OFFSHORE ENERGY CENTER

ORAL HISTORY PROJECT

INTERVIEWEE: Mr. Frederik Johan Jonkman
Inductee OEC HaD of Fame – Offshore Pioneer
Dry Ocean Transportation
Born: January 31st, 1927, Amsterdam, Holland
The Netherlands

DATE: Saturday, September 30th, 2000 12:00 hours

PLACE: Westin Galleria Hotel
Ambassador Room
The Galleria-Westheimer At 610-W
Houston, Texas

INTERVIEWER: Mr. Joseph Pratt, Historian, Offshore Industry
Houston, Texas

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Side A

JP: This is an interview with Mr. Frederik Johan Jonkman from the Netherlands. This is Joseph Pratt, Historian for the Offshore Industry here in Houston, Texas. This is the interview for the OEC Pioneers. Today is September 30tb, 2000. I would like to start by asking you to reflect a little bit on your early education, how you got into the Offshore Industry, and talk about the early days of the industry.

FJJ: I began my career by attending the Naval Academy in Amsterdam, Holland in the last year of World War II (1945). This (3) year technical study was completed in 1947, two years after the war.

I joined Wijsmuller (Ocean Towage and Salvage Company), a firm that had just survived the war and lost most of their tugs while operating in the North Atlantic. They lost (3) three of their tugs leaving only (4) four "steam tugs" operating in Ijmuiden, Holland, Wijsmuller's home port.

I chose Wijsmuller specifically because they had just purchased an American built tug owned by the United States Navy. This tug had "diesel electric" propulsion whilst their fleet and engineers were used to "steam propulsion" (as were the steamships of the day). I sailed on this new technical advanced tug for approximately (3) three years in the worldwide towing and salvage trade. In the last (3) three months of my stay on this vessel, I served as Chief Engineer.

In 1951, I was appointed as Manager of the Technical Department of the Wijsmuller Company (ljmuiden), serving directly under Mr. Arthur Wijsmuller, President (Managing Director).

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FJJ: Wijsmuller decided to start a new building program for replacing their tugs lost during the war. I was responsible for the design of a new tug meeting the new requirements (post war) in this new evolving era. The entire world was changing from steam propulsion to diesel engine propulsion. I have to explain that the Wijsmuller Company in Holland was a tug company specialized in deep-sea towing and maritime salvage. In those days, the contracts came mainly from the dredging companies who sought our equipment for towing dredgers, barges and other floating vessels to worldwide destinations.

In the years from 1950 to 1952, we started to look at the Offshore Industry because, by that time, the drilling industry was constructing "jackup rigs" and "semi-submersible drilling rigs" (MODU = Mobile Offshore Drilling Units, as they are called today). These huge floating units had to be towed to various offshore oilfield locations around the globe. That was the time Wijsmuller really pursued the Offshore Industry as a main line of business which resulted in the towing of such units to Africa (Nigeria), South America, the Middle East as well as the Far East.

JP: Do you remember your first involvement with the Offshore Industry?

FJJ: Yes, the first tow Wijsmuller performed in the Offshore Industry was a mobile offshore jackup rig built by the LeTourneau Yard in Vicksburg, Mississippi. The rig was ordered by ARAMCO (The Arabian American Oil Company) for drilling in the Persian Gulf and offshore Saudi Arabia. Wijsmuller had contracted to tow the rig from New Orleans, Louisiana (crossing the Atlantic Ocean, through the Mediterranean Sea, Suez Canal, Red Sea and Indian Ocean) to Ras Tanura in the Persian Gulf. This was the very first transatlantic tow of a mobile offshore drilling rig.

JP: Did that present any new problems to you as the coordinator for this tow?

FJJ: Yes, very much so. The marine insurance for this unusual transport had to be placed through a Lloyd's of London approved insurance company in London, England. Their expert (marine surveyor at site) was appointed by the insurance underwriters and had to certify the general arrangements and seaworthiness for this transport. For him, this was also a new phenomena. As the jackup rig had (3) three legs that were protruding upward about 180 feet above the main deck, he ordered the legs to be cut down to 40 feet above the main deck thus causing less wind resistance and hull motion. The (3) three cut sections of the legs had to be stored and seafastened horizontally on the main deck of the jackup rig.

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JJ: He also required that a riding crew be on board the jackup rig during the entire voyage. We used those stored cut leg sections to build housing accommodations for the riding crew on deck.

The most significant requirement back then was to tow the jackup rig triangular hull with the baseline in the towing direction. This was the most disturbing development as this position of the rig would significantly reduce the towing speed. I had calculated a much higher speed by towing the rig from the apex end but I could not convince the insurance surveyor at site to accept this method. In addition, and for practical reasons, I used the argument that if one goes (expenses) for 100°/o safety, insurance is a waste of money. But, presenting my case did not change his mind. After the safe delivery of this tow, my staff and I had extensive tank testing performed for speed and behavior of the jackup rig in bad weather which confirmed our original expectations. Thereafter, all future tows of this type of jackup rig (triangular hull) were towed from the apex end.

Nowadays, we (wet) tow mobile offshore drilling rigs with approximately 300 feet of legs protruding upward above the main deck.

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JP: How does this business grow and how does it relate to your formation ofi.T.C. Holland?

FJJ: During my 25 years with Wijsmuller, Holland, I think where the real (escalation) boom in the Offshore Industry began in the mid 1960's; but, of course, by that time, we were already involved since the early 1950's, so well acquainted with the surge, as mentioned earlier.

JP: Did the Offshore Industry become a very important part of the company?

FJJ: Yes. At least 50°/o (fifty per cent) of our total income was derived from the Offshore Industry by the mid 1960's and actually increased from that time forward.

JP: And, what years would have shown significant growth?

FJJ: When I left Wijsmuller, Holland, in the early 1970's, the first (5) five to (10) ten years were the most significant because I had formed I.T.C. (International Transport Contractors) Holland, B.V., at last implementing my idea of the initial "Dry Tow" concept (tug/barge) where jackup rigs would now move (dry) on board a submersible "Seacamel" ocean going pontoon rather than towed in the sea (wet).

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JP: And, would that have involved much towing into the North Sea?

FJJ: Heavy transports of cargoes (general oilfield) to the North Sea began in the 1960's. The real change in traditional ocean towing "ideas" (Dry Towing) began when we experienced the very first wet tow (utilizing only an ocean tug) of a "mat supported mobile offshore jackup rig built in the United States by Bethlehem Steel (Beaumont, Texas). This unusual design had the usual upper hull supported by a lower mat (for ocean bottom stability when lowered at the drilling site) with a space in between of a couple of feet. Our powerful ocean tug exerted its maximum power on this wet tow but only reaching a speed of 2 *Y!* (two and one half) knots from the Texas coast to Nigeria, West Africa. It took about 80 days or so as the transport sailed on a southerly route then eventually crossed the South Atlantic.

JP: Eighty (80) days means you are vulnerable to all kinds of weather?

FJJ: Yes, we were exposed to weather conditions that could not be forecasted with the modem technology as we have today. Then, I had the idea (especially because of these new mat rig designs that were awkward to tow in the water) that a faster method had to be sought and therefore immediately concluded that the "Dry Towing" (tug and barge concept with rig on the barge) would be the answer. Simple calculations revealed that the dry towing method would allow a speed of (9) nine knots instead of2 Yz (two and one half) knots in wet fashion.

JP: So, with the new dry tow idea, did you have to build a new generation of equipment?

FJJ: No.

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JP: Could you utilize your current fleet of equipment at that time to perform this new dry tow idea of yours?

FJJ: Yes. We were in the process of constructing huge submersible barges but no new equipment specifically designed for "Dry Towing" because the idea had not become a reality, as yet. In this very conservative maritime world, one has to start at the beginning to show safety to the insurance underwriters and drilling contractors (rig owners). And, when using a submersible barge for the loading of a Bethlehem mat supported mobile jackup rig (for instance), our specialty was to place the rig on wooden blocking (cribbing) laid out on the deck of the barge in advance of loading/submersion. This was necessary due to the lower mat having a (2) two foot "skirt" around its perimeter. Therefore, the positioning of the floating rig above the barge in a submerged condition was crucial and required considerable engineering and site expertise in guiding such large units that would coincide together.

JP: In your job, did you make many of these trips yourselt?

FJJ: No. I was the President (Managing Director) ofi.T.C. and had specialists who rode the tow when required. Yes, I was in attendance on departure and arrival at destination to witness the respective loading and discharging of the rig because these are the critical times in which accidents occur. Our specialists were responsible for cribbing the barge, submerging the barge into receiving position, lifting the barge loaded with the rig, seafastening (and, the reverse procedure at destination with rig floating off the barge). You can imagine the tremendous details that had to be dealt with initially just to satisfy the "doubters" who said "this could not be done".

JP: That is amazing! Are there any other things that you would like to tell us about the Wijsmuller Company, Holland, while you were still there especially about the development of this trade before the creation of the other one?

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FJJ: Yes. The second phase (Dry Towing) was preferred over (Wet) towing because, towing a loaded barge with cargo still requires the use of a towing wire (extending from the tug to the loaded barge). Insurance people frown on towing wires because the can break in route causing numerous problems in bad weather. The insurance premium for a wet tow (of a jackup rig) rose to (4°/o) four to (5%) five percent based on the value of the mobile jackup drilling rig. At times, it reached (6%) six percent. So, at that time, I began thinking about developing a submersible ship (with its own propulsion as opposed to a dumb barge). This concept would cause the insurance premium rate to lean towards the "Cargo Insurance" rate rather than the "Special Insurance" category (higher rate). For example, if an oil rig is worth $ (50) fifty million to (80) eighty million U.S. Dollars and a lower rate (one, two or more percent lower) then . . . . . .

JP: It makes the whole difference!

FJJ: Exactly.

JP: Which significant insurance companies were placing coverage for these particular rig towages?

FJJ: Practically all of these transports were insured through Lloyd's of London of London, England because Lloyd's was known throughout the world for maritime coverage (traditionally, for generations). After coverage was placed, London entourages would then appoint a marine insurance surveyor who would approve the tow at loading issuing the usual "Lloyd's Certificate of Insurance".

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JP: In 1973, you created I. T. C. Holland B.V.

Could you tell us what was your incentive to create this new company, the process of doing so, and some of its major achievements?

FJJ: That is correct. I resigned from Wijsmuller in 1973 after serving them for 25 years in Ijmuiden, Holland. I had the idea of starting something "new" for the emerging Offshore Industry. Actually, my first intention was to join Heerema, a Dutch heavy lift offshore company. But, in the meantime, I met a well established Norwegian ship owner by the name of Captain Henri Tschudi (Tschudi and Eitzen, Oslo) who already had a fleet of ocean going barges. He had already bought (4) four barges in the United States that were originally involved with the carriage of cargoes for the Trans-Alaska Pipeline. The pipe was produced in Japan. The barge contract was for transportation of the pipe from Japan to Alaska. As the barges became surplus and inactive in Alsaka, Captain Tschudi purchased them for transporting oil to Bangladesh which but the idea failed thus leaving (4) four huge barges with no contracts.

Captain Tschudi heard from the Lloyd's Agency in Canada that I had resigned from Wijsmuller, Holland. Aside from just purchasing these (4) four barges, he was also building (3) three new ocean going tugs in Norway. So, Captain Tschudi came to Holland and asked that I join his company. That was the moment that I.T.C. Holland B.V., was created in Amsterdam and eventually moved to Haarlem, Holland in our own I.T.C. Headquarters building. Upon inception, major achievements were many in the Offshore Industry as well as the Dredging Industry and, in a very short time (especially after the very first successful dry transport), our company reigned as the world leader in "Dry Transportation" for several years until competition eventually saturated the market with updated equipment. But, we were the "first"!

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JP: What did you see as the major market for the new company?

FJJ: Naturally, to combine all my earlier thoughts and technical ideas for the Offshore Industry, the "Dry Towing" market was the perfect fit for converting these (4) four standard deck cargo barges into submersible barges. The hull compartmentalization was excellent and they also had a forecastle (forward house with machine deck and control room).

JP: This is a very important point in the history oil pursuit (the early 1970's) and the subsequent boom periods. Was that one of the motivations to create your own company -this sense that business was about to grow dramatically?

FJJ: Yes. Not only the Offshore Industry but the Dredging Industry was also expanding rapidly. The maritime rules for dredges at that time also changed. Until that moment in time, the free board on dredges was very short. Obtaining a "Certificate of Seaworthiness" was very difficult with such little freeboard. Consequently, there were problems transporting dredging material (dredge hull in the sea with towing tug) from Holland to Europe, to the Far East or South America. That was also a market that boomed at that time which paralleled the Offshore Industry boom (both at once!).

JP: Now, as the Offshore Industry grew in this period, what were the needs of the industry that your company had to learn to meet; and, what kind of innovations were required in the towing industry to meet those needs?

FJJ: Well, first of all, we had the difficulty convincing the rig owners and the insurance underwriters that dry towing was indeed possible (from a technical perspective) having a huge mobile offshore drilling rig on a submersible barge (with its three sets of legs rising 300 feet in the air above the main deck). They all doubted my presentation and, to them, it was considered "impossible", "dangerous", "ridiculous", "irresponsible", "daring" (all because it had never been done before). So, this was the major hurdle I had to overcome which was not easy especially placing my professional reputation and career on the line.

JP: How did you overcome that much rejection?

FJJ: Tank testing in Wageningen, Holland confirmed my calculations and convincing demonstrations (model type) to the owners and insurance underwriters forced them to take a second look. Remember, this was also to their advantage economically. For the rig owner, faster transport meant less down time and increased drilling time (day rates applicable only when the rig is working). For the insurance underwriter, this meant an immediate reduction in loss (less claims) and more profit.

JP: And, what would be one of your first real successful and practical demonstrations?

FJJ: We dry towed the mobile jackup drilling rig "Gatto Salvaticco" on a transatlantic tow to Italy. Later on, we had to tow it again from Italy around the Cape of Good Hope (Africa) to Mombassa (East Africa). This was the turning point in the worldwide towing industry. This proof convinced the industry that the I.T.C. "Dry Towing" method was indeed the only solution for long distance transports (versus wet towing with rig hull in the water). We endured the heavy weather around southern Africa which was also another major factor in that leg of the journey. This, too, was noticed by the rig owners and insurance underwriters (risky weather) in addition to the safety of the transport and record speed accomplished.

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JP: As this cargo gets heavier, do you have to change the kind of barges that you utilize?

FJJ: Yes. As I mentioned, in the beginning, we were using (4) four barges (300 feet long and 90 feet wide). But, as time passed, we built new barges (400 feet long and 120 feet wide; approximate capacity: 19,500 DWT) known as "SEACAMELS".

JP: About when did that occur (that barges grew to that size)?

FJJ: It was about (5) five to (6) six years after I formed I.T.C. Holland B.V. in 1973 (mid to late 1970's).

JP: Can you tell us something about the invention of the new heavy lift transportation techniques for submersible barges and their application?

FJJ: Yes. After our successful initial dry tow (via tug/barge concept) of the mobile jackup drilling rig, I then decided to pursue my idea of a submersible ship. Actually, we (I.T.C.) was the only company in the industry not building a new ship (compared to our late comers – competition) and we purchased a (8) eight year old ocean going tanker from CONOCO Oil Company. We cut the vessel in half, took out a mid section thus making it shorter. Then, we sliced the deck lowering the depth of the hull. We converted the vessel into a V.L.S.S. (Very Large Submersible Ship named the "Sibig Venture") and we were quite successful in securing major record breaking transports with this conversion concept.

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JP: That is interesting. How did that idea come about?

FJJ: Well, the worldwide tanker market was at a low ebb at that time and many ocean going tankers were laid up in Greece, so we bought one.

JP: How large was that era of tanker?

FJJ: It was a 200,000 ton tanker measuring 350 meters or so (1,000 feet in length and 40 feet or so in breadth) constructed for CONOCO in the 1970's.

JP: Now, when you moved up to that scale, did you also encounter new problems with just lifting cargo(es) on and oft'the tanker?

FJJ: No, it was much easier because, when loading and discharging mobile offshore drilling rigs on a (specifically) submersible barge, the barge always had to have its aft end submerged to the sea bottom for stability purposes. Then, the cargo would float above the submerged barge. The barge would be deballasted (lifting the cargo upward on the its deck). But, with the submersible tanker (ship), the deck could be ballasted until it (the loading deck) was completely underwater (with no water depth restrictions because the ship did not have to "touch bottom" for stability as in the case of the barge). The ship's loading deck could be ballasted down horizontally so that its deck was completely under water with only its forward end (bridge superstructure) and its aft end (machinery and exhaust stack) rising above the water. And, with such a large loading capacity (33,000 tons), the tanker (ship) could load one large (modular) piece of cargo than the barge could ever load on its deck. There is just no comparison between the barge and ship methods.

JP: And what years would this have been?

FJJ: The whole purchase/conversion/readiness for the tanker (now emerging as a "Very Large Submersible Ship") was from about 1982 to 1984.

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JP: Was that a common alternative (tanker ship conversion versus new construction of specialized vessels) in that period or was that just your idea?

FJJ: It was my idea.

JP: Did your competitors follow you once you showed them it worked?

FJJ: Well, Wijsmuller (my old firm) saw this new technology evolving and capitalized on the idea. To remain contenders in the industry, they went to the next step and constructed specialized vessels (rather than converting tankers) which were not suitable at first ("Ocean Servants") and rejected by the industry. But, eventually they constructed the "Super Servants" and the "Mighty Servants" which were fine vessels. Ultimately, as years passed, they surpassed I.T.C. taking the leadership away. But, I feel that we had already taken the "risks" and set the future pace for the industry just as the Wright Brothers did for aviation.

JP: In general, tell us for historical record what were the major innovations in your company? What were you known for?

FJJ: "Ocean Towing" and "Dry Transportation" made up a large part of I.T.C. Holland. Of course, there were other activities such as "Salvage" and "Specialized Engineering" projects that were noteworthy and respected by the Maritime Industry.

JP: Were you specialized in the Offshore Industry by then?

FJJ: Yes, we were specialized in the Offshore Industry as well as the Dredging Industry.

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JP: What were the crucial events in the expansion of I.T.C. Holland?

FJJ: What catapulted I.T.C. into the major leagues was not the Oil Industry. We were awarded a long term contract (five years) in the Persian Gulf transporting (via tug and barge) stones from the center of the Persian Gulf to a new port under construction in Saudi Arabia. And, at the same time, we were building (7) seven new sister tugs in Japan and (5) five stone barges. That was really a massive contract for a newly formed company like ours and that is how it (the contract) supported the massive investment in new equipment.

JP: What do you remember as the most exciting events of that time, where you were mostly involved?

FJJ: Well, we had one huge engineering project in South Africa. There was a lagoon located 300 miles north of Durban. The dredging companies were contracted to dig out the lagoon. Not having a way to enter the lagoon with their large floating equipment, they were about to construct new equipment (portable dredges) specifically for this project until I changed their minds. Together with my engineering staff, we devised a system by which they could use their current heavy dredges without incurring the cost of new construction. Through the complicated use of land winches and studying tidal activity, the large dredges were pulled across the sea barriers (beaches) into the lagoon from the direction of the Indian Ocean. Five (5) cutter dredges entered and completed the Richard's Bay Project.

JP: In 1992, you spent (3) three months in the People's Republic of China?

FJJ: Yes.

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JP: This is an interesting time to enter China as there is much happening there. Could you describe that part of your piloting business?

FJJ: I was invited by the Society of Naval Architects and Marine Engineers (SNAME- USA). This institution in the United States has a group called "People to People" which involves itself with exchanging knowledge between participating countries. By the way, your current President of the United States was also President of "People to People". This travel group of professionals consisted of (8) eight men and we traveled through most of China lecturing at the major universities on various disciplines pertaining to the maritime/marine world. Discussions ranged from ocean going commercial ships to military vessels. We had (5) five Americans in the group and I was the only Dutchman. A navy admiral from Thailand was also a part of the group.

JP: At the time, were you talking about offshore rigs at all or naval bases?

FJJ: I lectured about my ocean transportation industry which, of course, included offshore rigs and similar equipment since these are ever increasing significant cargoes of size and value.

JP: What do you remember from that time in China?

FJJ: China was creating a boom in their own offshore energy pursuit. They were drilling for oil utilizing more modem equipment of the day such as semi-submersible offshore drilling rigs and other sophisticated equipment.

JP: Did this occur when the international oil companies of the world were mapping offshore China?

FJJ: Yes.

JP: That was quite an exciting time showing promise of what might occur offshore as well as onshore?

FJJ: Yes.

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JP: Did you feel that promise yourself? Did you feel like China was about to open up to all kinds of business possibilities?

FJJ: No. I did not think they needed that much marine transportation from the outside because they were building shipyards and ships in China for themselves. So, China's offshore used Chinese facilities and their own vessels, more or less.

JP: When you look back at the history of I.T.C. Holland, what do you see? In summary, what were crucial contributions of the company and how did it fit within the evolution of the Offshore Industry as a whole?

FJJ: Well, we started this "Dry Transportation" idea on submersible barges (Seacamels) towed by ocean tugs but we slowly (conservatively) changed over to self-propelled ships. And, I always did think that the ship method was the future for ocean transportation (of extremely large objects) instead of wet towing (tugs). As the cargoes grow larger, the ships will become larger. Even now, complete factories are constructed in industrialized countries (in modular self contained completed units) and transported all over the world. In fact, I can site at example. Approximately (20) twenty years ago, a complete refinery was built in Belgium on a concrete barge. This project was monitored and tested by EXXON. We towed it from Belgium to Libya. They dredged a channel in Libya in advance of our arrival. This rural refinery was "winched in" the prepared dredged slot and sand was put in and around the new refinery (as if it had been locally built on solid ground). Within (3) three weeks, the Libyans were refining oiL

JP: And, is the refinery permanently sited there?

FJJ: It is still there.

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JP: That is an interesting idea – a whole refinery moving as a totally constructed unit.

FJJ: I was personally involved in the transportation and the rigging of the unit because we had to break it down somewhat during the voyage. But, you are correct. It was quite an experience for me.

JP: It seems like much growth in cargo size will require amazing advances in technology as it has always been the case. What do you see as the marine transportation technology of the future?

FJJ: Again, I believe complete factories will be constructed in modular form in Japan, Korea and other countries (heavy industrialized) and towed by tugs, or transported on submersible ships, to South America and other third world countries. That will be the future, I think "bigger and bigger".

JP: Do you have anything you would like to say in general about your experience in the Offshore Industry for people who may be watching this video (50) fifty years from now about your lifetime spent in the industry? Any lessons learned? Any information to tell future generations?

FJJ: Marine transportation is only a small segment of the Offshore Industry. The Offshore Industry is much broader than just the transport side although we are an important factor. However, and as discussed during this interview, the current and future momentum of the Offshore Industry will increase in its size warranting increased infusion of major capital. Therefore, the marine transportation segment must ready itself to also invest heavy capital in order to keep its fleet and related equipment continually updated meeting the demands of new technology.

JP: All right. Thank you, Mr. Jonkman.

FJJ: It has been my distinct pleasure, Mr. Pratt. Thank you for having me.

THE END

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