MMS OFFSHORE GULF OF MEXICO

ORAL HISTORY PROJECT

Interviewee: Craig King

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Interviewer: Jason Theriot

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Bio
Craig King was born and raised on the Texas City Ship Channel, where his father worked as a welder at a refinery. He graduated from the Texas A&M Merchant Marine Academy in Galveston in 2000 and went to work in the industry. He has traveled to most of the ports in the US and worked on a dredge boat in the Chesapeake Bay before coming back to Houston to work for G&H Towing Company. In 2003, he was assigned to work as a First Mate on the Harbor Tug *Shannon*, one of only 2 tugs working on the Houston Ship Channel that are equipped with new "Z-Drive" technology for assisting large tankers and LNG ships into port. He became a Houston Pilot in 2007.

Tape 1, Side 1

JT: This is an oral history interview with Craig King on August 7, 2006, by Jason Theriot. Craig King works on a tugboat. This is Craig King on the Port of Houston, tape one.

CK: Hello. My name is Craig King. I am from Texas City, Texas, born and raised, grew up around the petro oil and gas industry all my life, been around it since the day I was born. I also chose to work in the industry. I'm surrounded; I've spent half my life on a tugboat. I work for G&H Towing on the harbor tug *Shannon*, and that's pretty much the summation.

JT: Now, what does your dad do?

CK: My father was a police officer in Pasadena, Texas, which is also a petrochemical community.

JT: Now, did your stepfather raise you?

CK: Pretty much, since I was four.

JT: And he was in Texas City as well?

CK: And he worked at Union Carbide, which is now Dow Chemical, in Texas City.

JT: So he was around you your whole life.

CK: If you lived in Texas City, most likely one of your parents worked for a refinery. That's all that's there as far as opportunity for jobs.

JT: How far away was the ship channel from that chemical plant that your stepfather worked in?

CK: Right there. They had a terminal in Texas City. Texas City has tankers just as big as the ones that come into Houston, and he worked for Dow. Actually, they had more of a chemical base. They'd bring in the smaller chemical ships. But Amoco, now BP, were the ones that bring in the big, large crude carriers that brought in the raw oil.

JT: So what was his job?

CK: He started off as a maintenance guy at an early age, and worked his way up to a welder. He was a welder for the majority of his career there, and then retired as a supervisor/inspector. So he never really messed with the shipping part of it, but he was a fabricator.

JT: Growing up with a father who lived down there, did he often take that home with him? Did he talk about his days on the job?

CK: Not really. He was a welder, so I didn't know anything about the oil and gas industry growing up, until when I was older and started working with it. So he was a welder, he didn't have anything to do with the actual product that came in and out of the plant, so I wasn't exposed to much.

JT: But down on the coast, you guys probably had a lot of experience on the water, boats, fishing.

CK: I started working on the Texas City dike, which is the Texas City Ship Channel jetty. It's five miles long. It's the world's, quote, unquote, "largest fishing pier," because it's five miles long and you can drive on it, so you can fish on either side. But I grew up and then my first job was working on that dike out at a bay camp, so I would always see these ships and tugs and everything, barges coming up and down the channel, and that's when I first kind of got exposed to it all.

JT: Was that something, as a young guy, that you wanted to do? Did you see yourself in oil ships?

CK: I knew for a fact that I did not want to work inside of a chemical plant or a plant, because growing up around it I smelled it, and we grew up paranoid about chemical leaks and explosions, so I've always, you know, stamped it in my head that it was unsafe to work there. So I didn't want to have anything to do with that,

and then here I am. I'm still on the ship channel, which is just as close as working inside them. So, what was the question again?

JT: When did you decide that you wanted to be on ships?

CK: I ultimately wanted to be a pilot, probably at around fifteen or sixteen years old, when you're in high school and you're wanting to figure out what you're going to do, because you have to start making plans for college or whatever. I have some distant relatives that are pilots. My stepmother's two brothers and her father and uncle were all pilots, both in Houston and Galveston, and I saw their way of life. Back then they made a lot of money, and now they make about five times more than they did twenty years ago. It's crazy. But I didn't really care about the money. It was the two weeks on, their schedule. They're two weeks on, two weeks off.

Then when I started working out on the dike and I started seeing these ships come in, I was like, that's pretty neat. And I started watching these programs on TV about living on ships and working on ships, and then I found out that there's a maritime academy right around the corner in Galveston, so that's why I chose to do it. Ultimately to be the pilot, but, you know, you have to work your way up. You can't just graduate school and automatically be a pilot. You have to gain experience.

JT: So it was a love-hate relationship with the chemical plants and that way of life?

CK: Yes. Yes, and I still feel bad about contributing to the negatives that are involved with it. You know, there are negatives that are with our demand and own fossil fuels. I don't agree with it, and now I'm kind of indirectly involved with it.

JT: Interesting. So tell me about the maritime academy. What did you learn there?

CK: I learned a lot. I went to that school not knowing port and starboard, you know. I knew what the bow and the stern was. I remember crossing over the bridge the first day of indoctrination, and somebody had told me what port and starboard was, and I was like, "How does it—?" I couldn't remember. I had some weird way of remembering. But yes, from that, from not knowing anything about ships, to graduating and knowing how to successfully stand a bridge watch, and have some kind of control of a vessel, and in charge of people that two times older than me.

JT: Did they give you any hands-on experience with ships?

CK: Yes. We have our own ship, the *Texas Clipper*. It's a 400-foot, old, navy research ship. It was mainly for, they take soundings, or I don't know what exactly. It's supposedly top secret what they did when the ship was in service with the navy.

During the summers we'd take cruises, training cruises all around the world for three months, and you know, that's about as hands on as it gets. As an underclassman, your first cruise you're standing watch. You're out on the bridge wings, down on the bow, you know, looking out with your eyes and ears and reporting to the bridge, and also watching the upperclassmen do what they do, and then so the second cruise you're more of a navigator. You learn how to use the charts and the electronic navigation equipment on the bridge.

You learn how to do all that, and then you kind of look down on the sophomores and teach them what you're doing. And then your third cruise, your senior cruise, your final cruise you're the man in charge, and you're in charge of the whole bridge.

JT: It's a classroom on the water.

CK: Definitely a class. You spend three days on the bridge, on watch, and you do two four-hour watches, and then three days in the classroom where you're taking the same classes you would take at school, navigation classes, communication classes, all maritime-related classes, and then three days of maintenance, and you learn a lot there, too. That's all hands on, taking care of the ship, painting, chipping, all that kind of stuff.

JT: Swabbing the deck?

CK: Yes, swabbing the decks. That's all underclassmen stuff.

JT: What surprised you most about the maritime academy and what they taught you about on a ship, and working on a ship?

CK: I don't know. That's a hard question. Nothing really surprised me. I guess actually everything surprised me, because it was all a learning experience for me. I don't know. I didn't learn much about oil and gas, because it wasn't a tanker that we worked on, so we didn't—only thing I learned about oil and gas was in the classroom, and there was no actual hands on.

JT: Just basic stuff.

CK: Yes. Well, it's the basics, but it's all written down and in lectures and books. I don't learn well that way, and I wish we could have had a discharge station or something and we could have learned how to do that stuff.

JT: What about coming into that first port on one of your trips, what was that like?

CK: Let me think if I can remember that far back. Our first port was Sydney, Nova Scotia, and that was by accident because our ship broke down. We were on our way to Montreal and the ship broke down about 400 miles away from the St. Lawrence River entrance, which is probably due north of Sydney or Nova Scotia, so we had to get towed in by a big tug. So that was my first experience going into a port, and it's not a normal one, because you usually come in on your own power. But it was neat.

Sydney, Nova Scotia is really small town, and they don't get ships that have 300 eighteen, nineteen, twenty-year-old college American kids coming and just tearing up the town, so it was pretty interesting.

JT: Right. So when you graduate you become a third mate automatically?

CK: You graduate with a license that says you're a third officer of unlimited tonnage on the oceans, so you can work on any ship, any size, as a third officer.

JT: Now, what are some of the responsibilities of a third mate?

CK: They have to stand a watch, like I said. They're in charge of the watch for eight hours of the day, and then they rotate with the other mates, two other mates. And they're in charge of the safety equipment. Like when they're not on watch they're in charge of the safety things that are part of the ship, like lifeboats, maintaining lifeboats, maintaining the fire-fighting equipment and keeping track of it all, because it all has to be up to date.

It all has to be up to date and inspected, and made sure everything's in good working order, so that's what you do on your eight hours off. You do four hours on the bridge, and then four hours of that eight hours that you're supposed to be

resting or whatever, but you do, it's mainly safety that the third mate's in charge of.

JT: So when you graduate you've got a third mate's license. Do you have to go and interview with companies, or is it automatically assumed you'll get a job on a ship?

CK: No. I had a very hard time getting a job on a ship, because when I graduated you have to have what is called a PIC, or Person In Charge of cargo, a cargo discharge. That has to do with tankers, and I did not graduate with that, so my first idea of getting out of school, I wanted to work on a tanker but I was having a hard time because I did not have that PIC. So that's when I went and worked for G&H on the tugs. I worked there for almost a year.

Then I really wanted to get some time on a ship, so I went and worked on a cruise ship down in Port Aransas. It's a casino ship, and I got my third mate's time on that, and then a hopper dredge, which is a ship that looks just like a ship, but it actually has two vacuum cleaners. It goes down to the bottom and sucks off everything in its path, and fills the ship up, and then you take it offshore. And the whole ship—well, mine did—from the bow to the stern on the keel opens up like a clamshell, and just dumps everything out and closes back up, a continual process.

JT: How long were you on that ship for?

CK: A year and a half.

JT: Really. Still as a third mate?

CK: Yes. There are two third mates and then the captain, and that's it. Two third mates split the rotation, six hours on, six hours off, and the captain's there more for business purposes. He'll drive every now and then, but it wasn't really a third mate, second mate, chief mate like there is on normal ships. It's just like two mates, no matter what kind; you just had to have an unlimited license, and then the captain.

JT: What areas were you operating in?

CK: I started on the Southwest Pass, Mississippi River, and spent a majority of my time on the East Coast around Cape Henry, which is the entrance to Chesapeake Bay. You can either go to Baltimore or Virginia, Norfolk and Portsmouth, Virginia, and all that's a continuous dredging operation, just like Houston, just like the Mississippi River. I spent some time in Savannah, Georgia, Brunswick, Georgia. There's a couple other—that's all East Coast and Gulf Coast.

JT: So these ships, I'm trying to imagine. They must have these giant pumps that go down thirty feet?

CK: Yes, however far the depth is, and they're trying to target, you know, from thirty feet to thirty-five feet you dig until—we have all these instruments. It's like a video game, computers, everything in front of you, and this is actual Z-drives. A lot of them are; a lot of them are twin-screw ships.

JT: Explain the difference there, before we get into the matrix of the *Shannon*. The Z-drive technology and the single screws and twin screws, tell me about that.

CK: Okay. A single screw is one propeller and normally one rudder after the propeller. Twin screw is two propellers and two rudders on each propeller. I'll stick with the general stuff. Then the Z-drives are two propellers that rotate on an

azimuth 365 degrees. So imagine an outboard engine on a boat, on a regular, like a Hatteras or something, or not even that, like a tiller boat or a tiller motor. Imagine having two of them on each side that turns 365 degrees; the propellers are spinning, but there's no forward, there's no ahead bell, no astern bell.

There's no stopping, because if you want to stop the vessel you point the screws abreast, or abeam on a ninety-degree angle, and that stops the ship. It can't go forward or back. And if you want it to ahead, in the wheelhouse it's like a control stick that pivots 360 degrees, too, and whatever you want that engine to do, or that propeller, the Z-drive to do. So there's no throttles or a big wheel in the wheelhouse of a Z-drive. There's no wheel.

JT: What are the benefits of that?

CK: Maneuverability, huge maneuverability. You can walk the boat side to side. You can do all kinds of things that you cannot do on a—if we're talking about tugs now, on a Z-drive it's real important to have—I mean on a dredge it's real important to have Z-drives, because you're trying to maintain a position, kind of like dynamic positioning on these oil-rig ships that you have to stay put when there's outside forces moving you, like current or wind. Well, the Z-drive keeps you in a straight line, or pretty close to it.

They're just, maneuverability is the main advantage of a Z-drive. It's huge. It's like night and day when you compare it to a standard or a conventional-style ship, twin screw or single screw.

JT: Now, how many tug companies are on the Houston Ship Channel?

CK: Okay, this is tricky, because Houston, I think, is the only place that's like this. They have two tug companies that own tugs. That's all they do is own it, and

that's Bay Houston, and Suderman & Young. They, I guess you could call it—the company I work for is G&H Towing, and it's a subsidiary of those two companies. They kind of merged. They didn't merge, they stayed separate, but they somehow split the business. They don't compete. They pretty much try to make it fifty-fifty as much as possible. But those two companies pay G&H to operate and man and maintain the tugs, so I work for G&H.

So if you're asking how many tug companies, harbor tug companies that do the ship assist in Houston, it's two, and one operator. But most other ports, like New Orleans has about four or five different companies, and they own and operate the tugs.

JT: Interesting.

CK: Yes. It's different, for some reason. The main reason I think Houston's this way is because the two owners are families of other businesses. You know, one family is nothing but lawyers, and the other has a saw mill that makes mulch up in East Texas or whatever, and the tugs are just another investment for them. They don't want to deal with all the maintaining, they just want to, you know, they're making profit and they just want to make the money, instead of having to deal with the maintaining of a tug, because that's a lot of overhead. So they kind of contract G&H out, or subsidize G&H for that.

JT: So give me an estimate of about how many, and I realize there are different sizes, but about how many tugs are operating on a given day on the ship channel.

CK: Are you talking about harbor tugs that do ship assist only, or are you talking about barges and—

JT: Right, harbor tugs.

CK: Harbor tugs, probably about between fifteen and eighteen, and that's, well, in Houston probably about twelve to fifteen, and then they'll have a few in Texas City and Galveston. But the majority of them, you'll hardly ever see the Z-drives down in Galveston and Texas City, because they're in more of a demand up in Houston.

JT: So you all do have a few Z-drives?

CK: We have three.

JT: This is a new technology, right?

CK: Yes. We have three, and two are being built right now, as we speak, and they're top of the line. There's only two other ones like them in the world, and they're really top notch. They make the ones that we have now look like Tonka toys.

JT: Well, tell me about the *Shannon*. What is its makeup, what is its dimensions?

CK: Dimensions, it's ninety-four feet long, I want to say twenty-two feet wide, or eighteen feet wide, I'm not sure; 5100 horsepower, Z-drives. It does have Z-drives.

JT: Now, at 5100, is that on the larger side of the harbor tugs?

CK: Yes, that's the largest horsepower tug we have. The other two Z-drives are the two other strongest tugs, and they're right around 47[00], 4800.

JT: So where was your ship built?

CK: In Houma, Louisiana, Main Iron Works.

JT: And it came with the Z-drive built in?

CK: Yes, yes. It was built for Z-drives, because it calls for a whole different make of the tug. They have to build around the Z-drives.

JT: So you were one of the first mariners to experience this new tug technology, or work with it.

CK: Yes, I was.

JT: Now, was that just by luck, or did your company maybe see certain qualities in you that demanded that technology?

CK: Well, I told them, when I came back from the dredges I told them that I had Z-drive experience. I knew the basics, but as far as working on a tug I would have to learn that. There were a few guys that had trained on other Z-drives in other ports that taught me how to do the actual tug drive or ship assist, and I've been told that I was their fastest person to learn, just because I had the Z-drive experience before. I have a clean record, have never damaged any tugs, and a good reputation, and yes, they picked me, and there's only a few of us that know how to do this.

JT: So you've been on the *Shannon* for...

CK: Since we got it, since October of 2004. They built it—

JT: Same crew?

CK: No. I'm pretty much the only one left. The other crewmembers have moved on to other tugs. You very seldom keep the same crew for a long time, just because people are moving up or retiring, or making the pilots.

JT: So now you're a first mate?

CK: First mate. There's a captain and a first mate. We also call us quartermasters. It just depends on who you're talking to and where you're writing it down. I consider myself quartermaster or first mate.

JT: And what are the differences in responsibilities? Obviously, you're piloting the vessel.

CK: Yes. That's it. Captain has the overall responsibility of the vessel and the crew.

JT: Is there a maximum tonnage that you can operate?

CK: As far as being a captain of a vessel, the maximum tonnage I can use is 1600 tons, 1,600 tons, the maximum tonnage vessel I can work on as a captain. As a mate—and then anything above 1600 tons is considered unlimited tonnage, which are the ships. Most ships are above 1600 tons. That dredge I worked on was four-thousand-something tons, and most of the ships that you see, the ones that are hauling the crude oil and everything, those are in the hundreds of thousands of tons.

JT: And you guys are right alongside them.

CK: Yes.

JT: So you got to the ship channel, the Houston Ship Channel, in 2004?

CK: I started in 2000. I graduated from the academy in 2000, and I started at G&H and I worked there for about six months, and then I moved on and went and did all the other stuff, and then came back in 2003, September of 2003, and I've been there ever since.

JT: So the first, with G&H you were on the channel?

CK: Yes.

JT: Did you see much change from the three years you were gone?

CK: Yes, a lot, a lot of change.

JT: What changed?

CK: The business, the ships coming in and out. I mean, people say that it's not different, but to me it feels like it, maybe because I'm on the Z-drive and we're highly requested, but we're always running. We're busy, busy, busy, 24/7. When I first started out there I was on a smaller tug that wasn't demanded as much, and maybe that's what it is, but I also notice that there's more business in the Port of Houston, because in 2000 when I started they had just started the whole deepening and widening of the channel.

When I came back it was almost finished, and it just finished right around when the *Shannon* came, you know, a couple of years ago. So as soon as that widening and deepening was finished, here come the bigger ships, and the bigger ships before the deepening and the widening were coming in, but not loaded as much, you know, maybe three or four feet lighter than they can now. So they were coming it at thirty-five, thirty-six feet; now they're coming in at forty-two, forty-

three feet. And that attracts the business, so now they're getting a lot of big ships coming into Houston, and those are mostly tankers.

JT: So tankers carrying crude, petroleum products?

CK: Mostly crude. The big ones are carrying crude, and then the petroleum and then the product carriers are a little bit smaller, don't know why. I just know because crude, everything, all those products and everything come from crude. Crude is the base and that's what most of the refineries need to refine whatever they make, whatever chemicals or gasoline, whatever they make out of the byproducts of the oil.

JT: So these tankers, are they lighters?

CK: Yes, mostly are lighters. They have tankers come in categories according to their size. I don't know if anybody has told you about the VLCC, ULCC, that VLCC is Very Large Crude Carrier, and that's what we have. We can get those, and those are the lightering ships that come into Shell refinery and Exxon Bay Town, and a couple of the refineries in Texas City, BP.

Those are the VLCCs, and they're about a thousand feet long, and I couldn't tell you how many barrels of oil they carry. I'm sure you can find that out, though. And those are considered lightering, because they come in and you'd think that they would be going to wherever they came from, another country to get oil, but they're back the next week. There's a couple of ships and you know that those are lightering ships, because they're coming—and they're foreign ships, so they're not going to another American port. They're going offshore about eighty miles or wherever they're lightering uniform is, and then they come back. It's these huge ships that come, you know, back and forth. About every week they'll come in and out.

JT: These are not American ships?

CK: No. You don't have to have an American ship for lightering, because it's offshore. I wish that was the case. You'd have a lot of American ships still in operation.

JT: You'd need more pilots.

CK: Well, the pilots go on the foreign ships, too. The pilots, that's why they are pilots, because these foreign ships have foreign crews, and they don't have any idea of where they're going, so that's why they hire the pilots to come on. They're more of a consultant than anything. They don't actually drive the ship. They go up there and they don't take charge. The captain still has charge of the ship, regardless, and if the captain doesn't like what the pilot's doing, the captain can override the pilot, tell him, "Take a seat. I've got this." But most of the time that doesn't happen.

So the pilot thing, that doesn't matter, and the tugs, that doesn't matter. Most of the ships that come into Houston are foreign. I'd probably say 80 percent are foreign, and the rest are American. There's no American VLCCs that come in that I know of. I might be wrong, but most of them are foreign-flagged ships.

JT: Wow. What role does the tug industry play on the Houston Ship Channel?

CK: A huge role, because ships cannot maneuver when they get to slower speeds, without tugs, and they can't dock on their own without tugs. They can't come off the dock or sail without tugs. Without tugs their ships would be helpless.

JT: Can those big ships make the turns like around the turning basin?

CK: You have to do that with tugs. The tugs actually turn the ship around in the turning basin. You'll have a tug on the bow and a tug on the stern, or the quarter of the ship, and twist them right around. A ship couldn't do that, especially the big ones. They couldn't do that own their own.

And then Exxon, these big, you know, 800-, 900-foot ships have to back in. They have to stop and then back into a slip, and there's a lot of that going in oil tanking. You'll probably hear about oil tanking. It's another terminal that gets the big ships. And Houston Fuel Oil, all these ships, they're all these terminals are in a slip where you have to stop the ship and back in, impossible without tugs. Some of them take even four tugs. The Bay Town jobs will use—most of the jobs are two tugs, but when the big, deep ships come into Bay Town they use three or four tugs.

JT: So run me through a typical day on the channel, once you board your ship after a few days off.

CK: On the tug? It's the same. There's not really a day, and everything runs in together. It's a twenty-four-hour, seven-day-a-week operation that never stops unless there's some kind of outside force stopping it. Could be a dredging project sometimes temporarily stops it, but usually you don't know, it doesn't matter if it's night or day. So if you're asking me to explain a day, it's not. It's, explain the four days that I'm on there, and it all runs together.

My tug is the only tug that I think where myself and the captain actually split up the time on the wheel. Most of the other tugs are, the captain will do most of the driving, and then when he's tired or when he doesn't want to drive, the mate or the quartermaster will do the driving, and that's usually at night so the captain can sleep.

But my crew, the crew that I work with, my captain and I split six hours on, six hours off, and then anything from six in the morning to twelve in the afternoon he does it, and then I come on at twelve to six in the evening, and I'll do any job that lies in that timeframe, and so on. That makes me drive from midnight to six in the morning.

JT: Where does the boat pick you up at when you start?

CK: Wherever the boat is. When you're on your way to work you call the dispatchers, just like a police dispatcher or any other dispatcher out there, and they tell you where your boat is or what it's doing. Usually it's on a job, and you go—on the Houston Ship Channel, once you get past Lynchburg ferries by the battleship *Texas* and all that—if you take a tour you'll know what I'm talking about—there's only two places on the whole ship channel that we can catch the boat for a crew change, and that's Jacinta Port or City Docks.

If you're concerned about security, port security in 9/11 and how that affected, that affected us in that way because we used to be able to crew change pretty much anywhere up and down the ship channel. But now that security's kind of tightened up, there's only a couple of terminals that let us foreigners come in, that aren't employees or, you know, we don't have all access anymore to the port. There's only two places.

So if your tug is on a job while your designated crew change—ours is nine-thirty in the morning—if he's on a job we have to sit there and wait for him at the dock. And then hopefully he comes after that job, which hardly ever happens. It's so busy that you're waiting on the dock sometimes for two, three, four hours, waiting for the tug to finish jobs.

JT: And do you have to go through a security search?

CK: Yes. Just the other day for the first time I had to get out of my truck and have the security guard go in my truck, in my bags and open up everything, and ask for my driver's license, not social security number, but driver's license number, and that's the first time. But usually every place you go, you have to have some sort of Port of Houston ID. I have a Port of Houston ID on my briefcase, and that pretty much gets me into the terminals that I need to go to.

JT: And this is all post-9/11?

CK: Post-9/11. Before, all we had to have was a company ID badge, nothing to the Port of Houston. I had a company ID that said G&H Towing and my picture. It's the same thing, but that doesn't work anymore. You have to have this to get in.

JT: And then so onboard the *Shannon*, make yourself at home for four days and you head off back to work?

CK: Yes, and it's balls to the wall, pardon my French, for four days. And it's sleep deprivation to the maximum, to the maximum. It's up-and-down sleep. You're on a loud tug. Nothing ever shuts down. If your main engine is shut down, your generators are running, so you have to learn to adapt to sleep when you can, whether it's two hours or four hours, but nothing ever over four hours of sleep for four days.

JT: And where do you get the calls, is that from the dispatcher as well?

CK: We have a company radio set connected to a beeper, and whenever they need our boat they'll beep our boat and we'll answer the radio, and they'll give us the job, and we'll report to the job, either sailing or docking a ship.

JT: And then when you come alongside it, is there any exchange of ropes or anything?

CK: Yes. You have to pass up lines to the ship's crew. My boat has a winch on the bow that the rope's connected to. Most tugs are just lines that are laid out on deck, and you send them up and then you tie them off on what we call H-bits. They're big bits, big steel bits that you wrap them up on. Most of our tugs use two of those lines, but our tug is different. We have a winch and we can heave and pay out line as much as we need.

JT: Now, will your job start in Galveston Bay at a certain depth or a certain part of the channel? Where do your jobs typically begin?

CK: Okay. It depends on where the ship's going. Say, we'll stick with the oil-and-gas ships, the big ships. Say we have a job going to Exxon Bay Town, and if you have a chart of the channel I'll tell you what I'm talking about.

[Tape recorder turned off.]

CK: Okay. Looking at this little diagram here, I mentioned something about oil tanking a while ago, and Houston Fuel Oil. These are all—this is the slip that I'm talking about. And here oil tanking, there's usually—imagine this land cut out, and finger piers, and there's six of them or four of them. Anyways, they all use Houston Fuel Oil.

We tie up here, our tugs. We hang out there when we're in between jobs. They'll call us out, and the ships come in from here, and this is a distance of about a mile. We'll wait on them right here, right at Lynchburg Ferry area. If you just kept on

going, this would be Lynchburg Ferry. It's cut off here. That doesn't count, so it wouldn't be able to do that.

I could use Exxon. We'll just stick with this. So about a mile. So the ship's coming in on his own power, no tugs, unless it's a really deep ship. Then they'll use our tug as an escort tug, and what we do is we get behind it and put our line up on the stern of the ship, and put about 150-foot of line out behind him and just tail behind him, and if he needs us in any kind of way, the Z-drives are the only ones that can do that.

If we're not escorting him, we'll get on the ship about a mile away from the dock, and he slows down, slows down, slows down to about a knot and a half, two knots, and he comes to a stop, and if he's going into Houston Fuel he usually goes bow in, or we call it head up, and we'll turn him, you know, pivot him right here, because he's not moving. We'll pivot him and then he'll go up into the dock, and we help him on dock.

And so he's loaded, and then when he's light, after he's discharged we'll sail him, and he has to back out. It's the same thing. We back him out and then we pivot him.

JT: So y'all stay with him the whole time.

CK: No, no. We stay with him from he's about a mile and a half away from the dock. We dock him, and once he's all secure, once he's all tied up we leave and we go to the next job. If we had to stay with him that would be impossible, because we'd have to have about fifty more tugs to keep, if we had to stay with him. Sometimes we do. For some reason they need a holding tug, but that's a different story.

JT: I would imagine that there's different rates for the different types of jobs that you do, like versus escorting, versus turning?

CK: Yes, but as far as a basic docking or a basic sailing it's the same rate, I think. I'm not too keen on the business part. I wish I was, but I think it's the same rate no matter what tug you're using, you know, to keep it easy, because if you try to get real finite with it, it would get really confusing. I think it's a flat rate for sailing, a flat rate for docking, and then if you're on the ship for a length of time then they'll charge you extra for that length of time. Mainly it's a flat rate, I think.

JT: If a shipping company, like let's say if an Exxon ship was coming in, it would be the Exxon ship that would pay G&H Towing?

CK: They would pay the Bay Houston, the owners. G&H doesn't get any of that. Bay Houston, the owners pay G&H a percentage, I believe, but as far as directly getting money from the shipping companies, no. I don't think G&H gets that.

But other places, everywhere else in the nation that has owner-operator tugs, you know, yes, the shipping companies award contracts to the different tug companies, and it's like any other bidding process. The tug companies go out and they try to get the business from the shipping companies, and they have bidding wars, and then whoever the shipping company awards the contract to has it until something changes.

JT: So with 700 transits per day, what are the dangers that plague the tug industry and the ships operating on the Houston Ship Channel?

CK: The tug industry, not so much the harbor tugs, although we've had incidences in the past where ships and tugs collide, but it's been human error, mainly due to human error, or fog. But as far as the towing barges, or the push boats and ships

interacting on the Houston Ship Channel, they don't call it "Dysfunction Junction" for nothing.

I still, I mean, I've been there for six years and I'm still amazed that more things don't go wrong. It takes a highly, highly trained professional to do what these guys do, even as far as I'm talking about the push boats, everybody involved, because it's a ditch, literally, that they dug out, or a bayou that they dug out, and it's very, very narrow, and they bring these big kinds of ships, you know, and tight turns, tight squeezes.

I mean, this is really, this is a sketch, this is not any kind of detail at all, but there are really tight spots in the Houston Ship Channels where no ships can meet, you know. They've just got to time it. And then there's always, at least once a watch, once every four days I'm on the boat there's always some kind of tight quarters situation where I'm thinking something's got to happen, and then they make it. It's unbelievable. I'm still amazed on how—

JT: Do you think it's practice? Do you think it's training? What do you think accounts for the lack of major accidents on a frequent basis?

CK: Seriously, it's luck, and, of course, training, but you've got to have a lot of communication skills, you know, on the radio, and instinct is probably number one. You've got to have kind of like the force in *Star Wars*. You kind of have to have, definitely have to think about five or six steps ahead of where you're at right now, and what's going to be happening when you're meeting this other ship or tow, mainly instinct.

And then you have the set of rules that we all follow, and it's actually rules written up by the Department of Transportation. They're called rules of the road, and you're supposed to follow those, but if you followed them sometimes they'd

probably get you more in trouble. It's more of, it's definitely instinct and knowledge, local knowledge and communication.

JT: And local knowledge is probably key.

Tape 2, Side 1

JT: This is tape two with Craig King, oral history for the Port of Houston by Jason Theriot, August 7th, 2006.

Local knowledge is something that I'm sure is very important along the ship channel.

CK: Yes.

JT: And you being a country boy from just down the docks in Texas City, I'm sure you had your fair sure of experience.

CK: Yes, but mostly the local knowledge comes from working on the tugs.

JT: Knowing where the sandbars are.

CK: You know exactly, you know, well, you spend half your life on the channel, so you'd better know it. They have guys that, if we're talking about pilots still, they usually take on two at a time, and one will come from our tugs, and one will come from ships that usually come in and out of Houston, but not always the case.

But I think the main reason why they pick the tugboat guys is because of the local knowledge part, and the ship handling part when it comes to dealing with tugs, because that can be taught, but to hire somebody that already knows it is a big

plus, and then vice versa. We don't know much about ship handling, and we don't know much about dealing with what goes on on a ship, so the guys coming from ships know that.

So it's a good exchange, and I'm glad they keep it that way, because they could easily say, "You can only come from ships. We're only going to take on guys from ships that have the shipboard experience," and then those guys would come in and not know anything about the Port of Houston, not know the local knowledge. They work together and teach each other, I think, I hope, and it's a good, happy medium.

JT: It seems like a partnership between the tugs and the pilots are really the two entities that make ship travel possible.

CK: Definitely, yes.

JT: Well, let's talk about, along the same lines, the vessel traffic system. I really haven't touched much on that with many folks. What do you know about that as an operation?

CK: It's just like an air traffic controller. They have a radio in one hand and a big computer screen or a big monitor, and they have tracking systems on these ships now that are satellite guided by GPS. You can look up on the screen, and this ship over here, you know, an inbound ship, if he wants to know what is going on five miles ahead of him he calls a dispatcher or VTS, they call it Vessel Traffic System, and VTS will let him know. It's just like they're an air traffic controller, but on the water.

JT: Do you guys have any monitors on your tug?

CK: Yes. They're called AIS; don't ask me what that stands for. I used to know, but AIS is a little box that you have in your wheelhouse, and all the ships, all the tugs have them. It's a screen and it gives you a list of all the vessels that are in operation in your immediate area, whether they're underway or moored, tied up, how fast they're going, what bearing they are away from you, so that is a big plus.

I mean, all of this comes into effect when it's poor visibility, and fog and heavy rain or dust or whatever, but mainly fog, and that only happens usually during the spring and the fall, and usually they shut the channel down, because it's too dangerous for an inbound and outbound ship to meet in the fog, because the Houston Ship Channel is so narrow still, even though they've widened it and deepened it. It's still too risky.

JT: Can any of that be improved?

CK: No, I don't think so, because what they've done with the VTS systems is pretty much top of the line, and now the pilots have laptop computers that have the same program, I think, that the VTS people have, so all he has to do is tune in his—they have the little laptop briefcase and they have a little antenna that they set up out on the bridge wing, and the computer screen tells them what lies ahead of them.

You also have radar, and now they're even coming up with night vision, and you can look at this night-vision monitor, and it's just like what you see on TV. That's going to be really nice. But, I mean, I'm sure they'll come up with more technology and better ways to handle this, but right now, as far as technology goes it's at its top.

But the one thing they could do to reduce the chances of the ships—and the barges is the main problem on the ship channel. It's not the ships, it's the barges. You're in this 600-foot-wide ship channel, and you're having ships and barges,

you know, and some of these barges are three, four barges long, and they're just as long as the ships. And the ships that are loaded can only stay in the middle, so it gets pretty tight sometimes, and that's what I was talking about when I'm amazed that not more things can happen.

And if I were to be king of Houston Ship Channel, I would kind of divide them, segregate them, maybe put the barges, the tows we call them, on the outside of the channel. It's not deep enough for them, but if we were to ever make a separate channel for them, that would be really nice. It'll never happen, but as far as, you know, our human ability to change things, that would be a good way. But as far as technology goes, everything's pretty much up to par.

JT: That's like on a highway system, you know. Larger trucks keep to the right.

CK: And they're not allowed in the left-hand lane?

JT: Yes. The same thing with the tractors or—

CK: Slower.

JT: —slower vehicles, yes. You're saying that everything is just kind of mixed in together. You can have a giant lightering tanker followed behind by a small ship, followed behind by a barge that's ten barges long.

CK: Yes. And then to have the same thing meeting it—

JT: In reverse.

CK: —meeting them, and then all of that happening in a bend of a channel, you know. I wish I had cameras sometimes when I'd be at Exxon right here. This is a big

bend that I'm talking about, and Exxon refinery is here, and you'll have a lot of barge traffic coming in and out of Exxon, and for some reason just a lot of traffic right here. You'll have an inbound ship slowing down, and then you'll have another inbound ship behind him, an outbound ship coming right here, and outbound tows and inbound tows all converging right here and meeting, and somehow, you know, by radio, they've got to have radio and the instinct, everything I mentioned earlier to make it happen.

I'm still amazed by it, and I'm anxious to actually become a part of that, because right now I'm on a little bitty tugboat, and that's very maneuverable and can get out of anything.

JT: And I'll bet you that turning basin is pretty hairy.

CK: There's several turning basins on the Houston channel.

JT: When they say *the* turning basin, what are they referring to?

CK: I would say the very top of the ship channel, right up here, the very end of it. We call it the top. These are all city docks. They're called wharves; we call them city docks, and there's just a whole array of different kinds of ships. We have naval reserve ships that are tied up here, and then just any kind of ship other than tankers, deep-loaded tankers will come up here, and it's not really—you say it's hairy but it's not. It's pretty quiet up there.

When you're on the tug you like to spend time up there, because it's not as busy. But our tug never spends time there, because we're doing the big ships.

JT: Z-drive.

CK: Yes, the container ships and the big, loaded, escort jobs.

JT: What's a tractor tug, what is that?

CK: It's a Z-drive. It'd be easier if I drew it out for you. But imagine, you've got to just turn everything around in your mind, because the drives, the propellers are actually on what the relative bow would be of the boat, and you would be working from the stern. For some reason, that's a true tractor. They call most Z-drives tractor tugs, but the true definition of a tractor tug is what I just said. It's confusing, and it's a whole other ballgame.

JT: It has everything to do with horse power?

CK: I don't know what it—I think it's more the bollard pull, which is the actually braking force that you have on a ship. I think it has more to do with that, for some reason. I'm not sure. I don't know why they would do it. And if you're working from the relative stern of the ship, usually the house of a tug is towards the bow. But if you're working from all this area, you can get into some nasty, we call them rakes on the ship, the parts of the ship that get real skinny. I'd have to draw this out, but you can get into more places because you won't damage the wheelhouse.

But my tug is not a tractor tug. They call it tractor tug, but technically it's not. We have one tractor tug and it's down in Corpus. It's called the *William N.*, so that's different. I mean, you can just refer to Z-drives as tractor tugs, and people won't look at you funny. It's the same thing, but technically they're not. But they are Z-drives.

JT: What are your thoughts on the Jones Act? What do you know about it?

CK: I know that if they didn't pass the Jones Act that I probably wouldn't have had a job, you know. All American shipping would have gone down the drain, and we're lucky to have what we have. Otherwise we'd be, you know, I wouldn't be working. I'd probably have a tugboat. Now actually they could have foreign tugs, too, coming if they wanted to.

But in the definition, or just a broad view of the Jones Act was—it's hard to explain. It's a very long story. It'd probably take forty-five minutes. But in general, if an American ship loads in an American port and goes to another American port, well, if a ship loads into an American port and goes to another American port with any kind of cargo, it has to be American crewed and American flagged.

If the Jones Act wasn't in effect, then an American oil company can hire or outsource, like everybody else does, a foreign flagship, foreign flagged crew, for a fraction of how much it costs the American ship. And coming from the business side you would want that, because it's a lot cheaper and less overhead. So I think the companies realized that before the Jones Act, and started to do that, and I think Congress stepped in and applied the Jones Act.

But in general, that's what it is. If any kind of cargo is shipped from one American port to the other, it has to be American flagged and American crewed, and also, any of those ships have to be made in America in an American shipyard. So if you have an American ship, it can't be made in Tokyo or Korea, where they make ships a lot better than ours, and faster, because they're just way ahead of us in all that. But that's what the Jones Act did. It saved the American Merchant Marine and American shipping.

JT: Is this something that is a constant battle in Congress, with big businesses?

CK: I don't know. I don't think so. I think, I've never felt threatened by losing the American fleet or my job from going foreign, so I think it's a pretty done deal. It's an act that I don't think they'll ever, hopefully they'll never amend.

JT: Now, I know that you've had stories passed down to you about some of the old-school tuggers and pilots. How has tugging and piloting changed over the years, from stories that were passed down to you?

CK: I mean, I could tell you crazy stories. Back before in the seventies and early eighties, the lifestyle on the tugs was completely different than it is now. There was a lot less time working, and a lot more time hanging out, and that's when they could drink beer and do drugs, and that was a big part of it. It was a very liberal job.

But that changed after *Exxon Valdez* and after all, you know, the Coast Guard came into the picture and everything, so it's a lot more strict now. We're randomly drug tested, and we're highly trained, and a lot more accidents happened back then, too. As crazy as it is now, there's not as many accidents, because now we're more alert, and we're not under the influence.

But the difference in technology in tugs and ships, just like I said, a long time ago they had single-screw tugs. I mean, they still build single-screw tugs. Our company has—I think they stopped doing that in the early eighties, but we still have them. We still have these old, fifty-year-old single-screw tugs. We used to have even older ones, and they're not maneuverable. That's like driving a ship almost. That's what they say, if you can drive one of these old, single-screw tugs you can drive a ship, but I was unfortunate not to be able to work on one of those, because they got rid of them right when I got there.

And then the ships are the same thing. They're building ships with bow thrusters now, and stern thrusters, which are the same thing as tugs. There are propellers on the sides of the ships that'll move them, you know, laterally, and they have them on the bow and the stern. If they have that they won't charge a tug. You know, they won't use a tug on a bow if they have a bow thrust, and that takes away from tug business, but not enough yet.

But I can see in the future, the more advanced these ships get, that they'll build stronger and better bow thrusters. Some of these cruise ships have three on each side, or three on each end, you know, the heavier end on the stern, because of the machinery and everything.

JT: So they're on the cruise ships, you say?

CK: No, they have them on all the ships. Not every ship, but every type of ship. Not every ship has a bow thruster, but more and more ships today, if you're building a ship, chances are you're putting a bow thruster on there, or a stern thruster, or both.

JT: So we could see in the next fifty-plus years, ships having the capability of moving—

CK: By themselves.

JT: —360 degrees without a tug's help.

CK: Yes. But I don't think it'll ever come to that. I think it'll always be a need for tugs, because they can't build bow thrusters that are stronger than the tugs, that are more maneuverable than the tugs. The tugs can move the ship forward and

aft, too, and they'll always need tugs. But I can start seeing, like the single-screw tugs and the older tugs being phased out in the future.

JT: So who are some of the guys that you've looked up to, if anyone, whether they're guys that you read about, maybe some early pioneers or pilots?

CK: I'm a younger guy, I'm a youngster.

JT: Do these guys have sort of their own methods or their own style [unclear]?

CK: Definitely, definitely, each pilot. If you're talking about pilots again, each pilot has their own style, no are the same. The older pilots are, you know, a lot of the pilots, the ones that I looked up like you asked me, my step-uncles, they're really old school. You know, they've been there for twenty-five, thirty years, and he doesn't even know how to use Z-drive. I'm not going to mention any names, but if he has us on a job he puts us and he uses us like a normal tug, whereas the younger pilots that have been out, you know, been there for about five or six years.

Like Captain [Bob] Webbon, he gets real excited when the Z-drive is available, and he uses us to all of our capability. I specifically remember a time when he used us for a maneuverability that we hardly ever do, but we can do, and it's nice to get those every now and then.

JT: So why is the Houston Ship Channel so unique?

CK: Because, as I said earlier, it's a virtual ditch. We call it a ditch. If it's a bayou it's very, very narrow. If you go to other ports in the United States, other than Mississippi River, those are another set of gifted ship handlers because now you're dealing with the current. Houston doesn't really have much current.

But most ports are wide open. You know, you don't have to worry about interacting with the meeting a ship or a tow. I mean, you can, you know, thousands of feet wide. If you go to most ports, they don't have slips like the Houston Ship Channel has. The big thing about Houston—and you have the numbers I saw earlier—they lead the nation, I think maybe the world in oil and gas in tonnage, liquid bulk cargo, so that's their big niche. But they do everything. They have container terminals. They're building a brand new terminal right now as we speak, should be online in the next couple of months.

And they're expanding. They're probably the fastest-growing ship channel or port in the nation, because a lot of these ports are already full to their maximum on the space that the water allows them to have, you know, the shorelines. I've worked on the West Coast, on the East Coast, and on the Gulf Coast, and I mean, the Mississippi River is right there along with Houston.

Actually, once you get up to the docking part of the Mississippi River it's really wide, too, up by New Orleans and on up to Baton Rouge. But Houston is really tight-quartered, and there's all kinds of things going on. It's the zoo, it really is, and that's what distinguishes it from other ports, because other ports aren't near as busy, and mostly the thing that distinguishes Houston is the traffic, just like auto traffic.

JT: Well, let me ask you this. Let's think about it this way. If you've got Galveston as a natural port, that giant bay, a perfect opportunity to become a world leader in ports. Look down the road at Beaumont or Port Arthur, where they've got a huge chemical, petrochemical industry there. They, too, could have emerged as the leading port in the Gulf of Mexico.

CK: Why Houston?

JT: Why the Houston? If these guys have to drive up sixty miles through the ditch, as you say, why did Houston become this Mecca of petrochemical maritime seaport industry, the largest in the Western Hemisphere?

CK: I don't know. I can compare Houston to Galveston and Texas City, because Texas City is privately owned by the railroad, and so they're limited to—you know, it's up to the railroad whether something goes up. But Houston is owned by the City of Houston, right? I think, and there's no limits. If you're rich enough to buy land on the port or alongside the channel, and that's what happened. I think maybe the accessibility that Houston has.

I'm not sure about Beaumont, Port Arthur. I think those are natural channels, too, as far as the depth goes, but maybe they can't bring in the deeper ships. It's just because Houston's a major city in the United States, too, and there's a lot of cargo and need and demand for everything in Houston. A lot of the stuff that comes into Houston, I'm thinking, doesn't even leave Houston.

It takes a lot of things to run Houston, and it's got north and south, east and west capabilities, whereas I think Beaumont would be just east and west, right, I-10, as far as trucking and railroad goes. Houston has got 45 north and south, and 59 and I-10, you know, it's more centralized, where it branches out. I think maybe that's why it sticks out.

And to me there's no regulations. I think like there's no way on the West Coast you could have what Houston has. It's much more, the environment comes into play a lot more on the West Coast, as far as emissions. You know, all these plants have cooling water, like we were talking about earlier, and they all dump their cooling water back into the channel. It's supposedly clean water, but just the thought of that in California—and they have refineries in California, but they're

not on the water, they're inland. I don't know how they function, but they're all inland, and then they pipe everything to the ships.

JT: And it's a fear of environmental destruction to marine life?

CK: In California, yes. But I enjoyed working in California, because I didn't feel like I was in an armpit, because that's how it is. I mean, you smell everything, every chemical, everything that comes out. You smell it in the water. You cannot see two inches into the water; it's like chocolate milk all the time.

JT: In the ship channel?

CK: Yes. And it's the drainage ditch for Houston. All of the bayous and drainage ditches that people have made throughout the years, all that ends up in the turning basin. And up and down the Houston Ship Channel, all these bayous that you see—

JT: Sims Bayou?

CK: —Sims Bayou, Green's Bayou, and then up there, this is Buffalo Bayou that goes all the way up to downtown Houston, and all the drainage ditches that you see all end up. So when it rains hard it's really nasty. All the rainwater picks up trash and everything that's been in the ditches, and it all ends up in the Houston Ship Channel, tree branches, tree trunks, everything you could think of that floats.

JT: Did it make an effort to clean that up?

CK: A very small effort, not enough I don't think. And it doesn't make it all the way out. All this trash I'm talking to you about doesn't make it all the way out to the actual Galveston Bay. It stays pretty centralized into the major, you know, where

all the docks and plants are up in the upper part of the channel. For some reason, I guess with maybe the tides, they all end up in these slips and everything. I mean, somehow they don't make their way out there.

All this nasty rainwater makes it out there, but the trash doesn't. I don't know how, but they do have this small little boat that goes up and down the channel with a little basket on it that collects all this floating debris, but there's no way they could keep up with it. It's pretty disgusting. And if you take a trip on the tour boat, the *Sam Houston*, it's up there, it's right here, launches at City Docks, and it'll take you all the way down to probably where this Washburn Tunnel is, and then turn around and go back, and that's the nastiest part of the Houston Ship Channel.

I don't understand why they give tours of it, because you don't see all the refineries, but you see all the junk that's in the water, that's trapped up here in the upper part of the ship channel. It's pretty disgusting. You don't see that in California. You can actually see about five or six feet below the surface in California.

JT: So it's certainly something that they could improve on.

CK: Yes, definitely. But they don't.

JT: Too busy keeping track of all the zoo animals.

CK: Exactly.

JT: Let's talk about the LNG business. You had mentioned that to me earlier as the next wave of deep-water oil and gas. Ships are getting bigger, rigs are—

CK: The demand for LNG ships in itself is huge.

JT: Explain to me what LNG is, and how that functions.

CK: Well, I'm not an expert, but coming from a tugboater, I know it stands for Liquid Nitrogen Gas. I know it's highly volatile and it takes a lot of tender, loving care to transport it, and to ship it. It's transported as a liquid at a very low temperature, but the ignition point is very low, so if it ever gets to a point it'll explode, and when it explodes it's like, nitrogen is a big-time, it's very volatile.

So when it comes to burning as a fuel, compared to gasoline or oil—and I think it's a byproduct of the drilling process—it burns a lot more efficiently, and it's almost unlimited. It's a gas, so it's lighter. They've just got to find ways to contain it and burn it in cars or whatever, and that's the next, you know, that's the future, not to become so reliant on gasoline and oil.

So if you look on every magazine that I get—I wish I had some here—this professional mariners, and they're always mentioning LNG. It's the wave of the future, just like containers were to bulk load. You know, they used to load different things on ships on pallets, and just stack it up in the ship. Now it's all containerized, and you can actually load liquid, bulk liquid cargo in containers, too, so it's the same thing.

But once they get it—and now they're just now figuring out how to ship it. It's been around for a while, but the demand for LNG is becoming more and more now, with the oil crisis that we're going through now. So every country, every market is trying to dip their toes into LNG, and these ships are being built and they're really big, and like I said, everybody's trying to get involved in it.

So if you read about it you'll know what I'm saying, and it's something that Houston can probably handle. I know Freeport has one that in a matter of months it will be running, their terminal, and I know Calcasieu River has one, and they have proposed terminals in Corpus Christi area. I'm surprised that Houston—they've even had a proposal in Galveston on the Pelican Island side of the channel. I don't know if that passed or not. But everybody's trying to get involved.

JT: And are these ships, these LNG ships, are they as large as a lighter?

CK: Yes, they're huge, and they have these big domes on the deck. I don't know if you've seen a picture of one? Okay. There's like four or five domes, and it's all pressure. I'm not a chemist so I don't know exactly what the domes have to deal with. But they can make these ships as big as they want, because, you know, this is a liquid natural gas. It's not a bulky, heavy oil, so the sky's the limit on the size of these ships.

JT: Is that something that can float up the ship channel?

CK: Yes, because I don't think the actual product is what makes a ship heavy. So they can control it with ballasting, and they can go as deep as they want, and you can load a lot more. This is how I'm thinking, I'm not sure. I don't know if I'm right, but to me it seems like they can make the ships a lot bigger and deeper. They can go as deep as they want, you know, with the draft.

But a lot of the ships that come into Houston, their maximum draft is too much for Houston. They still don't come in fully loaded, the big ones, the big ships that I'm talking about, the BLCCs. They go down to, like, forty-eight, almost fifty feet drafts, but they come into Houston at a maximum of forty-four feet. But they used to come in at thirty-eight, forty, thirty-nine, whatever.

JT: It's basically the same ships, just now they can carry more cargo.

CK: Carry more cargo, which in less time, you know, it equals more product ending up onshore.

JT: Now, the Z-drive technology was really developed to handle these big ships, and with emphasis on the LNG?

CK: Container ships, too, yes. But my tug is designed specifically for LNG work, because of the design and the fire-fighting capabilities it has.

JT: Explain that to me.

CK: Most tugs have fire hoses and small monitors that are about five-feet long, and they shoot about sixty-five feet, a hundred feet or whatever. But these things, they have their own engines. Each monitor—we have two, one forward of the house, one after the house—each have their own engine for the pump, and most other tugs have just a small water pump, you know. It also has foaming capabilities, where you can inject foam into the monitor, too, mix it with water.

But it's all LNG. It's all these restrictions and rules from the Coast Guard and all, whatever the authorities that make all the rules for the transporting of LNG say that the tug has to be this, the tug has to be that. And that's what the *Shannon* is, the tug I'm on now. Our company is building two more, not just like it, but they're building their own, and as soon as those are finished the *Shannon* is going back to their owner, which is McAllister Towing.

We're actually leasing the *Shannon* right now from McAllister, and McAllister is going to be using that tug for some LNG project after we're finished with it. And

these two other tugs that we're building, they're also going to be, they're called FIFI fire-fighting systems, and it's a must. And with the LNG ships the tugs have to stay alongside or in the area while the ship's in the port. Remember, I was telling you a while ago when you finish docking the ship you can go to the next job, but these tugs have to stay with the ship at all times. Safety and the whole thing is bumped up a notch, or a lot more. It's a big issue.

JT: Well, I take it that your hoses are equipped to put out small fires, but if there's a large explosion with the type of cargo that's on these LNG ships, you wouldn't want to be anywhere near.

CK: No, no. Maybe there's a fire that breaks out on deck, and we could put the fire out before the explosion occurs. That's the whole thing. And you can reach this fire from four or five hundred feet with our monitors. So, I mean, you just have to be a step above the normal tugs, because that normal tug, like I said, will shoot—he'd have to get really close to the fire. Here you can stay a little bit farther.

Our tug actually has what's called a deluge system, where it sprays water around the tug as like a force field kind of, to keep the tug cool, so you can get a little bit closer.

JT: It sounds like these LNGs are really dangerous, really serious operations, and possibly with the dollar value of the ship channel, the Port of Houston's petrochemical industry, maybe that's why they're not so quick to jump on the bandwagon.

CK: I don't think so; maybe so. I know, I guess Freeport is a smaller port, and that's really good for their port. You know, that's going to bring in a lot of money. Yes, maybe Houston's happy with their production, and maybe they don't need to resort to LNG to keep the port running or keep pockets filled.

JT: Now, you were working onboard when Hurricane Rita—

CK: Yes.

JT: Tell me a little bit about that.

CK: We did a mass exodus of the Houston Ship Channel. There was not one ship, maybe a couple of those navy reserve ships that I was talking about, but I think even those left. But there was not a ship in the Houston Ship Channel. It looked just like Houston, just a ghost town. The only boats that stayed in Houston were our tugs, and it happened to be my rotation where I was on the tug, so I had to go, just like any other public servant, like a police officer, fireman. They've got to stay and maintain, and take care of what's going on.

So we didn't do anything. We tied up, tied up the boat really tight and just rode it out. I mean, we didn't get the brunt of the storm, but if we would have it would have been a little bit scarier. But it was just like a norther blowing in, because we were getting wind from the north, northeast, northwest.

JT: I'll bet you that was an eerie sight, an eerie feeling.

CK: It was very, because we didn't know what to expect. We have the Hurricane Contingency Plan at G&H, but this thing kind of snuck up on us and we were pretty much on our own. The company said, "Okay. Do what you need to do."

JT: Is this something that y'all practice?

CK: Now we don't, and I've brought that up in our meetings. We have quarterly meetings, safety meetings, what you want to call it, and I have brought that up.

It's like, you know, we were kind of on ourselves. Maybe supply us with some wood so we can board up the wheelhouses or whatever, because there's flying debris and big chunks of debris, metal. You know, Port of Houston has all kinds of stuff, and there's nowhere to hide, so I was hoping to—we were actually looking for wood on the dock last year, so we could board up our windows.

But, you know, some kind of contingency plan, and usually they just say, you know, "Fuel the boats up to top, top the boats off with fuel and water, and pack some extra groceries, and tie up and hold in. And if anything breaks loose, we'll let you know." But then once the hurricane hits you lose all radio power and radio signals, so how are they going to get a hold of you?

JT: I mean, I can't even imagine, first of all because I don't have the perspective that you have on what this diagram of the Houston Ship Channel actually looks like in real life, and you know the enormity of it with the ships and the activities. But I can't imagine what a Hurricane-Rita-size storm would do to the Houston Ship Channel. It's really hard to comprehend.

CK: Well, New Orleans would have been fine if those levies would have held up, you know. The channel itself could probably withhold any storm that size. It's not as exposed, I think, as New Orleans is. It's not actually below sea level. The only thing you would get would probably be the wind damage, and the surge would probably come up this far.

JT: Well, if Sabine or Port Arthur are any indication, I mean, that was 128-mile-an-hour winds. It really—

CK: Yes. Well, there would definitely be some wind damage, but I mean, every—

JT: Now, I'm thinking with all of the refineries, gosh. I drove by there recently and it's like small cities made out of steel.

CK: Yes, but they're all rounded off. It's not square, so they're kind of aerodynamic when it comes to wind. But debris could easily rupture a pipeline system and cause an explosion, sure. But I don't think a hurricane, a huge hurricane would knock the Port of Houston out like it did Port of New Orleans, which actually was pretty impressive on how they got underway again the next day after the hurricane. They were still bringing in ships, or not the next day but the next couple of days, you know.

That was the first thing they tried to work on, besides the safety. Yes, you were trying to rescue these people, and behind the scenes we're trying to get the ships coming in and out again, and it was pretty impressive.

JT: Have you guys seen an increase in activity of ships from New Orleans and businesses?

CK: Not now, but we did after the hurricane, for sure. Yes, we noticed it. We were extra busy for that.

JT: Kind of like the freeways were as well, in town?

CK: Yes. All the ships came to Houston for refuge, and to anchor off Houston, load, you know, they had to reroute their cargos and everything. That was temporary, but we definitely felt it. But I think New Orleans is squared away now, I think they're fine now.

JT: Well, good. Thank you.

CK: You're welcome.

JT: Excellent.

[End of interview]

[edited by Jason Theriot, 28 November 2006]