

TNT Welding Supply Makes a Product of the Package Wraps Up Complex Solution in Marine Logistics

Pat Leger knew the problems well enough. Anyone working offshore can list them: salt spray, rough handling, too little room on deck and too much time on the water. As a representative of TNT Welding Supply—long-time vendor to the growing Gulf Coast market—Leger heard them listed daily.

Naturally, everyone keeps an eye out for new solutions. Stainless steel and high-tech plastics are sometimes quick and effective fixes. TNT already supplied its customers with the latest and best of available technology. But some problems are too complex for a quick fix, and some solutions have simply yet to be invented. When Cal Dive first outlined its logistical problem, Leger knew his customer needed more than an off-the-shelf solution.

Cal Dive International, a forty-year veteran and early pioneer of subsea construction, provides a range of services to marine properties worldwide, including the maintenance, repair, inspection, and eventual decommissioning of oil rigs in the Gulf of Mexico.

“Breathing gases are just a small part of the pie at Cal Dive,” explained Graham Atkins, a gas specialist at TNT and the company’s point man for developing this solution.

Atkins knows even small parts can be critical. The logistics of bringing welding and breathing gases safely to remote, marine worksites was a persistent headache for Cal Dive and a potential bottleneck to its ability to serve clients.

Contents Under Pressure

“Say a storm comes up on the Gulf,” continued Atkins. “The minute it passes, Cal Dive needs to be shipping out full speed to any number of platforms, checking for damage and seeing to repairs.” Yet having full gas canisters on hand, and in the right amounts for each job, is only the first hurdle: “You also have to load them safely on a boat, and keep them from falling off.”

Crisis: Underwater welding contractor needs efficient, safe, lightweight and durable means of transporting breathing and welding gas clusters to offshore worksites.

Customer: Cal Dive International, leading provider of innovative subsea construction, maintenance and abandonment services to the oil and gas industry.

Resolution: TNT designs and builds unique, stackable transport system for multiple gas canister clusters; pioneers new applications for epoxy and galvanized coatings, and re-tools its delivery, tracking and warehouse business to facilitate cluster distribution.

Result: A revolution for buyer and vendor alike. Cal Dive sees instant gains in speed, capacity, flexibility and safety. TNT invents an entirely new market within the offshore industry, and then corners it.

Surprisingly, no one had yet devised a reliable way to do that. Everywhere in the industry, the situation was the same: Canisters were loaded as singles or strapped together in any number of non-standard ways. If knocked loose on deck, just one of the man-sized, metal bottles could become a rolling disaster. Even when safely stowed, the bottles' skins and valves corroded in the salt air, risking another sort of hazard. These were the problems Leger and Atkins knew would take an entirely novel approach—and a huge investment by their company—to solve. Ultimately, that solution would alter the course of business at TNT and set a new standard for the industry.

“This was a project we couldn't just dabble in. It was going to take a full commitment of our people, time and resources,” said Atkins. “But we were in a position to do it. We had staff with the right kind of training and experience, and we had relationships with companies—customers of ours—that could provide us whatever we didn't already have.”

Atkins drew on those relationships right from the start. With him at the first Cal Dive meeting was Gordon Salvador of Salco Machine, an expert in steel construction and design. Atkins then met with cylinder manufacturers, coating specialists, his best welders and even the U.S. Coast Guard, putting together a solution as intricate as the problem Cal Dive presented.

After months developing a prototype, Atkins recalled his customer's initial reaction: “They went over our first effort with a fine toothed comb. Cal Dive has an exceptional safety department, and they made at least fifteen suggestions for improvement. When we brought back the final product, they asked if we could load it up and leave it with them—they wanted it immediately!”

A Bottle In A Box

What had Cal Dive so excited looks a bit like a shark cage crossed with a milk crate: an unbreakable container of quarter-inch tubular steel, galvanized and hot-dipped in liquid zinc. Inside fit clusters of twenty-five gas-filled cylinders, stacked prone in five layers of five. TNT designed a similar but smaller model to hold clusters of sixteen, all upright like bowling pins.

Standing beside a couple newly constructed 25-packs, Atkins demonstrated two features that set the TNT product apart from any other: steel webbing protects the delicate canister valves while allowing access to them, and the clusters themselves are as stackable as Legos.

Atkins reached up to one of the four sturdy, metal tabs extending from each corner: “These are the lifting pad eyes. Each one has fifty-plus inches of welding and a machined, standardized hole in the middle. Clusters can be stacked on top of each other, and then bolted together to form a single unit. We designed

these clusters to leave the smallest possible footprint, allowing twice the volume in half the space. That's essential when room on deck is at a premium."

Atkins noted how each cluster sits on its own steel platform, allowing it to be moved via forklift, as well as through the pad eyes with a sling. A short walk away, an idling flatbed trailer waited for newly filled clusters to be lifted on board. "That's Norman, our long haul driver. He makes a continuous circuit from here to New Orleans, through Houma, New Iberia, Lafayette and back, delivering fresh clusters and returning others. We're the only company that delivers, and our cluster design helps make this possible."

From a terminal inside the business office, TNT tracks the location, composition and status of every cluster. With a few keystrokes, production team member Derek Templet saw that fifty-one 25-packs and eighty-five 16-packs were making the rounds that hour. Cal Dive had some on the water, some at the dock and some on their way in for refilling—which meant Templet had some work to do. After filling at the dock, each canister is tagged with a tracking number and the international color code for the gas it contains. The epoxy-coated canisters are shrink-wrapped for safety, bolted to the cage and moved out. The entire system is monitored from hose, to truck, to dock, to ship and back again.

No system of this size and complexity operates without considerable team effort. Atkins is quick to hand credit to TNT's expert staff, especially Derek, Todd, Larry, and Terrel who shepherd the clusters through processing, and Norman who trucks them across the state and beyond. "These are the people who've made this possible and who are going to build our business in the future. With guys like these, anyone can look good."

The future of TNT's steel clusters is promising. Developed in response to one customer's need, they've proved eminently adaptable to applications across the industry. Ensuring the safe transport and installation of volatile gasses takes smooth, coordinated effort and a very good package.

For more information on how TNT Welding Supply can wrap up your complex problem, call 225.343.4806 or see: www.indweld.com for the location nearest you.