

## A Beautiful Queen Rescued

The mighty ocean liner, MV Queen Elizabeth 2, struck bottom last August near Martha's Vineyard. She was making 24.5 knots. Outer plates of the 67,000-ton Cunard flagship were slashed open; bulkheads crumpled; frames twisted and bent. She had to be made seaworthy quickly to cross the ocean for permanent repairs at a German shipyard.

Nearly 200 welders, cutters, riggers, fitters, and other tradesmen — many from Greater Boston unemployment lines — bent to the task. In 22 sweltering August days, they applied nearly \$5 million of labor and steel to the QE2 in a long-forgotten drydock near Boston, MA. The American workers did a remarkable "temporary" patch job — finishing it nine days ahead of schedule. And it was a first for everyone involved. They demonstrated that they could perform big ship repairs quickly, efficiently, and on time. Even when working in a small shipyard with a revitalized, 74-year-old drydock that had seen World War I and II warships and the Queen Mary.

The work was tough, with rigid supervision by Britain's Transport Bureau and the U.S. Coast Guard. But to one welder, George Bertocchi, burning the under belly of the famous ocean liner was "just another job, a way to make a living." He helped cut access holes up through cramped, freshly cleaned diesel fuel tanks. Specially cut stiffening shapes and brackets had to be welded in place. Bertocchi, a ship's welder for 23 years, said he wasn't overly impressed by the size of the Queen. "We built them bigger than that — 1100-foot LNG ships at the old General Dynamics yard," he said.

Peggy Noonan, a certified ship welder with 12 years of ship repair experience, felt about the same way. She helped with the welding of doubler plate (massive steel bandages), 1 1/8" thick, to the ship's bottom. The plates were jacked in place and welded to cover hundreds of linear feet of dents and cracks. Many small cracks in the 1 1/8" thick shell plate had to be welded, also.

The worst part for Noonan was being hunched over, working long shifts in 4 1/2 - 5 feet of space. That was the height of the only blocking available in the long-unused shipyard. "The ship was low in the drydock, and with water constantly under foot, we had to wear rubber boots so we wouldn't get zapped. We all had proper safety gear," Noonan said.

Lincoln LH-78 (E7018) electrode produced high quality, low hydrogen weld deposits according to Noonan. "It's much stronger for bonding the heavy doubler plate to the hull," she said. "With LH-78, a square inch of weld can hold one ton of steel plate." She added that .045" Outershield® wire found service, too.

Lincoln equipment was also used on the huge liner. DC-600 and R3R power sources and LN-25 wire feeders helped move the project along smoothly.

At the docks of General Ship and Engine, E. Boston, Massachusetts, Phil Hardcastle, a veteran ship carpenter told what carpenters and shipfitters had to do. "They had to get down there with chisels, sledges, drills and high pressure water hoses to destroy the hard oak and fir caps on top of 7-ton concrete blocks so welders could get at the damaged keel plates," he said.

Hardcastle was laid off two days after the Queen left. But he was proud of his work and the people he worked with. He summed it up, "It was an exciting project...it was important...it made me feel great. The whole ship-building world was watching us. We showed that we could do the job and we did it ahead of schedule. Everybody put everything they had into it. It was truly amazing."

*Story information supplied by Bill Coughlin.*



*The MV Queen Elizabeth 2 was served well by Lincoln DC-600 power sources, NA-5 wire feeders, and Outershield wire.*