Thoughts on NOORDAM and QE2

An interview with Captain John Scott

By Richard H. Wagner

Captain John Scott's substantial experience at sea has included everything from working on banana boats and sheep carriers to commanding some of the most luxurious passenger ships afloat. He is presently captain and master of Holland America Line's NOORDAM, that company's latest cruise ship. Before coming to Holland America in 1995, he was Chief Officer on the legendary QUEEN ELIZABETH 2. As a result, he is uniquely situated to discuss some of the similarities and differences between a modern cruise ship such as NOORDAM and the venerable ocean liner.

Scott takes considerable pride in NOORDAM. He was the ship's first master and stood by her for five months while she was being constructed at the Fincantieri yard near Venice, Italy. "It was really quite spectacular watching it all come into the yard. Dozens of trucks a day coming in putting all the stuff on. It was a massive operation to get it all here."

"QE2 is a lovely ship, a beautiful ship. I thoroughly enjoyed my time on her." Captain Scott points out proudly that he was responsible for a number of innovations on QE2 including the radar mast over the wheelhouse, the gangways used in cruise ports, and the faux-wood paneling on the bridge. "I can look at the photographs and say that is before I was there or that is while I was there or that is mine or that is mine."

The two ships are similar in size. QE2 is 963 feet long while NOORDAM is 960 feet. Both ships are approximately 106 feet wide. NOORDAM is somewhat larger in gross tonnage: 82,300 versus 70,327. Along the same lines, NOORDAM carries approximately 1,900 passengers versus 1,728 for QE2, although earlier in QE2's career, her passenger capacity was somewhat higher.

At that point the similarities end. QE2 was built in the late 1960s based upon a unique design. Her long, sleek hull was designed to cut through the rough waters of the North Atlantic and has steel as thick as a warship. She is propelled by two traditional propeller shafts attached to two electric motors which are powered by nine diesel electric engines. Her original cost was £30 million but Cunard estimates that it has spent 15 times that amount on refitting her over the last 40 years including a £180 million conversion from steam to diesel-electric power in 1986.

Delivered to Holland America in 2006, NOORDAM cost approximately $400 million and is the latest version of the "Vista" cruise ship design. NOORDAM is the fourth ship of this design purchased by HAL but differs from her sisters in that her stern superstructure has been lengthened to yield 35 more cabins. "Our stern is about 200 tons heavier than the other ships." This addition also required strengthening the ship's bulbous bow to compensate for the added weight in the stern. However, "structurally, there isn't much difference between this ship and the three older ships."

"This is actually the fifth Vista-class ship built even though there are only four in our fleet. P&O's ARCADIA is basically our ship. It originally was to go to Cunard as the QUEEN VICTORIA but it went to P&O. Technically, by and large, she is the same. Structurally and appearance-wise, she is very similar to

this. It was modified a little bit to make her look more like a Cunarder and then re-modified in order to make her look like a P&O ship. She is, however, one of our five hulls, if you like. The underwater hull design has been used by Costa, Carnival, now P&O, and ourselves. So, basically, the underwater hull is quite well used."

Cunard's QUEEN VICTORIA, which recently went into service, also bears a relation to NOORDAM. "The new one, QUEEN VICTORIA, is a little bit longer, a little bit more powerful, and should be a little bit faster. But basically, she is an improved and uprated version of this design. I'm not sure what the steel thickness specification is or what the interior fit out is like but they may be making her more of a liner. She will be longer and therefore a little bit sleeker than these ships and then you start to look more like a liner."

Instead of a traditional propeller shaft arrangement as on QE2, NOORDAM is propelled by two "azipods," which can turn 360 degrees to propel the ship in any direction. Captain Scott described an azipod as having "the profile of a rudder." At the bottom, there is the electric motor and the propeller is at the front pulling the ship through the water. Having the propeller in the front means that it is turning in undisturbed water - - "there is no interference of the water flow coming out under the ship and around the side of the ship. So, then you get a better flow of water on the propeller. Whereas conventionally, the propeller is at the end, so you have the framing, the brackets, and the propeller shaft interfering with the water flow. With the pods, you just get a straight pull of undisturbed water. The azipod is about 5 or 6% more efficient than the standard propeller because of the better water flow. [In addition,] it frees up space within the ship because you don't have the electric motor in the stern sheets and you don't have stern thrusters. So, it's a rudder, propulsion and a stern thruster all in one unit. It gives you a lot more power down in the stern to move the ship around."

Whereas QE2 obtains her power from nine diesel engines, powering NOORDAM's pods are a diesel electric system and a gas turbine system. While Cunard's QUEEN MARY 2 uses its gas turbine engine to generate the extra power needed for a transatlantic crossing, such a system was included in NOORDAM for environmental reasons. "It was put in for going to Alaska and ports where we need a very, very clean exhaust."

While NOORDAM's hull does not have the same thickness of steel as QE2, she has very good water-tight integrity. "We're actually more than double hulled. In many places, we have two or three rows of

Captain John Scott.

tanks. They have an outer hull, framing, an inner hull, and quite often we have another set of tanks on top of that. The ship is divided into water tight zones down in the lower part of the ship. We have watertight doors that slide across and huge hydraulically-powered doors and we can break the ship into zones. We could flood two or three zones."

"QE2 was built to run across the Atlantic and to do cruising as a sideline. This ship was built as a cruise ship. QE2 is enormously more powerful than this ship. We have 48,000 horse power propulsion-wise and she [has] 130,000 horse power." Actually, Captain Scott noted, no one is sure how much power QE2 has because when her power plant was built there was no means of testing the amount of power the system was capable of generating. "So they took the propulsion motors up to the limit of the thing that they could test it against and said okay that's enough. So nobody is ever quite sure how much power you could get out of those motors." As a result, "she has very fine lines and she is very, very fast." Indeed, QE2 is the fastest passenger ship in service, capable of 33 knots.

In contrast, NOORDAM can "do about 22.8 or 23 knots. But, it depends on what we are doing. If we are up in the cold latitudes, then we can go faster. At present [during a Caribbean cruise], we are running three AC compressors to keep the air conditioning going. We are using about 11.9 megawatts of power, basically for lights, air conditioning, and that type of thing. We are using about 28.4 [megawatts] for propulsion. We actually slow down during the day. Then, once the galley stops and all the entertainment stops, the extra electricity goes to the propulsion motors in the pods so actually our speed varies depending on the temperature, and also what time of day it is. We slow down about three quarters of a knot as everything starts going for the day."

While QE2 would be the clear winner in a point-to-point race, NOORDAM has the edge when it comes to maneuverability. "QE2 has one enormous rudder and only 900 horsepower bow thrusters. She goes very fast in one direction, she goes around corners very well at fast speed, but when she comes to slow speeds, it can be very exciting. Whereas here on NOORDAM, we have got 7 and a half thousand horsepower bow thrusters and when we turn the pods around, in the maneuvering mode, we have got about 16,000 horsepower down aft to go sideways. So, it a completely different capability of maneuvering between the two ships." One result is that NOORDAM is less dependent on tugs, making her less expensive to run.

In addition, NOORDAM's better maneuverability and shallower draft make her more suited for cruising. QE2 could not dock in many of the cruise ports visited by NOORDAM. Indeed, Captain Scott could only think of three ports in the Caribbean where QE2 could go along side. This is a big disadvantage because tendering "is inconvenient for guests by and large. They want to be able to walk straight ashore. People do prefer to walk off, more than anything else."

Life onboard the two ships also differed. "Different style of passenger, different expectations. The passengers here have come for a vacation. They haven't come as a means of transportation. Operationally, all summer, [on QE2] it was basically the liner run. We had to run a different style because of the North Atlantic weather - - things had to be screwed down, lashed down, a lot more than we need here. It came with different expectations. Many people use the QE2 as a means of transportation, instead of flying. They would come because they wanted to go from New York to Southampton. They didn't come because they wanted to cruise from New York to Southampton, they had to get from New York to Southampton. They couldn't, wouldn't, or didn't want to fly. We also had people who were interested in working "

"QE2, probably because of the run she did, had more people who were better known. People, if they were going to New York from Southampton, some of them were doing it for a short vacation, five days. So, there were some celebrities, some well known political figures, some well known business figures, quite a lot of old established money. Here, people are successful but they are more low key. You do get some surprises here but on Cunard you were a little more aware of them. Also, because officers had more to do with passengers, you had to deal with them and see them."

In June, it was announced that QE2 would be leaving service in 2008 in order to became a floating hotel in Dubai. While this decision has sealed QE2's fate, the question remains whether the 40 year-old ship could have remained in service. "Structurally, certainly hull-wise, she has got 60 years left." Along the same lines, the age of the power plant was not an obstacle to continued operation. When the new engines were installed in 1986, it was predicted that they would last until 2010. However, "engines are replaceable. You can keep replacing parts. We blew one up back when I was onboard. We had to cut a hole in the side and take one whole engine out. So, if they had to, they could cut a hole in the side and just slide them out and put new ones in. It is not a huge job."

However, there were several issues that did pose an obstacle to the ship's continuing viability as a business.

First, there was the problem of removing the wooden elements of the ship's interior so as to make her compliant with the Safety of Life as Sea Regulations that go into effect in 2010.

Second, when ships get old their pipes start to go. In addition, some of the related operating systems are no longer state-of-the-art and are costly to operate. "There are things like she doesn't have a vacuum toilet system. She has the strong-wristed rush of sea water type ones. In this day and age, you really have to have a vacuum system because of the volume of liquid."

Finally, some of the accommodations on QE2 no longer measure up to the accommodations passengers expect on modern cruise ships. "I think the original One Deck cabins are ageless. Those lovely original cabins, they will never age. Deck Two midships, the middle section, that is nice. But where she starts curing near the Computer room, there are some pretty boxy cabins in there. [From a business perspective] whether she is worth gutting those sections and putting new accommodations in, I don't know."