

SHIFTING AT BROOKLYN PIERS

Although based on a true story circa 1963, the names used are fictitious.

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Jingle... The cowbell at the engine room control stand rang once. "Aw nut's" I said out loud. We were hanging on at Red Hook, Brooklyn waiting for a job and it was a good time for me as the assistant engineer to get some maintenance done on the tug's main engine bilge pump. The tugboat had a direct drive Superior main diesel engine and when we weren't underway the engine was stopped. All the electrical was direct current and as we hadn't been shutdown long we were still on battery power. This made for a very quiet and peaceful atmosphere in which to get the job done that I wanted to do. On the front of the main engine was a twin piston double acting pump that ran off the main engine camshaft anytime the engine was running. This arrangement kept the bilge dry. The leather disk valves needed cleaning and the shaft packing had to be changed so the pump could draw the bilge water up the five feet without loosing its suction and at the same time water would not leak into the pump area of the engine block and then make its way into the crankcase.

I was hurrying to get it back together again when my buddy, Barney the deckhand, yelled down to me "get 'er going Row'bert ve have to do some shifting ya know". "All right, all right, Barney but I need 5 minutes to get this back together again ". "Okay" said Barney "but you better get the 'Hurdy Gurdy' going too. Ve have to hurry up with the shifting to clear the pier and then help the Ellen F. in vith a ship". The Ellen F. McAllister was a very busy 1000 horsepower ship-docking tug that carried a docking master on board.

Our tug was the Peter B. McAllister, a canaler with a low silhouette and pilothouse to allow us to get under the bridges in the NYS barge canal system. The Peter B. had a low speed main diesel engine that produced 880 horsepower. The 'Hurdy Gurdy' was a 6 cylinder Superior auxiliary diesel that ran a 40 KW direct-current generator off one end and an air compressor through a PTO (Power Take Off) and clutch on the other end. I had no intention of starting it. That compressor was used if there was a lot of shifting and the main compressor that ran off the tailshaft on 5 big vee belts was not enough to keep up with the demand. I took great pride in being able to start and stop the main engine with very little air and had shifted barges many times without using it. The auxiliary was also very noisy. There was also a shaft generator running off the main engine intermediate shaft by vee belts to make electricity whenever the main engine was running at more than dead slow. This gave us electrical power and charged the batteries at the same time. I was only 21 years old and had just received my United States Coast Guard Engineers license and I thought I was the cat's meow, not to mention I knew everything about everything.

Captain Vic rang the jingle again because I had not answered the jingle with one of my own which was what you did when you were ready. I didn't ring back because I wasn't ready and he knew this. Almost immediately after that he rang one bell on the gong, calling for half ahead. He knew I wasn't ready and was just busting my chops and trying to make me hurry. I finally got the pump back together and ran up the ladder on the port side to the upper engine room where the control stand, engine gauges and thermometers were. I hit the jingle with my hand to signal I was ready and he answered immediately with a gong and two jingles on the bells. This meant slow ahead. I pushed up the throttle

that was a large brass handle shaped like an old emergency brake with a ratchet, halfway up and turned the start-stop wheel counterclockwise. This would shift the camshaft aft so the ahead running lobes were in position for the rocker rollers of the exhaust, start and fuel injector valves to be able to run in the ahead mode. A little more pressure in the same direction of the start-stop wheel opened the main air start valve and 150 PSI air was admitted to the pistons that were just past top dead center driving the pistons down and causing the engine to rotate and start. The trick was to give it just enough air so it would rotate and start, but without overdoing it and wasting the air. Once I knew the engine had caught, I would come back off the start detent that was spring loaded in the start-stop wheel and move the fuel ratchet back to dead slow. If Captain Vic wanted to have the engine run slower yet, he could give me another double jingle and I could pull back on another lever below the throttle and that would move out the wedges between the injector tops and the injector rocker swivel until the engine was just barely running. Sometimes we pulled it back just a little too far and stalled the engine. This would mean a restart and that would use up more air, something I didn't want to do.

Captain Vic worked the stern off and gave one bell to stop. The strain came off the line and Barney quickly threw the turns off the bitt and whipped it off the dock cleat as though the line was string. I didn't see this, I just knew the procedure and Barney was one of the best. From my station in the upper engine room I could look out to port pretty well and if I leaned out the door I could see to the forward and aft quarter bitts. Across the engine room was another door with the top half usually open and two port lights that gave me a somewhat limited view but it was enough to let me see what was going on around us and allow me to anticipate what we were up to. It was a nice clear day in the late fall, crisp but not cold, a good day to be tugboating.

Then ... two bells to go back. Unless we got a jingle for full, we always gave three quarter speed astern. Vic let her run astern for a half a minute using the rudder to help her go the way he wanted. The rudder didn't do much going back under power but when he stopped me with another bell, the rudder pulled the stern a little more to port as we left the slip. Barney was going past the engine room door to get his after lines ready and he said to me "better get the "Hurdy Gurdy" going Robert (he and the other Norwegian's pronounced it, Row' bert).

I watched the steering shaft in the overhead of the upper engine room rotate as Vic turned the rudder to starboard and was anticipating the one bell and a jingle to bring us around to starboard. This, to clear the pier head and make for the next slip where the shifting was to take place. I had to force myself not to look at the gong hammer and make a false maneuver; Vic had a nervous habit of raising and lowering the hammer without actually causing the gong to ring. If you looked it might seem like he rang it and you could make a mistake. That would use up air. The tide and rudder carried us to where Vic was satisfied with his position and rang one bell and one jingle. As quick as I could I swung the start-stop wheel to the start position at the same time as I pushed up the throttle lever, the cam shifted, the engine rotated, a little sluggish at first as she overcame the astern way on the propeller when the flywheel brake released, then it quickly turned over and caught as I released the start-stop wheel and allowed it to come back to the run detent. Then I pushed the throttle up to 85 percent. I could have saved half a second if I shifted the cam before I got the bell but I didn't want to use air moving the cam if Vic gave me another backing bell instead.

We went into the slip and made up to two deck barges, let them go from the cleats and bollards and brought them around to the other side of the pier and landed them. Barney tied them off. I went aft and let the tugs stern line go as Barney let the headline go and held the towing strap until I got back in the engine room to answer Vic's two bells to go back. As soon as he got enough slack he snapped it off with little effort. We were going back to pick up the last two barges and Barney walked by again and said I had better start the "Hurdy Gurdy". He and Vic both knew it wasn't running because you couldn't help but hear it when it was because it was so noisy. I wasn't worried, I had pretty good air left and Vic wasn't giving me any extra bells on purpose to make me use more air. He did this occasionally to keep me humble.

Coming back to the pier where we were going to pick up the remaining barges, the pier head was on our portside giving me a great view from the operating stand. We turned hard to port to enter the slip and Captain Vic being the ace he was, used the tide to bring us close to the end of the pier and worked the tug up into the current at a full ahead bell to bring us towards the barges at the same time sliding west, bow coming around to point southeast and making headway to our target. Beautiful. I had seen this many times and was ready. Vic always gave three bells and a jingle in close quarters coming from full ahead instead of the regulation four bells and a jingle but I was used to this and was all set and in the flow. I loved this. I was hanging out the engine room door watching as we got close and Vic rang the expected three bells and a jingle. Without really looking I reached in, pulled the throttle back, turned the directional wheel clockwise to stop, waited for what I felt to be the right amount of time and turned the wheel again to the astern start position. The timing was perfect I knew as I pushed the throttle lever up to three quarter speed. Boy, we were coming in fast. Without waiting I reached in and pushed the throttle up a couple of clicks on the ratchet. I no sooner did this when I got another jingle from Vic. We were still coming in fast but at a shallow angle because Captain Vic was used to steamboats, direct drive diesels and engineers who answered bells wrong. I reached in and pushed the throttle all the way to the stop as I looked out in wonder. Why were we coming in so fast? Then I got the bells again, three bells and a jingle. Uh, oh, that meant start all over again as he wasn't getting what he wanted. This time I turned all the way around and looked into the engine room. Oh no! The upper engine room was filled with smoke. I quickly dropped the throttle to idle and the directional wheel to stop. That's when I realized what had happened. In my all knowing, wise guy, fast shifting mode I had not waited long enough at the stop position for the flywheel brake to slow the engine down enough when I first got the bells for full astern. Even though the cam had shifted, the engine was still rotating ahead. This allowed the engine to keep going in the ahead position using the exhaust valves as the intake and the intake valves as the exhaust. What a mess, I could hardly see through all the smoke, Barney was yelling "go back, go back Row' bert!" I could hear Captain Vic screaming and I was momentarily confused. Vic rang the same three bells and a jingle again. This got me back to my senses and I shifted the wheel to reverse, started the engine in the astern direction and gave her full throttle as fast as I could. I could feel the propeller digging in and cavitating.

Well, I was just a little too late. We hit the closest barge with our port hip fender so hard we bounced off about ten feet. When you hit something that is not going to move with a tug that weighs about 120 tons at that rate of speed and all of a sudden shoot off in a different direction most of the loose stuff on board doesn't cooperate. Like the guys who

were off watch in their bunks, the stores, the soup and the potatoes on the stove, the log books, pencils, coffee cups and other loose stuff that went flying. The cook came out of the galley screaming followed by a cloud of steam from the spilled soup and potato water on the hot surface of the oil stove. The first assistant engineer came running out of his bunkroom into the smokey engine room in his pajama bottoms with raw fright in his eyes and his mouth wide open but no sound coming out, the off duty deckhand came up on deck from the foc'sle bunkroom with a life jacket in his hand. Later, looking back I would laugh at the whole scene (especially the 1st Assistant in his PJs) but at that moment I was embarrassed, scared, confused and praying that I hadn't damaged the engine. I had to hold my cool in front of Barney and Teddy, the assistant engineer, the cook was the least of my worries as he just kept babbling on about his potatoes but Captain Vic was another matter. Not only did he hold my future in his hands but I didn't want to feel like I failed in his eyes. I had gotten a bell to stop but I didn't get any after that and we were just slowly drifting across the slip. Then I heard Vic walking down the deck. Uh oh, here comes the screaming. Vic stopped in front of the open engine room door and just looked at me with his hands on his hips and the slightest of smirks on his face, as if to say "So what happened hot shot? You're not so sharp after all are you?" He didn't say anything though, just shook his head. He then walked slowly back to the pilothouse and resumed the shifting. I started the Hurdy Gurdy.

The smoke soon cleared and the First Assistant Engineer was relieved to see there was no damage to the engine. He had never seen this happen before but I had, I had done it a couple of times when I was learning. It would never happen to Teddy though as he was not interested in being a fast shifter, he would always wait until the engine came to a complete stop. It was almost time for the off watch to get up anyway so they all came around to the engine room door to razz me. The deckhand and the first assistant engineer helped the cook clean up and get everything back where it belonged. By the time Cookie rang the dinner bell, all was well.

We completed the shifting just before we were relieved and the other watch then helped the Ellen F. into the slip with her ship. We hung on (put a line out and shutdown) for about a half an hour and then got our orders over the VHF radio to help the Ellen F. out of 23rd Street Pier right near the mouth of the Gowanus Canal. It was going to be a light ship going to stream. The mate wasn't happy about this. He just did the docking job but it was an easy one and in daylight. This would be a much harder job and now it was dark. The mate usually only worked in the NYS barge canal and stayed home for the winter season when the canal closed. We would probably make one more trip to the canal so he was still onboard. He tried to get out of the job but the dispatcher said we were the only boat around unless he hired an outside tug. Well, nobody wanted that to get out so he said okay. I went and sat on the stern hawser rack with my after dinner coffee and cigarette to watch. I also thought it would be a good idea to stay up until this job was over.

The Docking Pilot told our mate to lay at the end of the pier and wait until he backed out of the slip. Then we were to get on the ships port forward quarter to help the Ellen F. push him west. In the meantime the Ellen F. was up in the slip at a ninety degree angle to the ships starboard bow. She would pinch the starboard bow in which in turn would bring the ships stern off the pier and then the Pilot would have the ship come half astern. As the ship gained sternway and the Ellen F. lay all stopped, her line would become taut and pull her bow around towards the ship. At the same time because of the Ellen's weight the line

also pulled the ships bow away from the pier so it was clear. With an ebb tide the pilot needed both tugs to get the bow going west quickly while he came full ahead on the ships propeller and a hard right rudder, to make the turn in these very tight quarters. The ship was steam powered. Whenever a ship with this type of propulsion would first leave a pier in a relatively cold state they could never give you more than 70 percent power, which didn't make the job any easier. The Ellen F. now came ahead getting lined up for the tip of the port bow. As soon as the pilot thought he could clear the next pier head, he came ahead on the ship and blew his mouth whistle signaling the Ellen F. to come full ahead on the port bow and the ships whistle for us to do the same. The crew on the Ellen was experienced and they were in place and hooked up before you knew it. We, on the other hand, took time to jockey ourselves into position and when we did the ship was turning so fast and with some headway so we could not get as far forward as we should have and at no better angle than about 45 degrees. Between the two tugs and the ships propellers splashing and thumping away at 70 percent revolutions, we were all turning pretty fast. The splashing of the ships propeller was because she was light and the propeller was not fully submerged. We did well though. Now with even more headway on the ship the pilot had both tugs go to one bell. We were almost flat against the ships side now and sliding back. We did not have a line out like the Ellen F. to hold us in place. The Pilot blew one long and two short on the ships whistle to signal us to let go or in this case to get away. The ship was still turning to starboard though and this was pushing her stern to port pressing us against the ship. We were still sliding back and couldn't peel off. The mate rang for full ahead and put the rudder over to port. This only made the starboard side climb up the ship and put the port rail in the water and we were still sliding back. Now you could see and hear the ships propeller getting closer. What you hear is more of a thump, thump, thump than a splash, splash, splash. You could feel and hear the thumping of the four giant blades as they slammed into the water right through our hull. If that propeller turning at that speed were to come in contact with our 3/8" steel hull it would slice right through it and keep slicing as it turned and we moved aft. No pump would ever keep up with the amount of water that would be coming in from the multiple slices and we would sink in minutes.

The mate rang another jingle but I didn't feel much of a difference in engine vibration so I ran up the starboard side between us and the ship, the port side was not an option as the deck was under water.

"Hook it up, hook it up" I yelled to Teddy. He shrugged and pointed to the throttle that was in the 85 percent position and Teddy had never had it past there. The mate tried to put the rudder to starboard now to bring our stern off as we were beginning to go under the stern counter towards the turning and thumping propeller.

It's funny how your perspective changes when circumstances get a little hairy. The area near the mouth of the Gowanus Canal looked very small and close at the start of the job but all of a sudden, in the dark, with few lights ashore and the deck lights of the tug limiting your far vision, the noise of the engine and the ships propeller, the black water of the harbor looked very large and foreboding in this dangerous situation.

Vic had gotten out his bunk in his underwear and took the wheel from the mate; he rang another jingle that almost pulled the cow bell off the overhead. Teddy just stood there not knowing what to do. I came in the engine room from the starboard side door and went under the shiny brass railing that went all around the top of the engine, stepped on a

cylinder head while keeping my feet away from the intake and exhaust valves and the rocker arms that were pounding up and down, reached over the railing on the far side and grabbed the throttle handle. Teddy did not know what was happening and was confused so he didn't try to stop me as I pulled the lever to its limit. At around the same time or just before this Captain Vic blew the alarm on the tugs horn. Later, I remembered hearing it but at the time all I could think of was the thump, thump, thump of the approaching propeller. The Pilot, realizing what was happening made a very clever maneuver. Instead of stopping or slowing the ships wheel which by that time would have gobbled us up anyway, he turned the rudder hard to port moving the ships stern away from us and at the same time directing the wheel wash towards the Peter B.

The ships stern moving away, the tugs increase in engine speed and Captain Vic using the rudder just the right amount allowed us to peel off without too much rudder. If he came too hard to port we still would have gone under the stern counter and into the prop. We had just missed being sliced open and sunk.

Teddy who still had no idea of the danger we were in was only interested in getting the engine speed back to his idea of full. He was hearing noises he never heard before and vibrations he never felt before from the main engine and just wanted things back to normal. I signaled okay and he slowed her down a little.

We went to a pier, tied off and shut down. Everyone congregated in the galley, sat down and had coffee. No one said much of anything for a long time. The satellite speaker in the galley was squawking "794 to the Peter B., 794 to the Peter B." but no one made an attempt to answer. After a while the mate said he was getting off in the morning and wouldn't be back until the spring season. Vic said in a low voice and without any anger that he thought it would probably be a good idea. Teddy said he was going to tell the chief when he came back that I made him speed up the engine more than he wanted to. The deck hand said he was going to get the lines ready because there was going to be a lot of coffee barge work tonight. The cook said he had to go get ready for bed if he was going to get up at 4:30 am.

And just like that, everything was back to normal.