisiana and Mississippi.

JT: When did Bethlehem sell out to Trinity, what year was that? Were you still there?

JE: No, no. I was here.

JT: This is after the eighties, because the downturn had already taken its effect.

JE: Right.

JT: Talk to me a little bit about what are some of the factors that led up to Bethlehem's economic problems, revenue-generating problems and some of the other things that were going on internally. What do you think are some of the factors that led to Bethlehem's demise, the shipyards?

JE: Well, the shipyards, of course, didn't have as much trouble, didn't have as much problems as the steel business did, and Bethlehem kept putting money back in big blast furnaces. They had extensive labor costs, and they had not funded the pension plan, and all of a sudden they realized, and the government realizes, "Bethlehem, you haven't funded your pension plan, and your pension plan is like three or five billion dollars, so you'd better start putting money in it." And they did.

But the labor unions have always been very strong, and part of that is the government. John Kennedy, Jack Kennedy one time—the government mediator always worked, as they do with the automobile industry. There was a government mediator helping the unions negotiate. And they wound up in that particular time—Kennedy was president—wound up with an increase for the steelworkers.

So the steel industry then says, "Well, in order to be able to afford this, we're going to have to raise our prices."

And Roger Blau was chairman of U.S. Steel, was called down to see Mr. Kennedy, who told him, "If you raise prices, we're going to see that every federal job that uses steel, that we'll buy foreign steel. So I don't want you raising prices, because it's going to change the economy. The nails that go in the houses, the houses will cost more," and so forth.

So Mr. Blau went back and rolled back—he had said he was going to raise prices. So he went back home in Pittsburgh and rolled his price hike back, and that's been kind of the traditional way the government has treated steel. They didn't recognize, the government didn't recognize we're losing a basic industry here, and we're helping push them down.

JT: And the government probably doesn't have the hindsight that we have today, thirty years later, what has happened is more of our steel that we use is manufactured overseas.

JE: Yes. And the overseas yards were being rebuilt with modern equipment, the German steel works and the Japanese steel works that were a lot of them destroyed. When you build back, you build with the latest technology.

JT: Right, that's a very good point. A lot of our technology was old, and twenty or thirty years, that needed to be advanced, updated, maintained and all that comes at a cost. It's very interesting.

You had mentioned to me in our first discussion last summer the failure of management to go the way of steel manufacturing, and I was wondering if you can elaborate on that statement.

JE: Say that again?

JT: When I had asked you what had happened to Bethlehem Steel, you said that it was a failure of management to go the way of steel manufacturing.

JE: Oh. Well, Bethlehem concentrated on big blast furnaces. There's another company, Nucor, you may be familiar with them, they melt scrap and make steel out of it, which is a lot cheaper process than building blast furnaces.

JT: Building blast furnaces to actually make the steel.

JE: Right.

JT: But that was the business that Bethlehem was involved with that almost refused to be flexible, to kind of diversify—

JE: They never built any mills like that.

JT: Then so that, what you're talking about is the pressure of labor, the pressure of government, decrease in prices—

JE: Foreign competition.

JT: —foreign competition. That trickled down to the shipbuilding industry. And on top if it you've got a world recession, and then a dramatic decline in oil prices, the perfect storm.

JE: Right. And, of course, Koreans got into rig building, too.

JT: Clarify something if you will, and then I'll get to kind of our last questions here. The Federal Maritime Shipbuilding Subsidy Program, the MARAD, M-A-R-A-D, I think it was a Nixon program maybe in the sixties and seventies; tell me a little bit about your involvement with the MARAD shipbuilding, and tell me what are the benefits and the drawbacks to that program for the shipbuilding industry.

JE: The only way we got involved in that was a Title XI guarantee of the bonds that were sold to finance a vessel, and we worked, our people worked to get that

extended to drilling rigs, to where some of these rigs that were built, a lot of them, bonds were sold. You got a few investors. Let's say you financed 20 percent of it with investors, and the rest of it they sell bonds. I know one rig owner told me that, I believe it was the retired schoolteachers in the State of Virginia bought all of their bonds on that rig. But those were guaranteed by this MARAD Title XI, U.S.-government guaranteed, which is really the only kind of a bond that a schoolteachers' retirement fund ought to get into.

Now, at one point—and MARAD charged a certain amount on that loan, ¾ percent or something, and at one time they had a lot of money. But I imagine that that fund has been pretty well dried up and had to be refunded. I don't know that.

JT: So from the industry perspective, if you've got, as we talked about, the international overseas competition, this helped because it allowed more credit to build these.

JE: This helped, this helped, yes. Now, you had to have some substance behind it to demonstrate that you could pay off the loan. Generally a three-year drilling contract would do that, would be enough. You didn't need a twenty-year contract. But you couldn't just walk in the door and say, "Well, I'm going to build this drilling rig."

And, "Well, what are you going to do with it?"

"Well, I don't know yet. I'm going to try to get it hired out when I get it built." You had to have somebody substantial, a major-oil-company contract for several years.

JT: And because of that, that's a prerequisite for this program, you can see how it's attractive to shipyards, to shipyard owners, to shipyard investors when it got contracts. What happens in the eighties when the contracts dry up, backlogs dry up; does this program become a hindrance to some degree?

JE: Does it become what?

JT: Does it become a problem, does it become a handicap for the industry?

JE: Well, no. It's just not there.

JT: Funds dry up and disappear?

JE: Well, you don't have the contracts to back it up, or the investors to invest your basic funds.

JT: I want to ask you some questions about *Ocean Star*, and then this question before that, we'll get into *Ocean Star* and then we'll wrap it up. I want you to define for

me what the term deepwater meant to you as an engineer who's designing drilling rigs. What did the concept deepwater mean to you in the 1950s, and how did that concept change in 1970?

JE: Well, originally it meant a hundred feet. That's what *Mr. Gus* was, for a hundred feet of water. Then as we went on to 200, 250, and so forth, and the *Ocean Star*, as I recall, is 250 feet of water. Now, the *Ocean Star*, ODECO, a New Orleans company, offshore driller and exploration company, short-term, ODECO, and the guy that ran it, a very nice guy, knowledgeable, ran a good company. But they designed all their own rigs. They had in-house engineers, and they built them at either Avondale or Engels, and these were mostly these bottle rigs, three bottles.

Then they decided they wanted a jack-up, and they hadn't had any jack-ups, and hadn't built any. So our salesman made an appointment for me to go over to New Orleans and meet with their people and describe our rig. So I took drawings down, and specifications. We're in this conference room with about ten guys in it, both their operating people and their engineers, and I put the drawings up on the board and talked about the rig, what it'll do and all this. I'm just about through and one of the guys says, "What happens if a boat runs into one of those legs?"

I said, "Well, it depends on the size of the boat. We've had that happen on some of the rigs, and sometimes they put a dent in it that needs to be fixed, and later on it's fixed."

He said, "Well, suppose it's a big boat, and it knocks the leg out from under the rig. What's going to happen then?"

And I start folding up my drawings, and I said, "Well, it's going to wind up in the water."

And one of his guys then says, "Oh, Pete," or Joe, or whatever the guy's name, "be reasonable." In other words, he says, "You know what's going to happen to any rig that's out there if a ship runs square into it." And I thought, well, you know, this is, cancel this sale.

But a couple of days later they called up and said, "Just send the contract."

JT: Wow. You packed up and you left that meeting knowing that there was probably no chance they were going to be—

JE: Well, no, I didn't feel quite that bad, but I think, you know, I says, there's somebody there casting doubt, and just wonder how much strength that guy has... with the company.

JT: So ten ODECO guys or so, and you. You're kind of the engineer sent up to do a salesman's job, right, to do the presentation?

JE: Right, yes.

JT: So they came through with the contract, with the offer. Tell me a little bit about the next step. Comment on what they had in mind in the design for the location that they had chosen for the *Ocean Star*.

JE: I don't know that they had chosen their location at the time they bought it.

JT: What year was this, in the late sixties?

JE: [19]68 I believe.

JT: So they probably came out and the Department of Interior said, "We're going to lease out this tract of land. It's in *x* depth of water, 250 feet ."

JE: Well, I don't know that they were leasing. They were drilling for the majors. I don't know that ODECO ever drilled any for themselves offshore.

JT: So tell me about the design of this thing, of this big *Ocean Star*, and how was it different from the previous generation of jack-ups?

JE: It wasn't. We had several rigs being built of that design at the time. Now, there were some changes. Always the owner wants to change something, you know,

the different machinery and some details, but not the major concept of the rig, because at that time we had several other rigs being constructed just like it.

JT: This was a three-leg jack-up that had a maximum depth of 250 feet?

JE: I think 250, but you'll see that when you go on it, and if you look at the drawings you might see that I approved them.

JT: Your name in the corner, on the bottom right hand?

JE: Yes.

JT: How long did it take you guys to build that, from design to completion?

JE: Well, if we had the design as far along as we did with it, and it fitted in the yard schedule, we could deliver it in less than a year, sometimes nine months.

JT: And the legs—so in other words, you build the actual rig and the platform, and the legs, are they built into the actual platform, and the platform is floated out, or are the legs kind of assembled later on in the process?

JE: Well, we built them up as high as we could and still get them under the railroad bridge.

JT: Got bridges in Beaumont, right?

JE: Yes. There's a railroad bridge in downtown Beaumont that was our vertical limitation, and some of them we had to top off downstream. What we would do would be to set the leg sections on the deck, and then jack the rig up to where that section was next, and would skid it over then, and fit it in and weld it. Sometimes we'd have two sections, or three, and we'd just have them lined up on deck there. We would put beams down to skid them on.

JT: So how many years do you think that the *Ocean Star* was in operation? It began in the late sixties.

JE: Twenty years, I believe.

JT: And most of it was done in the Gulf of Mexico, on the outer continental shelf?

JE: I don't know that, but I suspect it.

JT: So at some point it was removed from service, and then somebody bought it and decided to make a museum out of it. Great concept, I think.

JE: Yes.

JT: Have you been there since they've turned it into a museum?

JE: Oh yes, I've been there a couple of times. I was there, they had a big commissioning when they first set it up, first got it going, and they've changed it a lot since then. I've been again a couple of years.

JT: I think not only having such an interesting museum, such an interesting real piece of history, particularly for the Gulf Coast, but now they've got that Hall of Fame Wall—

JE: Oh yes.

JT: —that brings in a little bit more revenue for the museum association, and to have those men honored, I think, is a fantastic idea.

JE: Yes. They had a book written about the history. Have you seen that?

JT: I have not.

[Tape recorder turned off.]

JE: That's a reasonable thing.

JT: Okay. But this just came out, this book here? It's got some excellent photographs in here.

JE: This came out last September, I believe.

JT: So for young people like myself, and even the next generation who go to visit this museum, what would you think are some of the challenges of designing and building this vessel that may not be on display at the museum, that we should know about the challenges of building such an amazing piece of equipment?

JE: Hmm, that's a loaded question. The challenges mainly were knowing all the external forces that you had to contend with, the wind and the waves and the type of bottom it'd sit in.

JT: And even to a certain extent the Coast Guard regulations—

JE: And ABS—

JT: —and ABS regulations.

JE: —and how much supplies they wanted to move with. A lot of the earlier rigs, they had to unload everything, all the consumables, because they didn't have enough stability or jacking power to move with much on. That's always important, that you don't have to unload all your drill pipe or such, because it'll take you a while, you know, and time is money. That's the thing to remember in all this, that you're renting it. This rig is being paid by the day.

JT: So you guys built it for ODECO. I imagine that they held onto it for twenty years?

JE: Yes.

JT: Or whoever bought out ODECO ended up having that as an asset?

JE: I think ODECO was still owning it then.

JT: Okay. I'm going to take a look at this book. This is new.

JE: I don't know whether ODECO is still in operation.

JT: I'm not sure either. That'd be a good question. Well, Mr. Estes, I really appreciate it. I'm going to turn this off.

[End of interview]

[final edit by Jason P. Theriot, 3 July 2008]