

The Golden Ray

Photos: Jenny Christenson

– the largest wreck removal in US history

Every wreck removal brings many challenges. In the case of the Golden Ray, the challenges were compounded, one on top of the other.



Mauricio Garrido, President of T&T Salvage, presented the story of an extraordinary success; a wreck removal achieved despite working through the COVID-19 pandemic and two hurricane seasons, facing the restrictions of the Jones Act and the OPA 90 framework (legislation intended to avoid oil spills from vessels and facilities), and all taking place next to a busy ro-ro port and in full view of everyone on the nearby beach.

An amazing experience

This was a task that involved more than 500 people and three million man-hours, but there were no serious incidents. The success, said Mauricio Garrido, was down to flexibility, creativity, teamwork, engagement and a common vision and objectives from the outset.

"I was there for one-and-a-half years – at my age, that's a lot of time," he said. "But it was a great job, and I was glad to be there. After so many years in the market it was an amazing experience."

The 200-metre-long car carrier Golden Ray, with 4,200 vehicles on board, capsized outside the Port of Brunswick in September 2019. "The pilot was sharp enough that when the vessel was starting

to lose stability, he took the vessel out of the channel," said Garrido. "Otherwise, it would still be there, and the Port of Brunswick would have been blocked for a long, long time."

Challenging times

T&T Salvage was prepared for a tough challenge; but then, along came COVID-19.

"We discussed with the Club's team – what are we going to do? Vaccines were not at that time available and no one knew how bad this virus could be. But the Coast Guard said – you are not stopping, come up with a system to manage the risk. The ship was in front of them every morning, every day.

"We had extreme tides and currents, which meant we only had a few hours a day for diving and other critical operations. We went through two hurricane seasons, there was lots of scouring (the displacement of sand, silt and soil on the seabed), our primary focus was the safety of our personnel and protecting the environment, and we were carrying out a wreck removal under OPA 90, which never actually considered wreck removal when it was developed.

Getting creative

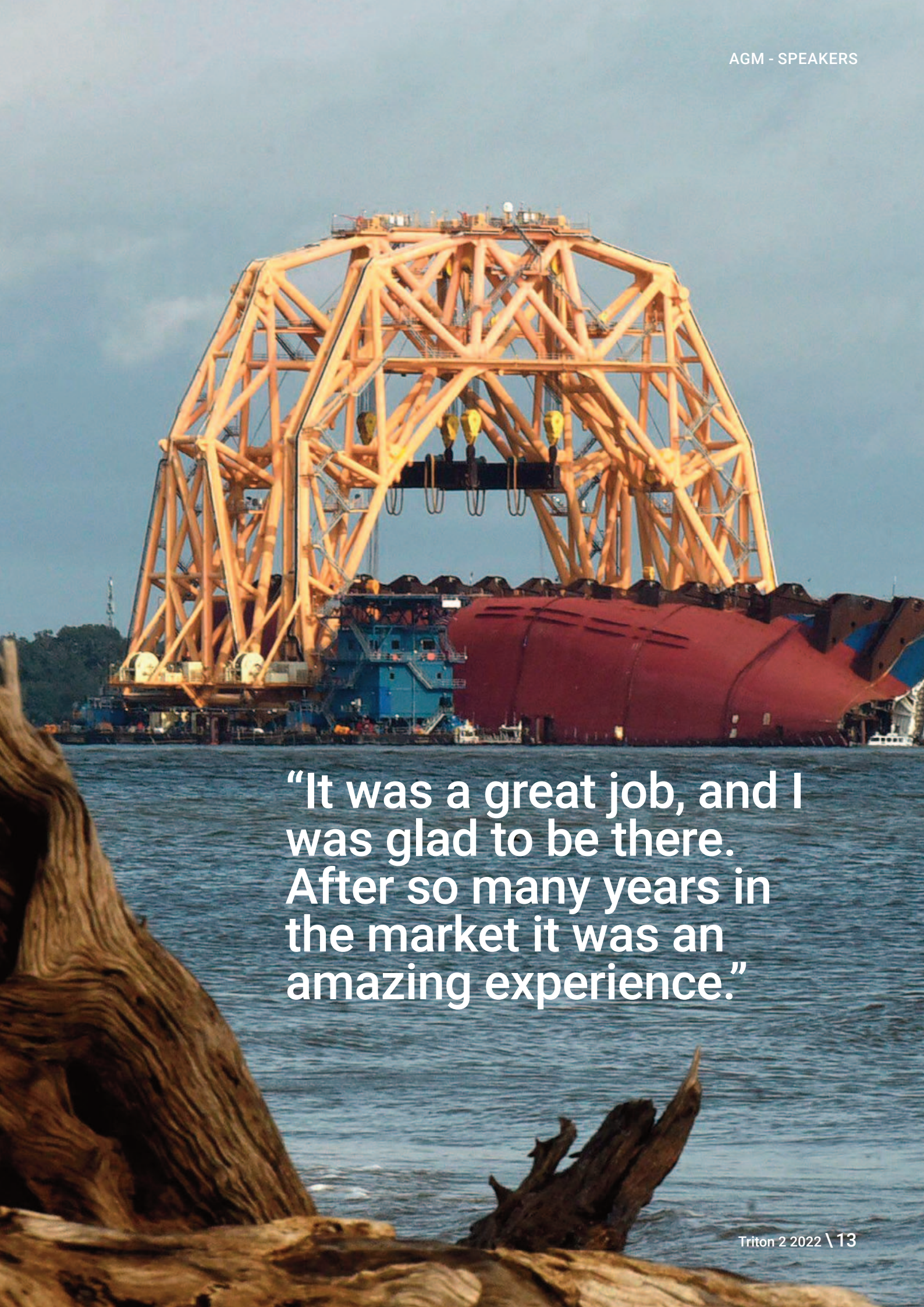
"The Jones Act placed a challenge to us in finding the right assets and equipment, because there is a limited number of large barges and cranes in the US to do this type of work. So we had to get very creative from the onset."

To address the environmental aspects, a multipurpose EPB (environmental protection barrier) for surface and subsurface debris, was conceived. "We went from the drawing board to installation in about three months – design, engineering, procurement, installation, testing all during COVID."

The EPB – a netting system and pneumatic ocean boom to prevent vehicles, oil and debris from polluting the water – consisted of 80 four-foot piles, 26 three-foot HDPE pipes, 4,900 feet of debris mesh and 6,600 feet of heavy-duty ocean boom.

Cutting the wreck

Before work began on the wreck, T&T carried out the type of analysis that is normally only used in ship construction. "Our proposal was to carry out a large section demolition, in order to minimise



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the impact on the environment and do the work quicker.

"We had to look at the ship and how it was situated and model it, to decide how to cut it. Then, when it was cut, we needed to predict what the impact would be on the rest of the ship. We also had to consider cargo weight, the cars, and of course the mud inside," said Garrido.

It took a team of engineers working around the clock and across time zones several weeks to do the modelling work. The decision was made to cut the Golden Ray into eight sections, using a three-inch cutting chain. Every section was considered a job in itself, and the cutting sequence had to be carefully planned.

Seven cutting chains were laid underneath the hull and sections of the cutting chain were to be removed or shortened as it passed through the hull.

Lifting

The next challenge was how to lift the 6,000-tonne sections. Lifting lugs were designed, each one custom-made to fit the shape of its particular section. The average weight of each lug was about 80 tonnes – the equivalent of 12 adult elephants.

Garrido said: "We were carrying out wreck removal at salvage speed, with lots of pressure from the Coast Guard and the community. We engaged three shipyards, one in Germany and two in the US, to build the lugs simultaneously."

Sixteen lifting lugs were installed on the topside of the wreck – two for each section. Spreading the load across the structure of each section, they provided the connection points with the heavy-lift twin-gantry catamaran VB-10,000. A special order was placed for the biggest slings ever made – the 190 mm slings were produced in Brazil and shipped to Georgia.

The vessel was positioned over the section to be removed; the main hoist rigging was lowered to the lifting lugs; the VB-10,000 spread bars were connected to the trunnion pipes of the lifting lugs with four slings. Then, when all was in place, the VB-10,000 made one complete



hull section cut and then removed the severed section, which was lifted out of the water for removal.

In total, 45,000 tonnes of wreck, cargo and mud were lifted.

"We were lucky to find a vessel that was wide enough to cover each section," said Garrido. "Each section was rigged and lifted in turn. Some cars went into the water and were recovered later, but the majority stayed in the sections."

No barges big enough

Another challenge because of the Jones Act was finding suitable barges to support the operation. "We had to deal with eight sections. We used a former US Navy sectional drydock with four pontoons, which provided a perfect fit between the VB-10,000 barges. It worked well."

Each section was fully sea-fastened to the barge for transport around the coast to Gibson, LA; even this required calculations and modelling to satisfy the US Coast Guard that it could be done without risk of tipping.

Sonar analysis

Once the large sections had been removed, a detailed sonar analysis

survey was carried out to track debris that had fallen out and a 1,000-tonne capacity hydraulic grab was used to remove it. "We went after every piece on the bottom to the satisfaction of the authorities and stakeholders," said Garrido.

Remaining responsive

Reflecting on what was the largest wreck removal in US history, he said: "We set up a multi-tier bubble system to cope with COVID-19, which worked. Stakeholder management was intense and demanding but this is key to the game. We had a lot of them to deal with and they all had different perspectives of risk. The key is to identify the stakeholders early and keep them informed. Flexibility must remain if we are really serious about protecting the environment," said Garrido.

Finally, he said: "When you look at the timeline, from February 2020 when we executed the contract to when we completed the last section in September 2021, it was an amazingly short period of time, especially when you take into consideration all the work and the challenges involved," he said. "It wouldn't have been possible without the full integration of the vessel owners and their P&I club. I think that is how clubs and salvors have to work together in the future." 🐦

Shipping in the blood

Photos: Jenny Christenson



Interview: Mauricio Garrido, President, T&T Salvage

Mauricio Garrido was born in Peru but left the country with his family in 1978, when he was almost 16, due to the political and economic situation.

"We had family in New York. I landed in high school and didn't speak a word of English, but I played soccer, and that helped. I used to carry two dictionaries with me. I went into Spanish classes and did the reverse – the others had to write essays in Spanish, I had to write them in English."

In six months, he was fluent in English – and his maritime career soon began. "My father was in the fisheries business and my uncle was a naval officer, an engineer. Since I was five or six, he used to take me to shipyards and I had the opportunity to jump aboard ships, and that is when I developed my interest. Mum tells me I used to sit for hours and draw ships."

After gaining a degree in naval architecture from SUNY Maritime College, Mauricio's first job was with the US Military Sealift Command, where he supported the technical management of 150 vessels.

In his late 20s, he moved into casualty investigation at the National Transportation Safety Board, where he was involved in the investigation of the

Exxon Valdez catastrophe. Looking back, he says: "My focus was on the documentation of the damage, and I didn't really get involved in the investigation on the human element. It was a massive grounding and people still talk about the Exxon Valdez; but we really didn't grasp the significance of the job at the time."

During the investigation of a major grounding in the Cape Cod area, Mauricio met a Swedish surveyor who represented the ship's underwriters and shortly thereafter became Mauricio's boss when he was offered an opportunity to be a casualty surveyor for the Scandinavian insurance market.

Later, having 'jumped the fence' to join the salvage world, Mauricio spent eight years with Resolve, before moving to Titan Salvage. He has been president of the Texas-based, family-owned T&T Salvage since 2008.

"When I joined T&T, it was very much focused on the US Gulf. The owners wanted to start competing with international salvors. We quickly expanded into international markets – I had the contacts," he says. "We opened offices in Singapore and Germany and started working a lot in South America, and it has been building from there. I

have great support from the owners of the company – what I really like about T&T and the family is that they are super service-oriented and always take care of the client. Over the years, we have always maintained that philosophy."

Needless to say, Mauricio has seen tremendous changes during his career in salvage. "When I started in the market, the aspect of pollution was important but not a priority. It has become the priority because of exposure, social media and issues around corporate image. These days, you have a grounding and it's on Twitter and Facebook in minutes."

His relationship with The Swedish Club goes back to the earliest part of his casualty response career with the Scandinavian Marine Claims Office (SMCO). "I first met Lars Rhodin at that stage, and I value our long friendship," he says. "The way we look at the insurance market, especially with The Swedish Club, is that we consider ourselves part of it. We are always there to assist and provide advice, to sit at the table and negotiate contracts in a fair way. This business is a marathon and not a hundred metre sprint."

"As for the 150th anniversary – awesome! It is such a milestone. I wasn't going to miss it for the world." 🐙