BOEM DEEPWATER GULF OF MEXICO HISTORY PROJECT

OFFSHORE ENERGY CENTER HALL OF FAME

Interviewee:	John J. Swoboda, Jr.
Date:	September 24, 2011
Place:	Houston, Texas
Interviewer:	Tyler Priest
Ethnographic preface:	John Swoboda's parents immigrated from Czechslovakia, and John was born in Galveston, Texas. When a third party showed Swoboda's father plans for an offshore drilling rig, John helped with its fabrication—on the workover rig that became known as Skytop. During College, Swoboda worked for Collins Construction Company, helping to lay offshore pipelines in the late 1950s. After college, Swoboda landed a job building military equipment for jet airplane munitions, at the start of the 1960s, and later assisted with an offshore diamond mining concern. Doing business as a small firm back in the United States, Victoria Machine Works—which his father had founded—Swoboda was able to acquire several contracts from McDermott for barge fabrication. His firm worked on a wide array of projects over the decades, including the U.S. Navy's historic SEALAB habitat. By the 1990s, the firm employed over 200 people.

File 1

TP: This is an interview with Mr. John Swoboda. Did I pronounce that right?

JS: Absolutely.

TP: September 24, 2011 for the Offshore Energy Center Hall of Fame. Congratulations on your induction.

JS: Thank you.

TP: Interviewer is Tyler Priest. We're in Houston, Texas.
So tell us a little bit about your background growing up in Victoria.

JS: I ought to tell you first that my father was born in Czechoslovakia, and he came over when he was about seven. So they landed in Galveston, and my grandmother stayed in Houston to scrub floors for the breadwinner and keep two of the kids. My father was the middle child, and he and my grandfather went to Crosby, Texas, to clear the land and start a farm. They about starved to death, but they finally made a farm out of it. Then he hated farming because it was nothing but work, but then he saw an old tractor in the field one time, and he walked over there and talked to the farmer, you know. "What are you doing with this tractor?"
He said, "It's broke. Won't run."
So he said, "I'll tell you what. If you give me the tractor, let me see if I can fix it. If I can fix it, then I'll plow your fields for you."
So the guy said, "Take it. It's just junk."
So that's when the old man learned how to fix things, especially mechanical. So he fixed the tractor, and then he started plowing everybody's fields around Crosby. Then he read somewhere there was a mechanic training school in Tennessee, so he hitchhiked to Tennessee.
Then he became a mechanic, came back to Houston and worked as a mechanic. Then he went to visit a friend in Taylor, Texas, and he was working in a little machine shop. When he got there, the guy says, "Hey, I need a welder. Do you know how to weld?"
He said, "Sure." He didn't even know what a welder was. But, anyways, he heard about it, so he went to another town, figured out how to weld over the weekend, so he became a welder. Then his friend and him decided, "Let's start our own company instead of working here." So they bought a little—this here's during the Depression. It didn't take much to buy parts. Between them, they had a coupe car, so they cut the back end of the car off and made it into a pickup and loaded all their junk on the pickup and were going to Corpus to work there in Corpus because there was a lot of industry there.
Well, as they were passing through Victoria, they broke down. They had a break with the Central Power & Light truck, so the first job they had was to fix the Central Power & Light truck, and from then on they said, "You know how to

fix things. Why don't y'all stay here and start a shop." So that's how we got to Victoria.

TP: Serendipity.

JS: Yes. And that's how I came along, just meeting different people, and as I'm growing up, well, dad then bought a farm. First of all, we lived on two acres, and Dad was so poor that the people, the welders and machinists, they lived at our house, and Mother cooked for them, washed their clothes. We had cows, chickens, and hogs, and we had two big gardens, and that was my job out there to take care of all of that. So, consequently, I didn't like farming, but then Dad decided he's going to buy a farm so he can then raise more stuff. My two brothers and I, we were the slaves for him. The old South was back and [unclear] farming all the time, and then he put lights on all the tractors because at night, soon as they broke down, we had to fix it during the night so we could start working first thing in the morning.

Then I decided I needed some spending money, because slaves, you know, don't get paid, so I got me a paper route. He said I could have a paper route. Well, about that time I was about thirteen, and Dad needed a welder in the shop. So he said, "After school, show up here. You're going to be welding." So he taught me how to weld, and I was a welder then after school. Then I got the paper route and said, "I'm going to make a car. I'm tired of riding a bicycle." I had to go all the way across town, peddling.

He said, "You can make it, but it can only be four-foot by eight-foot. That way we can get it in the back of a pickup." I went to the junkyard, that was my supply store, and I built that. Finally got enough junk, cut it up in pieces, and it took me three tries. My designs weren't any good, but he wouldn't help me. Nobody. He told the shop people, "Don't help him." But that's how you learned, by trial and error. So I finally made it work and then I put some lights on and put a starter on it and hydraulic brakes and springs.

TP: You taught yourself how to build a car?

JS: Yes, and got it licensed.

TP: What did you work from? How did you teach yourself how a car was designed and built?

JS: Went to the junkyard and saw the frames and that, so I tried to copy it, but I had to make everything a little smaller, because he was only going to give me a single-cylinder engine. It's a water-pump engine, but it stood about this tall, an oil field water-pump engine. The car, with all the drive train, could only go twenty miles an hour, but, hey, it's better than walking or peddling a bike.

TP: It's faster than you can go on a bike.

JS: That's right. So this way, delivering papers, and then we could go to the drive-in movies. We could get about two people in front, two people in back, over the [unclear]. It looked like a Jeep.

TP: So it must have been a novelty, people seeing you driving around in that thing. [laughs]

JS: Everybody wanted to ride, and the funny part was that there's a spark plug right on the top of the motor sitting in front, and we'd go to the drive-in movie, and they'd say, "Where do we put the metal tray?" "Just put it on top of the motor there." So they'd set it down and when the girls touched that spark plug, everything went up in the air. Well, the girls over there didn't like us.

But, anyway, that's how it started. Dad never said no to anything, about building, working.

TP: You said you wanted to design state-of-the-art heavy equipment for futuristic companies. Did that start with this?

JS: That how it started right there. I thought, "Well, hey, that's fun. I want to go out there and do this for somebody else." It never dawned on me to make money. It was just the creativity of it was a lot of fun.

So when I got into high school, well, a guy came to Victoria, Wayne [unclear], and he said, "I've got an idea for a drilling rig," and so he talked Dad into building a drilling rig.

The old man looked at it. He said, "Your designs will work." It had an open crown, so they wanted to pull two strings at one time, let the pipes stick out the top. So then you needed a draftsman, so after school I went there and I was drafting for him. Then Dad started building the rig, and then I'd do some welding for him. Then after the rig was built, then I was roof-making for a company that bought the [unclear].

TP: This is the Skytop workover rig?

JS: Yes. That's when they came up with the name Skytop, because it didn't have a crown up there. The pipe went straight through, so the sky was the top, so they called it Skytop Rig. I don't know how many rigs they started building, but Dad didn't want to build those anymore after about the third one. He got tired of it. He says, "Take them and go across town or something, and you just start your own company." They gave him his stock back, and Skytop Rig started. They had a big plant here in Houston also one time. But we never regretted not having the Skytop Rig because we don't like to build the same thing over and over, as you see by that. From then on, well, things started moving fast.

When I went to college, I started going to work for Collins Construction Company. They were laying offshore pipelines. So this way, that was an

interesting something I've never done before, and I'd like to be a diver, because after the Second World War we'd go in and buy a used diving—the frogman diving equipment, and we'd experiment underwater swimming and that. So that's why I like to go underwater.

TP: I want to hear about that, but let me take a step back. You talked about your membership in the Southwestern Rocket Society.

JS: That's when I went to college, yes.

TP: You were one of the Rocket Boys. You know that they made a movie about the guys—

JS: I was a lot sooner than that.

TP: You were before that. I noticed that, yes. It was before Sputnik.

JS: It was '57.

TP: It was before Sputnik, right?

JS: That was before Sputnik. When Sputnik went up, they asked us whether or not we had equipment to listen to Sputnik, and we said, "Yeah, we've already listened to it for two days."

The [unclear] said, "Well, how about listening to it and reporting."

I said, "No." It's saying the same thing. Who wants to listen to that? We just quit listening. I spent all my time designing and building rockets, and then we had a place that the college gave us, space at Southwest Research. That's not Southwest Research. It's Balcone's Research there in Austin. So we were building an underground test station, tests facilities, because every now and then our rockets blew up and so everybody's got to climb down behind the concrete walls and that. So this would put it underground so we don't have to do that.

So I was doing that and then we were coming to Victoria on the weekends and spending all two days, twenty-four hours a day, building rockets, and this is where I found out that you can do almost anything, except all of a sudden I started getting tired and feeling sick. So I went to see the doctor, and I said, "What's wrong with me?"

He checked me out and said, "There's nothing wrong with you. I can't find anything wrong with you."

I said, "Well, why do I feel the way I feel?"

He said, "It's easy to solve. You can solve the problem in a hurry."

I said, "How's that?"

He said, "Just lay down." We just wouldn't stop long enough to sleep. I'd maybe get three hours' a night sleep while I was at college, and that wasn't enough. Then during the summers, I could sleep on those steel pipe rack, and

that's where I caught up on all my sleep then, was on top of a pipe rack while we were making trips or something or drilling in hard ground.

After I got out of college, I had him a job in the Persian Gulf, and they started having some problems, mechanical problems, with some of their equipment. Well, Dad was building some of their lighter stuff, so I went to Iran, and it's about 150 miles out to sea is where the [unclear] Kharg [phonetic] Island is, and then from there it's 26 miles off the Iranian coast. So we put together 4,000-foot strings of pipe, like spaghetti on the island, and you put your barge out in the middle, out in the water. You had cables going from Iran to the barge, and then the winch on the barge came to the island. We attached the winch line to the pipe and started pulling it out. Then you stopped, rolled over another pipe, and you had a bunch of rows there and you welded it together, and then you pulled it out.

Every time you stopped and you rolled it, they moved the barge back 4,000 feet, so you just kept, like spaghetti, just feeding it on out until we got so far, and all of a sudden whenever you reached a certain point, they said—I remember I was out ~~other~~ there and we were pulling, and the cable is coming in, and shore would call up and say, "When are you going to start pulling this?" And we'd already been pulling for twenty minutes. The pipe on the shore is still standing still. The pipe was stretching. I don't know how far it was, but, anyway, this time the pipe just wouldn't stop where we wanted it; it just kept moving. So they hurried up and tied one of these big Caterpillars onto it with the cable, just to hold it. This here's the pipe, this tall, forty inches. It just pulled the Cat and all in the water, filled up the pipe full of water then, and then you had to plug it and blow it out. So, anyway, I learned a lot here that pipe stretches, but that little bit, a few thousandths, ended up in the 20 feet after you're miles long. So there's a lot you need to learn.

TP: To take into account.

JS: But the thing is, by not taking time to study everything, Collins did a lot. Today we over-study it, but you don't get as much done and it's so expensive.

TP: Where was Collins based?

JS: Fort Lavaca. That's 45 miles from Victoria. Again, see, he just happened to luck into the right thing by pulling pipelines under the river. Instead of trying to lay it by barge in the river, he'd lay it online and then they'd just pull it across the river. Then we'd make at VMW, Victorian Machine Works, we built the—

TP: Victorian Machine Works was the company you started or your dad started?

JS: No, my dad started. It was a little machine shop. See, there, again, when I say "little machine shop," we didn't have hardly any machines, so we started buying used machines.

I'm going to get ahead of myself here, but one time I was looking at a machine that we wanted to get in a bigger business for the offshore. Offshore, everything's so large. I saw a big lathe back there, and they said it's 15 foot and it can machine something 60 foot long. So I sent my brother over there to buy the machine but pay junk prices, so he got it for nothing. We had to take eight trucks to bring it into Victoria, and then we modernized it to where it's a modern machine. So we had—probably it was a 1928 lathe, and it was probably worth, when we bought it, nothing, but if we bought a new one, it would have probably been a $2 million machine. But we modernized it, and a man rode it. He could operate it with pushbuttons and all of this. We put digital readouts, so we could even machine then to real close thousandths of an inch, and we got by without spending a lot of money. Because if we can build equipment for the oil patch and they're willing to buy it, why couldn't we build it for ourselves? Most people says, "No, we got to buy somebody else's built." So there's different ways, and that's really how we got into building all the other stuff over there. Customers would hear about us, and they would come down and talk to us.

TP: If they needed something custom built or designed, right?

JS: Well, that's like—this is a funny way I got involved with the oil patch, the first time on the pipeline.

Well, let me get back to college. After I got out of school and went to Cape Town, I mean I went to the Middle East, I came back to Victoria because I got injured over there, and I came back to Victoria. By that time, Collins went under, so I got a job building military equipment for automatically loading weapons under the new jets that were coming out. This was 1961, '60 and '61. They were built lower to the ground, so you had to have something to go under there and position the rockets and the 4,000-pound bombs under the wings. So I was lucky enough to get working for a company that built this type of equipment, and I came up with an idea how to manipulate it, so I own the design on it, and they're still using them today.

TP: You said you got injured. What happened?

JS: I fell off of something over there at that time, and that's when I found out I had—

TP: In Iran?

JS: Yes. And I was bleeding a little bit on the inside, and so the only doctor they had over there was a heart doctor. Mine was a lot lower down where I was at, and they said, "You could go to an Iraqi doctor," and I said, "Nuh-uh." [laughter] That's when I said I'm going to come back to the States, and it really wasn't much of an injury, but back then, you didn't know what you had.

So, anyway, that's when I came back to Victoria to work, I believe I mentioned, when Dad got sick. I didn't want to do repair work, so that's when

Collins called me to go to Cape Town, because he's having all this problem with picking up the diamonds, because the waves are 20-foot swells, because you're right at the shoreline.

TP: So just for the tape, this is a diamond mining operation offshore.

JS: Offshore. At Cape Town you have to go 500 miles north, and it took thirty-six hours to get there, and you're arriving in waves, the swells are about 20 feet, so it took thirty-six hours there, and if you have to come back, it's still thirty-six hours. So if you need to fuel there, it still took thirty-six hours.

They'd go out there and start working, and as the waves come up and down, the suction pipe was cramming into the floor, so they needed some way of stopping it and making it so that you could prevent that. So I came up with a system similar to what the offshore is using now for heat compensation, for the drilling rigs, just use a lot of hydraulic cylinders, whatever we could find to build, because I had to build it and get it installed in three months over there. So you're designing and building it at the same time.

TP: Heat compensation for the suction.

JS: Suction, right. Yes, it stays on the floor.

TP: So it stays while the ship is going up and down.

JS: Yes, it stays on the floor.

TP: Was that difficult to design, or did you have any prototypes that you were working from?

JS: There wasn't anything. I had to put in some tall columns so that you could reach down to lift it out of the water. It was just jerry-rigging, whatever you could find to make it work, because we didn't have time to order anything from the States. Back then, if you wanted to talk to the States, in '64, you had to go to the telephone company, schedule a phone call to the States a week in advance, and then you had to give them a specific time, because there was only one transatlantic cable. And if you missed your time, you had to go back and schedule another week in advance.

So everything, you're really out in nowhere, and the temperature, everything over there was dangerous and—I can't think of the word now—inhospitable, because the desert comes right to the water. De Beer's owned all that diamond mining along the shore there, and like they said, if you fall over the side, don't walk inland, because they have orders, the guards that patrol that, to shoot to kill, and they don't even go look at you. You're not supposed to be there, because that's where the poachers come in. They just shoot them and just go on. So we just made sure we didn't fall overboard. But that was interesting.

Barges, when a 50-foot rogue wave would come, as I said, the first one was a 70-foot, picked up the whole barge and put it on a rock 30 feet up in the air on land. The one that I was on, designed for them, after I'd left, well, a 50-foot wave lifted it up, and it rolled a 120-foot tug under it, came down on it, rolled the tug under it, punched a bunch of holes in it, and washed it ashore.

TP: So, heavy seas down there.

JS: It was heavy seas there. I think we saved that one.

TP: Was the diamond mining offshore very successful?

JS: They were finding 30,000 gem diamonds a month. I have some more stories. You're not supposed to touch the table and all that. They got guards, but I didn't know that. I picked up a handful of them, just from—I mean, you're picking up tons of stuff in all these shakers that we built. Well, you could just see the diamonds just separating out on the table.

TP: Wow. Do they still do that now?

JS: I think they still are. I haven't checked it.

Anyway, then from there on, well, I got—I forgot where I'm at. What year am I talking about?

TP: About '64, you're in Cape Town, and then you converted the machine shop.

JS: Yes, we decided to go offshore.

TP: You made a conscious decision to try to service the offshore industry?

JS: Offshore industry.

TP: In the Gulf mainly, or you didn't care?

JS: Anywhere. Then I couldn't get a job. We had no reputation. We were just a junk shop, fixing plows, motors, trucks, and stuff like that. McDermott came out with a bid for some constant tension davits, so I went over there and I told them I'd like to bid on them, and they didn't like it because I was such a small company, so they gave it to me just on principle. After looking at it, I didn't like their design. I said, "That design isn't going to work," because after working offshore—

TP: That's for a pipeline barge, right?

JS: Yes, pipeline barge. Pipe-laying barge. So we came up with our own design and high-pressure hydraulics so that you wouldn't generate so much heat, and I

presented it to them. They said, "No, we want it by our design." So they came out with another bid. They didn't like the other people's designs, so they happened to send it to us again. So we quoted the same thing over. One of the superintendents was playing with me. He says, "I'll tell you what. We'll give you this job if you build it our way."

I said, "I'm not building it your way, because it's not going to work, because you won't like me if I build it that a-way." So, anyway, I finally left because they said they're going to build it this way.

So the third time they came out for another bid because they changed something, and we added it to ours, and I said, "This is the way it's going to work," and I tried to sell them my design. This time they brought in a vice president. After a couple hours of arguing back and forth on the design and me telling them why theirs wasn't the best and trying to sell mine and all of this, I finally told them, I said, "Well, just give it to our competitors. I'd like to bid on some of your other equipment."

They said, "We'll give you fourteen of these davits instead of seven if you build it our way."

I said, "No, I'd like to have it." That would be the biggest job we ever had. I said, "My plane leaves in two hours. How about me buying y'all a drink, and I'll get on the plane and go home."

That's when the guy said, "Well, while you're at it, just get started."

I said, "Get started on what?"

He said, "Well, you said you wanted to build."

I said, "Yes, I want to build, but I'm not building your way."

He said, "I'm not saying doing that. If you're so sold it's going to work from experience, we want to build it your way."

And that's how from then on people started trusting us, because I guess the word got out that we're going to build it the right way. My dad always said, "If you're not willing to buy it that a-way, don't build it. You're building it for yourself. That's your reputation. Don't ever let anybody complain about the quality. They can complain about the price, but never the quality." So that's the way we've been building it.

TP: That's interesting.

JS: That's how we've been getting most of our—

TP: So that was sort of a defining moment for you.

JS: Yes. We got the job and from then on, well—

TP: What pipeline barge was it, do you remember?

JS: I don't remember, because we built a whole bunch of them since then.

TP: So then you got a steady stream of orders from McDermott?

JS: Yes. But, see, everything is relationships. We believe in a relationship. We got to know the people, they got to know us, we got to know how they think. If you know how someone thinks, you can help them better.

TP: So they had finally come around to seeing that your design was better than what they originally—

JS: In that case, yes. They'd come up with some real good designs, but on that particular one, I knew. I'd already worked with that system before in the Far East, and it wasn't the best. So I wasn't going to build the second best. Let the other companies do it, our competitors do it, and our competitors already built them the other times. So I've got to say that's one thing my dad always taught me to do, was a quality product.

TP: This was a constant tension winch that they wanted, or a davit?

JS: Davit. Whereas a wave, again, picked up, it would lay out, so we had to build several systems. This here's the first time high-pressure hydraulics closed circuit was used. So we had to build our own servomechanism systems loads and automatically pay out, switch the direction of the oil flowing. Again, that's what we loved to do. My brother's an engineer, too, so we had a lot of fun.

TP: Great. So take us beyond that now.

JS: Okay. From there, this is where—since we're running down, only so much time, then we started getting into the BOP handling systems that fit in underneath the decks of the barges. There's different kinds on the wheels, and then there's some that are swiveling and hydraulic slides.

TP: That lower and raise the BOP from the—

JS: Yes, put them on there to where you can pick them up with the block, drilling block, and set them, drop it down the bottom. But you have to then move it out of the way. Let's say they want to change it out. They'd pick up the old one, we'd take it and move it out of the way, and then put the repaired one in under so they could then drop it down to the bottom. So we did all of that.

Shell came up with one. They got tired of always—every time a hurricane came in, you have to pull up all your pipe. Why don't we try to just pick up the riser just partway and hang it underneath the floating platform.

TP: And leave the BOP down on the seafloor.

JS: Yes, the BOP. But this way they wouldn't have to—it takes days to pull all the pipe up. It's big pipe. And then it takes a bunch of days to drop it down, to reset it down. So they said, "Why don't we just hang it, just let it just ride with the waves." So we built them. They came up with the idea of doing this, but we did all the figuring out the strength and all this and what size and how to best make it work and hang it off. I don't know how many tons it was now, but it's a big, big weight.

TP: About what time was that? When was that? In the sixties, late sixties, maybe?

JS: That's one good thing about getting old. I really don't care anymore when it was, because it all seems like yesterday. I don't get old here, but my body does. So I don't even know, since we built so much, where do these things fall into place.

We had another one job of having to—I know. On my ranch I have 100 acres. Had to learn to weld pipe fences, corrals. Man, I couldn't cut the pipe and fit it where it sits on the joints here on an angle. So my son and I were out there, and I said, "Hey, let's build a machine that the thing will cut it in about a couple of minutes." We just punch in some numbers, the diameter of the pipes and that, how much offset. You just punch the buttons, and then put a button here to start, and it automatically lights your torch. Perfect fit. Built the machine.

Then we started selling them. A company in England, every time they started a project to build another building, they'd buy a new machine. My son would go there and set it up for them, and they'd get another job. The way they'd mistreat the machines, they'd buy another machine. They said, "That's the cheapest thing there that we can do it in half the time anybody else." But we didn't sell them here in the States, because there's other companies building them, but ours was a lot smaller and simpler. But we got tired of doing the same thing over. We'd rather go do something else.

Then we got into tug barge hitches. We were at Avondale Shipyard working on a—there was a Navy ship in there. I can't think of the ship's name now, but it was one of the first Navy—they were trying to put a habitat underwater and try to see how long a man can stay underwater. So we built a lot of the handling system for them.

They were bidding on a job for building—let's see. Like a 1,000-foot-long shipshape tug, and then you have a tug that's seven stories tall, and they would fit in a notch in the back of the barge. Then you had to have like a cylinder or something to pull them together and hold it together. So it's calculated it would take about five million pounds to hold it together, so we came up with a hydraulic cylinder that would pull five million pounds and we could accurately hook it up and pull it together. So we started building these big connections.

Well, then somebody else came up with big six-foot-diameter pins that come in from the side where it kind of oscillates, so we started building some of those for them. There's another type, and I forgot what it is, and we built a couple of those, and then other people got involved in them so we said, "Why, heck, let's do something else." In between, we did a lot of little stuff like this.

TP: Did those things come into play in the offshore industry?

JS: That's where they hauled up the oil from these tankers. See, what they'd do, they'd just come over there and the tug would drop off a barge here, the shipshape barge. In the meantime, this one here's been loaded, so they'd latch onto it, then bring it back, and while they're bringing this one back, they have another one here being filled or emptied, so they'd drop it off. So the tug is going just back and forth.

TP: Shuttling back and forth, yes.

JS: They went across the Atlantic and all of that, just carrying these things back and forth. Then, too, in the North Sea the weather gets real bad, and the pipe is—whenever they're coming out of a hole and they have a 90-foot joint of pipe and it breaks loose from people holding it, well, it started banging around and people have had their arms cut off from banging around.

Well, we were asked by a company in Dallas if we could build some kind of an arm to hold it, so we came up with an arm that you could grab it and then it'd move just like a human arm. But some other people had built it where it comes out and just holds it, but if they pick up the pipe, well, it'll pick up your arm and it'll break the arm. You can keep up with it, but if the driller doesn't say, "I'm raising it" and he raises it up, it can break your arm. So we came up with on ours a sensor that had an extra pivot, so if this started to move, it would move up and move down.

TP: Interesting. What was that called?

JS: A racking arm. So we built a whole bunch of those for the North Sea.

Then they came up. They had another problem. They needed to repair the jack-ups underneath. We made taking like a racking arm, but you put you some guides on the side. You can take a racking arm, drop it down into this guide here, hang it off, let it go down and then rotate it around. Now the round pipe that we had coming down the side at about 4 feet in diameter, a man would climb down it, get on this platform that's going under the rig, and he can move it around and paint it, repair it, underneath the jack-up while they're out at sea. Then they could swing it back around and take it off and take it to another rig. If they tell us their problem, we'll fix them. We'll usually make a machine to do the project.

TP: It looks like you've worked with every company on just about every possible challenge that they had.

JS: See, the other thing that we were doing was also like all the diving companies. Most of the underwater diving companies, we built their diving bells and—

TP: ROV handling systems and saturation diving systems.

JS: Yes. One where we got in with them was recapturing the bell when the waves got bad, got hit, because otherwise you'd tear up the people on the other side, because as you're coming up, a wave hits it and drops them. We came up with, again, constant tension winches to handle that, and we made some that would even retrieve these submersibles, these little submarines.

Then we got into hyperbaric chambers for people at the U.S. Navy. The Navy in Panama City was building, experimenting with hyperbarics.

TP: This was for saturation diving?

JS: No, this is for medical. So first came in when people had the bends, the Navy divers, but now they found out there's a lot of medical uses for them. Now they's just common practice.

TP: Because it's a clean environment, right?

JS: Well, you're under oxygen. The oxygen is healing. It makes you heal a lot quicker. So then we were building a lot of these for the Navy, and then some of the hospitals wanted some. So the Navy then allowed this one guy to work for the hospitals, and so then we'd build them for the hospitals and then we built a very large one there in California for a hospital group. More and more people got involved with that, so we started looking at other things to do, because after a while, that's just another pipe.

Helicopter refueling, we—

TP: Oh, yes, that sounded interesting.

JS: The company was having problems with some of their helicopters were crashing because whenever they'd land on the rigs, they'd just take a hose and put it in a barrel and start pumping jet fuel into the helicopters. Sometimes that would foul up the jet engines and they'd crash, going to lose people.

TP: So helicopters use a different kind of fuel?

JS: It's just regular jet fuel, aircraft fuel. So we came up with some tanks, put some big framework around it so that when you take them onboard, when you swing them onboard, that kind of sometimes hit the side of a person with a boat or the side of the jack-up or semi, and then we furnished water separators on there and filters to take out any contamination in any of the area so whenever there wasn't any air in the fuel to make it sporadic in running.

All of a sudden, everybody wanted those, so we couldn't build them fast enough when we were shipping them to the North Sea. Well, we knew that wasn't going to last long. Somebody over there would start building them. We

stopped getting patents on things, because that took too long and it's a pain to read all the patents, and we decided the heck with it.

TP: Just move on to what's next.

JS: Yes, go on to something else, because you're not going to build that many of them, but other companies would build from stuff that we'd built two or three of.

TP: Then they patented it. The other companies patented things that you'd built first.

JS: They may have, but we never checked on it. I know they called us on the patents we did have. "These companies are checking on it. Do you want us to notify them that you're—?" Oh, forget it. What difference does it make? If they can help somebody with it, go ahead. The racking arm, we patented a lot of stuff on it, and I know a lot of people were using it, but we didn't bother to stop it because we weren't interested in building what they were using it for.

We did build the Aquarius. That's the underwater habitat. It was still being used by the astronauts. They'd go down there and spend a week or two weeks to get accustomed to being confined into a space and have to live in a small area. But here's one where you fix it to the ocean floor. It's about 125, 150 feet down.

TP: You also worked on handling systems for the *Glomar Explorer*, the original *Glomar Explorer*, in the Navy SEALAB, is that right?

JS: Oh, yes. The Navy SEALAB is where we got into the barge, because that's the Navy ship. So that's trying to adapt the ship to do a lot of stuff. So we had to make a lot of inventions in there.

How much was this offshore in that? Everything that we did helped whatever we were doing. We built our own computers in 1980. We got a job with the Navy to transfer wounded soldiers from landing crafts to the *Mercy* hospital ship, but they wanted to do it during rough seas. Normally, when the seas got to a certain height, they couldn't get soldiers onto the hospital ships. As they lowered the basket to pick them up, it'd come up and it's kill soldiers. So we came up with the idea, let's use little radars. We said, "Why didn't anybody else think of that?" So we quoted the job. We found some radars, little radars that we could put on the bottom of our basket. As it went down, well, it would sense the ship coming up, and it just matched the landing craft's motion.

TP: Did they use that in the personnel transfer nets, did they start using those in offshore too?

JS: Well, not then, because this here's—I guess that was in 1980. Yes, the eighties. Radar, after you get so close, they quit operating. They couldn't detect whether they're going up or down, so we didn't know what to do, and then all of a

sudden—one of our engineers was a physicist. We hired all kind of people that you normally wouldn't think who would do this. But, anyway, he said, "RAND came out with this automatic focusing. It measures the distance and it measures it in microseconds. Why don't we take those out of that Polaroid and put them on the bottom of the basket." So we said, "We'll call Polaroid."

So we called them, and they said, "Nope, that's a patent." We can't use it. "If y'all use it and take it out of a camera, we're going to sue you."

Okay. Well, I didn't know what to do, so I said, "Let me call the Navy. Maybe they'll—." So I called the Navy and told them that Polaroid has it.

Two days later, Polaroid called and said, "How many of them do you want?" [laughs]

"We'll take about eight of them."

So we got them and we tried it, and now we're into another problem. In 1980, they didn't have computers fast enough, small enough to compute that fast, because you had to predict the wave motion so the basket would start—it's normally here, so it would start moving so it's not jerking the man like that. So our guys, our physicist and another fellow, back then they had Heathkits. You could build your own computer by buying just parts. They already built their own computers there at the company, so they said, "Can we try to build one?"

Well, they started building it, and within two months they built about three of them. Two of them didn't work right, so they finally came up with one that did work and is fast enough. They had to have it in a big box but small enough to put on ship now and we could waterproof it. So now we got it to where it was working so you could transfer people from the landing craft to the hospital ship.

We had a deadline, because this here's when the Gulf War was starting, and that ship was going to the Gulf War, so they wanted it on there because they thought there was going to be a lot of casualties when they attacked Iraq. So we got it to working. So this is what we were doing.

Then we used this computer stuff back on the other stuff for offshore. One good thing about offshore, there's more companies were coming out with the computer systems that were fast enough, but we didn't let it stop. This is where I'm saying, is that if you have the right people, everybody's helping one another to make the company successful. We're not looking at wanting to be successful; we're trying to solve a problem.

TP: How big was your company then by the nineties?

JS: In the nineties we had about 200, 220, 230 people, but they were all cross-trained.

TP: Machinists, engineers?

JS: Yes. In other words, the engineers could do some electronics. They could do structural. The machinists, a lot of our machinists could do welding. We had some machinists would run three machines at a time because it was taking so long

to cut their boards, they'd go up and find a machine that's not working, put something else on it.

TP: Were you still personally involved in doing design?

JS: I was working the creative one, so I was going around and just looking, and after a while you can look at something and say, "Whoa. Something's wrong here," if you've done it long enough. My dad said always that if you pay attention, you can walk in the shop and tell where there's something going on that shouldn't be, because after while you get a feel for it.

TP: If you walk in and you see something going on over to the right here, you notice that?

JS: Yes. A lot of times just seeing a guy going like this here. Oh, he's got a problem. I'd tell the foreman, "Go over there and see what he's got. He can't read the print or something," you know.

So you've got to work with the people, and after a while they trust you. We always allowed them to make mistakes as long as they're trying. As long as you do that, then people are willing to try something and help the company. If they see another man over here doing something that's not correct, they'll go over there and correct him or offer to correct him. So we were helping one another, and if somebody didn't like that, well, then they had to answer to me, because I expected all my people to protect each one of us and also to make it safe, because if it wasn't safe, it wasn't going out. And if the engineers designed it, they had to be there when it was being tested. In other words, what would a guy do that's green? You may run him wide open forward and then just grab the lever and throw it into reverse. If you're not willing to stand there, then you can't ship it. Sometimes you just sheer a bunch of teeth. Well, you've got to figure out how to prevent that. Like I said, our company's different. We were helping the offshore companies become better. Every time they went deeper, we were involved. Like [unclear].

TP: Auger.

JS: Auger and all of those. So we were behind the scenes, trying to make everybody better, all the diving companies. We invited all our competitors to come by and visit us, and I went and started being able to go visit them.

TP: Who were some of your competitors? You were considered like a little niche fabricator, right, for the industry? Is that what you call yourself?

JS: We never even worried about it. Western Gear was a big one.

TP: Western Gear. Where were they based?

JS: In [unclear] Sedro-Woolley, Washington. Joe Stein [phonetic] is here in Houston, was building a lot of offshore equipment.

TP: Any in Louisiana?

JS: Not any big ones. See, we did the engineering too. But there's a lot of fabricators that would build to the drawings, but Joe Stein—

TP: So you're design/build too.

JS: He would do his own designs. And there's Victoria Depot in Canada, Victoria, Canada. They were competitors. They'd do their own design.

TP: People get confused between Victoria, Texas, and Victoria, Canada?

JS: Oh, yes. I went up and visited them, and some of their people eventually came down and visited us.

We had a small shop, and we never had new equipment. Like I said, we had to buy used and modernized it to fit our needs. We weren't interested in making a lot of money, and that's where everybody says I was a fool, because if we would have went into production, set up a production company here on the side, but we never had time to do that.

But we did make plastic cattle feeders, and made the best in the country in one of our buildings there because somebody needed some cattle feeders, and they begged us to just make them some. Then we were selling the feeder wheels to everybody in the United States when we figured out how to make them pick up the molasses out of the cattle feeders so that the cows can lick it. Eighteen-wheelers were shipping those out. After a while, you know, that got to be a pain.

TP: It's really kind of a throwback to old craftsmen. I mean, you were craftsmen. You weren't out to generate big production runs and economies of scale.

JS: Something that somebody says is impossible to do, that's the one we want. It just took longer. Like my dad said, you know, you've always got to remember, Edison wasn't very smart, because if he was smart, it wouldn't have taken him 5,000 times, experiments, to find out how to make that light bulb work. He said, heck, anybody can do that, you know.

TP: It's the 10 percent inspiration, 90 percent perspiration.

JS: And that's what it is. Like in Africa, we've got to do things in a hurry because somebody's life might be in danger. You're building, and as you're going you find out that's not going to work, so you change it. But today you can't do that.

TP: Harder and harder, yes.

JS: Because of companies now, there's lawsuits and all this here. We've modernized everybody, and it makes it a lot nicer.

TP: But there's a much greater fear of failure.

JS: That's right. And the companies are a lot larger and they cost you a lot more money.

TP: Well, it's been a pleasure talking to you. I think we can probably stop here. We could go on all afternoon talking about all the things you've been involved with, but it's really, really quite amazing.

JS: Well, I enjoyed it, and most of our people enjoyed it.

TP: Congratulations to you and your company and all the people who are part of it.

JS: Thank you.

[End of interview]