

Ocean Data as a Service™

Terradepth and T&T Survey Saved Gulf Copper and the Battleship Texas Foundation a Full Day of Downtime for their ~60 Person Team, by Surveying Underneath Battleship Texas

Challenge: Surveying the Port where Battleship Texas was Dry Docked

When Gulf Copper dry docked the Battleship Texas, the historic vessel's 30' draft required dredging its dry dock hole to 60'. Heavy ship traffic from the adjacent Port of Galveston ship channel causes silting of its dry dock hole.

Due to the length of time on dock, an underwater survey was required to ensure adequate depth remained to safely undock the Battleship Texas. Surveying ports is inherently complex due to ship movement and ships docked. Traditional surveying methods would necessitate significant logistical efforts to move the dry dock. A potential move to enable surveying would result in, not only a ~\$50k cost to move the dry dock, but also downtime for the ~60-person restoration team, as well as risk of damage due to the move.

"Gulf Copper was not only able to maintain uninterrupted project repair but also achieved substantial savings in avoiding moving the dry dock."

David Casale, Project Manager, Gulf Copper.



Solution: Surveying under the Dry Dock

Terradepth and T&T Survey devised a solution to survey the area while Battleship Texas was still in dry dock; they would survey under it. This was enabled by:

- **Compact AUVs:** Terradepth has smaller, highly maneuverable AUVs and was able to navigate under ships without bumping into ships or port.
- **Advanced Navigation Planning:** Thorough navigation planning was required to ensure the AUVs could navigate under the ship while avoiding sea bottom and the port.
- **Real-time Monitoring:** The operations team monitored the operation closely, allowing for continuous adjustments.
- **High-resolution Imaging:** The AUVs were equipped with state-of-the-art sonar and imaging systems to capture detailed data on sediment buildup.
- **Safety Protocols:** Terradepth's AUVs have advanced collision avoidance systems to enhance safety, ensuring the protection of the Battleship Texas.

Result: Gulf Copper's ~60-Person Team could Continue Restoration Work

Terradepth and T&T Survey's innovative approach to underwater surveying in the Galveston port yielded exceptional results:

- **Prevented 1-day downtime for the ~60 person Gulf Copper restoration team:** By eliminating the relocation of the historic battleship, Terradepth allowed maintenance to continue without impacting the large project team for a full day.
- **Eliminated ship moving cost:** This never-performed approach allowed the ship to stay in dock.
- **Ongoing persistent geophysical data:** By utilizing AUVs to persistently capture data, it allows for a baseline of information and then subsequent recurring surveys can be performed to not only see the delta change but begin to formulate higher probability on timing for future dredging needs.

Conclusion: Terradepth's innovative use of smaller AUVs to navigate under ships in the Port of Galveston dramatically reduced cost and also played a pivotal role in the continued preservation of the historic Battleship Texas.

"Planning and executing missions like these is not easy. Many thanks go to our partners at T&T and Gulf Copper for supporting and driving this effort forward. This mission underscores the power of innovative technology and forward-thinking solutions in addressing complex challenges, benefiting both historic preservation efforts and the efficiency of port operations, we are honored to contribute to the development of new, more environmentally friendly ways of surveying."

Joe Wolfel, CEO of Terradepth

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