PARA-ANCHORING PIONEERING

By Zack Smith

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Please visit us on the internet at www.Para-Anchor.com

COVER PHOTO: The tuna seiner "Onward" undergoes sea trials in 1947 before its pioneering para-anchor deployment during a chubasco in Mexico.

Owed to the Fishermen

"The best yachtsman, like ourselves, tries to avoid storms by choosing the best season, the best routes, for any passage he makes…Veteran fishermen such as those who work the West Coast of the Americas… must lie offshore for two or three weeks at a time, winter or summer, would be a better source of information. For when we have met and interviewed them, the parachute sea anchor has often come into the conversation. But they rarely bother to write about storm seamanship."

--- Lin and Larry Pardey
Drag Device Data Base Second Edition by Victor Shane (1990)

"...the parachute sea anchor has often come up in conversation. But they barely bother to write about storm seamanship."

"Fishing ranks as one of the most hazardous occupation in the United States… Those of us who go offshore for fun and pleasure can pick our time and change our schedule, but the skipper of a commercial F/V is up against the so-called economic imperative. "Breaking up a trip" can be an expensive proposition. He has spent hundreds of dollars on fuel, ice and provisions, and the crew has to get paid whether they catch fish or not. So what happens when the Weather Service issues an untimely bulletin? Well, given today's shaky economic picture, the skipper has to make a calculated decision whether to go ahead with the trip, or to abort and head back with the holds empty ….sometimes they get caught out there regardless."

~ Victor Shane
Drag Device Data Base Fourth Edition (1998)

PHOTO CREDITS: Historical photos were acquired from San Pedro reporters and Mr. Fiorentino's personal collection. More current para-anchor photos and audio and video interviews were taken by your author. Many thanks to my friends Kim, Carol, & Laurie who assisted in gathering data and for providing some much needed editing advice.

—-Zack Smith

The *Onward* Was A "Cranky Boat."

Gerrard Fiorentino (sitting bottom right) with crew members aboard the "Onward" in 1947. The man behind Fiorentino is his brother Larry. Fiorentino converted the narrow sardine boat into a tuna seiner. Despite adding a five-foot sideboard so it could carry more tuna, which he believed would balance the weight and increase stability, his catch now threatened the lives of all aboard.

When an ordinary fishing trip ran into an extraordinary storm off the coast of Mexico, a young tuna boat captain's quick thinking saved his catch and the lives of his crew and inadvertently launched a revolutionary safety device—the para-anchor. The para-anchor would go on to garner numerous patents, receive recognition by NASA, and become a safeguard staple aboard commercial and recreational boats all around the world.

Aboard his 65-foot tuna boat, *Onward,* Gerrard Fiorentino was just 23 that summer night in 1947. Filled with fish, the boat was returning to San Pedro, California, when it was caught in a storm between Mexico's Cedros and Natividad Islands. Large waves pounded the side of *Onward*, causing it to pitch heavily and shift its slippery cargo. A former Boatswain Mate in the Navy, Fiorentino knew immediately that he and his seven-man crew were in great danger.

"*Onward* was a cranky boat," remembers Fiorentino, now 88. "It was narrow with just a 14- or 15-foot beam…it should have been 18 feet for stability. Practically everyone I knew told me the boat would tip over because it was so narrow."

Despite adding a five-foot sideboard for the purposes of carrying more tuna, balancing weight, and increasing stability, his catch now threatened the lives of all aboard. "We had 20 tons of yellowtail on the deck," remembers Fiorentino. "We were heavy and riding low in the water. Sixteen-foot waves kept hitting us and rolling my boat onto its side. The wind was blowing between 50 and 60 knots. I knew the odds were against us, and I was afraid for my crew."

Massive waves swept over the deck, carrying off scores of tuna and knocking crew members off balance. The men were drenched and exhausted, struggling to see by the light of the moon and just one deck light. At times, *Onward* careened so far over, the men expected it to capsize. "I could see the fear on their faces," said Fiorentino. "I had to do something fast."

As he clamored on deck, Fiorentino eyed a couple of old Air Force parachutes that he had used to cover the iced tuna and prevent the fish from spoiling. During his military days, Fiorentino learned about and was fascinated by the fine nylon fabric that did not rot. Although he brought the parachutes aboard to serve one purpose, another purpose came to mind. What if he used the parachutes like an anchor to gather water and stabilize the boat?

"I just told the crew, 'I'm going to straighten out this boat, don't get excited,'" he said. "I rigged the chute myself; I didn't have time to try to explain to anyone what I was going to do. It made sense that it should work, but there was no guarantee."

Fiorentino`s first attempt to deploy the parachute from the bow failed. The 24-foot light air parachute caught a gust of wind on the deck, flapped wildly, and nearly pulled the 153-pound Fiorentino overboard. The parachute fell on the ocean's surface, floating just long enough to allow the huge waves to turn it into a tangled mess.

But Fiorentino did not give up. He grabbed another parachute, this time rolling it up like a sleeping bag. He shackled several feet of chain to the shroud lines, confident that if the parachute sank quickly, the canopy might not tangle. "I forced myself to be calm, said 'Please, God, let it work,' and threw the thing off the port side of the boat," said Fiorentino.

The 24-foot light air parachute caught a gust of wind on the deck, flapped wildly, and nearly pulled the 153-pound Fiorentino overboard.

It was common practice for fishermen to overload their boats with literally "tons" of fish, making them vulnerable to knock downs in rough weather.

Chain attached to this 1950s para-anchor was essential for sinking it quickly and to help keep the canopy from collapsing.

Homemade sea anchors had existed for centuries, but none of them offered the same holding power for storm use like the parachute.

As the desperate crew waited, the heavy chain indeed sank the parachute as the boat continued to drift backward. Then, the line pulled taut, and the parachute canopy inflated. Almost immediately, *Onward's* bow thrust into oncoming waves, which dramatically stabilized and slowed the boat's drift. Everyone aboard started to cheer. Thanks to Fiorentino's ingenuity, *Onward*, its crew, and cargo all survived the storm.

A jubilant Fiorentino spent most the return trip talking on his VHF radio to other fisherman about the discovery of what the crew had named his "para-anchor." This abbreviation of parachute sea anchor would become a common term in the boating industry.

"I've always been a big talker," laughed Fiorentino. "I was pretty much talking nonstop for days. Some people thought I talked too much, but I was pretty excited about what had happened and how it could help fishermen. Homemade sea anchors had existed for centuries, but none of them offered the same holding power for storm use like the parachute."

Not only was Fiorentino the first to discover that the physics of controlling air with a parachute also worked underwater, but that an actual parachute did the job. Unbeknown to Fiorentino, it was the beginning of an industry.

"The fishing community in San Pedro where I lived was really close-knit," he said. Dozens of photographs of fishing boats and crews from decades past still hang on the walls of his office. "Fishing can be a risky business. We all watched out for each other like brothers. Yeah, we were competitive, but we were there for each other. If someone was in trouble, we'd stop fishing and go help. If something new came along that would help us fish better or be safer, we'd share the information."

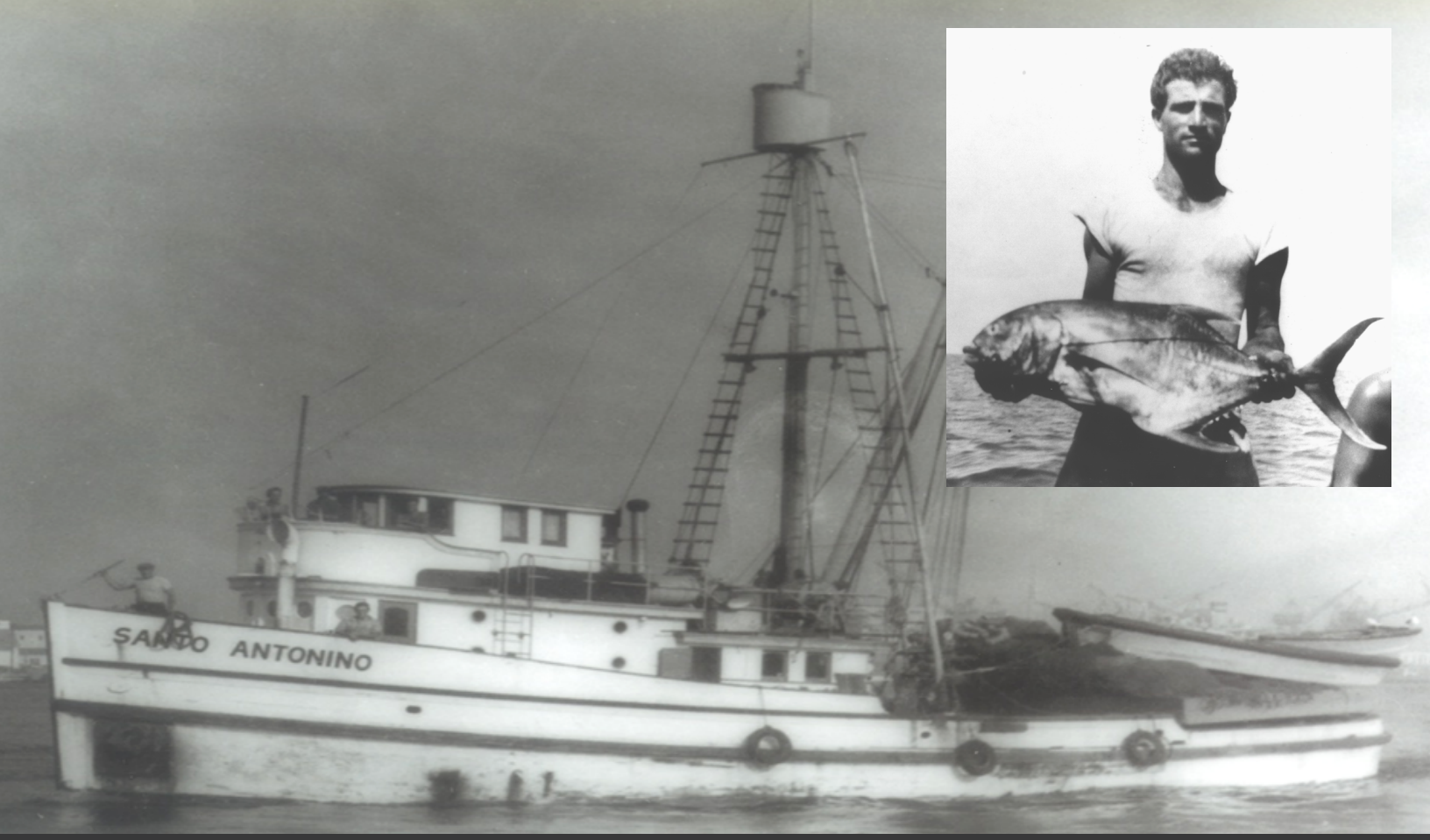
Fiorentino began sea trialing his rigging system to prevent the *Santo Antonino* from horsing back and forth. ….this action quartered the boat's bow to the weather and eased the swinging motion.

Terminal Island in San Pedro California was a common place for fishermen to unload their fish. Pictured onboard the Santa Lucia is 14 year old Fiorentino resting against his father's (Valentino Fiorentino) shoulders. Gerrard Fiorentino started commercial fishing at the age of 14.

Thanks to Fiorentino's nonstop radio chatter about his new para-anchor, a large crowd met *Onward* when it motored to Terminal Island to unload. While the fish was being offloaded, Caterpillar employee and engineer Ed Vallette began overhauling the *Onward's* engine since it had been acting up. When asked about the parachute, Vallette responded, "I seen it laying on the deck back there so I said, 'What the hell is that going to do? Are you trying to jump out of the ***damn building?'" At the time, Vallette could not believe the number of fishermen stopping by the boat while he worked on the engine. "That Gerrard was a big talker, and he did this until four something or another." Lifelong commercial fishermen Tony Barcott agreed, stating, "Gerrard was talkative. He was on the radio all the time…always talking, talking about everything."

As word spread about the para-anchor, Fiorentino began buying parachutes from the local Union War Surplus store. The young man then made a few modifications to ensure the parachutes would last longer before selling them to the boating community. For a small fee, he would personally attach the chain to the canopy and reinforce the shroud lines by hand-stitching them with a fishing twine. At first, he considered income from para-anchor sales as just a little extra spending money to go to the movies or out to dinner.

In 1948, Fiorentino sold *Onward* and bought an 87-foot tuna boat—referred to as a "seiner," named *Santo Antonino*. He learned that deploying his para-anchor saved fuel when drifting along the fishing grounds and that it steadied the boat, helping those on board to sleep better. Unlike *Onward,* however, *Santo Antonino* had a tendency to swing back and forth, pitching the boat sideways. Fiorentino thought about this new problem and started experimenting.



In 1948, Santo Antonino was the 87-foot (26.52 m) tuna seiner where Fiorentino first developed his rigging system that included the bridle set-up used to angle the boat in a hove-to position. Quartering the boat to the weather caused the hull to create a wide slick of little swirling eddies that broke down approaching waves and it prevented Santo Antonino from horsing back and forth. Upper photo of a younger Fiorentino aboard the Santo Antonino.

"Everything I did was trial and error."

The resulting changes would be the first in a series of adaptations he would make in the course of the modern-day para-anchors' evolution. Initially, Fiorentino considered using one of his rigging blocks to solve the problem, but all aboard were in use. So he settled on tying a 50-foot line directly to a purse seine ring, then passing 150 feet of manila rope through the ring before attaching it to the para-anchor. The idea was to wrap the bitter end of the 50-foot line to an amidships cleat and pull until taut, forming what looked like a horse's bridle. The action quartered the boat's bow to the weather and eased the swinging motion. Back in port, he purchased additional blocks to replace the ring used to form the bridle. He recommended other fishermen and sailors do the same with existing para-anchors. "Everything I did was trial and error," explained Fiorentino. "At first I didn't let enough rope out on the bridle. Then, I found out more rope made the boat right itself comfortably. Like women, no two boats are the same, so I would tell people, 'You gotta make adjustments.'"

By 1949, Fiorentino had developed a safe and easy-to-use rigging system that people were actually buying. To expand, the now 25-year-old entrepreneur began purchasing larger quantities of cargo chutes. As his business grew, he developed alliances with several military surplus stores. Together, they formed the Associated Surplus Dealers trade group.

Although Associated Surplus Dealers was successful, Fiorentino opened his own 3,000 square-foot waterfront store in San Pedro. A picture from the store's launch in 1958 shows the storefront stuffed with merchandise. Looking at the picture, he chuckled and said, "I filled it full of things I liked…old nautical stuff, tons of equipment for boats, anything I thought someone might be interested in. My main business was designing commercial fishing equipment; the para-anchors were just a small part of it at the time. But, sometimes I'd miss the ocean so much I'd go out fishing again."

While continuing to sell his para-anchor to fishermen, Fiorentino began reaching out to yachtsmen as well. One of his local friends and partners, Eddie Cohen, owned Transcontinental, Inc., a large military surplus outlet known as Transcon. Cohen asked Fiorentino to fashion a better device for attaching shroud lines, so Fiorentino went to work.

"I gathered up some short brass rod to build hardware that would permit us to attach the parachute and rode lines to one piece of hardware," said Fiorentino modestly. "The hardware took on the shape of a tubular triangle. The top of the triangle attached to a spinning swivel and the shroud lines attached to the solid bottom tube. It made it easier to catch all the loose lines of the 24- and 28-foot parachutes. Yachtsmen really liked it and our sales went up."

Fiorentino (left) and his uncle Diamond Jim inside Fiorentino's Marine Store located at 311 22nd St., San Pedro, California.

The new device inspired Fiorentino to reach out to yachtsmen as well as team up with local surplus dealers.

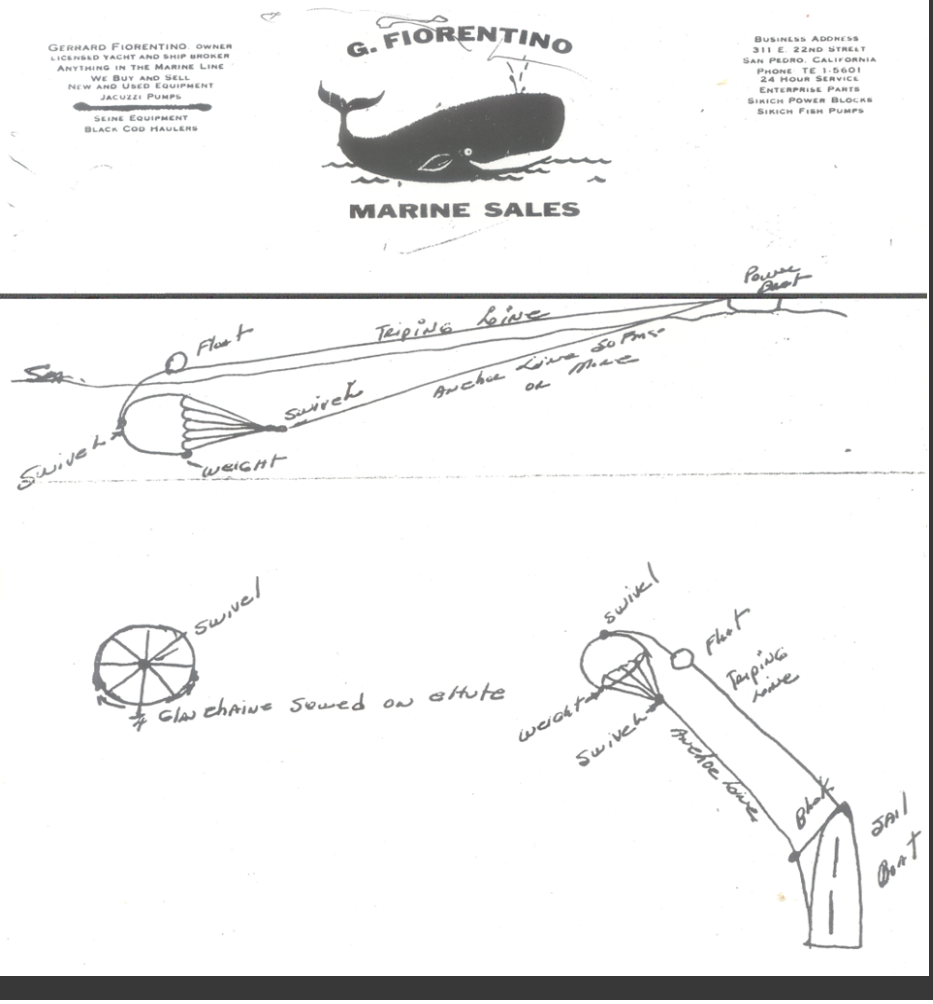
Fishermen often carried at least three para-anchors on their boats as the light-duty materials could easily tear.

During the late 1950s and early 60s Transcon ran national advertising campaigns referring to the product as a para-anchor, thereby further popularizing Fiorentino's term. The ads promoted para-anchors that featured Fiorentino's new triangle ring and swivel attachment. "I included the fancy brochure with the fishing equipment I shipped overseas. It really helped our sales."

Based on customer feedback and product testing, Fiorentino began to see room for improvements. Fishermen found the surplus parachutes could still tangle and break because of their thin, silk-like fabric. For this reason, they often carried three para-anchors aboard their boats. "I started attaching my own shroud lines to the chutes," said Fiorentino, "and I reinforced the end where the trip line is attached for recovery. I didn't want it to break off."

24– and 28-foot (7.32– and 8.54 m) airman chutes were commonly converted into para-anchors. The fabric was a 2-ounce, silk-like nylon, similar to the feel of a handkerchief or scarf. Their thin fabric caused them to wear out quickly. For this reason, fishermen commonly carried three parachutes aboard their boat.

There was only one type of parachute that Fiorentino did not have to reinforce due to its heavy-duty mesh design. That was a 1950s missile-dropping parachute referred to as a buord. Although smaller in size, ranging only from 8- to 12-feet, all Fiorentino had to do was sew a swivel into the middle of the solid canopy and the buord became an effective para-anchor. "I used a needle with seine twine to attach the swivel to the parachute so we could connect a trip line to it for recovery," said Fiorentino. "It made it easier for the yachtsmen to recover the parachute." After much experimentation on different boats, we eventually learned how the smaller buords could be used on sailboats in the 20- to mid-40-foot range. At that point, para-anchors began to grow in popularity in the sailing community. As it turned out though, serious offshore sailors were an inquisitive bunch who frequently had questions about rigging.



Serious sailors were an inquisitive bunch who frequently had questions about rigging.

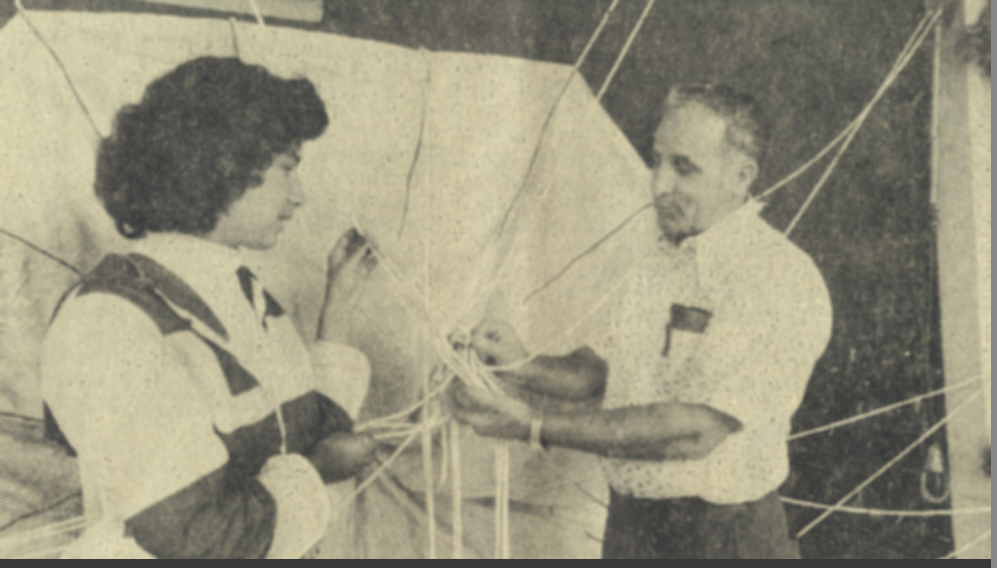
Fiorentino's hand written instructions from the 1960s demonstrates the use of a bridle, chain weight at the para-anchor end, and a full trip line for power and sailboats alike. During that time period there was limited information about para-anchors so Fiorentino was frequently sought after for advice on the use of para-anchors and other methods of handling storms at sea.

"They were busting my chops," said Fiorentino, "so I started drawing illustrations on my letterhead so they'd let me get back to work." By work, he meant supplying commercial fishing equipment to the largest tuna fleet in the world.

During the course of the next thirty years, Fiorentino dominated the world's para-anchor market without having to make any substantial design changes and with virtually no competition.

But with demand increasing and the availability of existing parachutes decreasing, change was afoot. Fortunately for Fiorentino, his smaller, heavy-duty buord was still popular and available, and it soon caught the attention of Lin and Larry Pardey. The young Southern California couple who bought and later wrote about the buord para-anchor they purchased from Fiorentino became instruments of change.

The first edition of the Pardeys' book, "Seraffyn's Oriental Adventure," detailed the use of the para-anchors' bridle, chain weight, and full-trip line. Although there were discrepancies as to how the Pardeys' later writings described Fiorentino's rigging system, they undoubtedly helped popularize the bridle and emphasize the buord parachute's affordable quality within the sailing community. In their series of "Storm Tactics" books, seminars, and videos, the Pardeys repeatedly described



The para-anchor that saved Fiorentino's life at sea became his inspiration for opening his marine store in 1958, where he invested in a larger inventory of surplus chutes. Over the next 50 years, Fiorentino shared knowledge of his seamanship from his San Pedro store, teaching sailors the importance of the para-anchor rigging system he had developed during the storm. At this time, San Pedro's Cabrillo Yacht Club was located right across the street, next to the largest tuna fleet in the world.

Fiorentino's buord remained the surplus Cadillac for over 50 years.

Fiorentino's methods and established themselves as strong proponents of the para-anchor and bridle system.

"The Pardeys talking about their para-anchor experiences really helped bring buord customers to my company well through the early nineties," said Fiorentino. "Then two things happened that made me have to put on my thinking cap again. First, the supply of buords dried up and second, sailboats and trawlers were being built much larger than in my day which meant they needed larger parachutes."

To augment the issue, Fiorentino was no longer alone in the quest for an improved and modern para-anchor, and he appeared to have inspired some local competition. An engineer and two Southern California entrepreneurs each formed companies to manufacture new para-anchors.

To reach out to the yachting community, a late 1950s brochure was produced after Fiorentino teamed up with local surplus owner Eddie Cohen from Transcontinental who inspired Fiorentino to make improvements to the para-anchor.

One of those companies then teamed with an Australian man to do business there. Eventually though, the new Australian company severed their American ties and began conducting business independently.

Some of the new companies claimed that the manufactured fabric they used lasted longer than Fiorentino's surplus para-anchors, and more importantly, they were able to produce a larger range of parachute sizes. To make matters more challenging, several companies teamed up with authors to promote their products more effectively in books and magazine articles. Fiorentino had no experience in marketing his product, and for the first time, he had substantial competition.

To keep up with the times, circa 1995, Fiorentino teamed with private investors, eventually establishing Fiorentino Para Anchor, based in Newport Beach, California. The goal was to produce a para-anchor that could equal the strength of the buord yet be manufactured in varying sizes to meet the needs of virtually every type of boat. "Usually, I relied upon myself to come up with solutions for problems," said Fiorentino, "but the company was moving into full-scale research, design, development, and manufacturing. This time I wanted a team of people with various types of expertise around me to take over manufacturing so we could build a better para-anchor."

The first prototype parachutes were made from heavy mesh fabrics. "We chose mesh because it allowed water to seep through the parachute similar to the buord chute. As soon as the prototypes were ready, we immediately started a series of sea tests," said Fiorentino.

When offshore test results confirmed that

The 1952 mesh buord was originally used to drop ordinance during the Korean War. When they were first available to the public, Fiorentino purchased thousands of these parachutes to supply fishermen and sailors all around the world. They were initially priced at $12 a piece, decades later increasing to $150.

Keeping up with the times — from surplus to manufacturing.

Fiorentino's manufactured buords performed better than the 1950s originals because of better holding power, the company had the confidence to manufacture them in greater quantities. Initially though, the new para-anchor was only marketed by word-of-mouth. Then in 1997, Fiorentino presented it to the public at the Newport Beach Boat Show. The reaction from the public was unexpected.

Unable to differentiate between Fiorentino's new, more expensive para-anchors and the original 1950s buord para-anchors, sailors and yachtsmen passed them by. "No sailor wanted to pay retail for a parachute that looked like the cheaper surplus buord!" said Fiorentino while giving the thumbs down gesture. "So we went back to the drawing board."

From that point on, Fiorentino's research and design team focused on a para-anchor designed from zero porosity fabrics similar to the silky surplus chutes but built much stronger and with a higher number of panels to combat potential canopy blowouts. Anti-rotation weights replaced the bulky chain that Fiorentino originally sewed into the surplus para-anchors, and the two custom stainless steel buckles brought the shroud lines together, making it easy for sailors to attach anchor rode to the device.

The new buckle hardware replaced the traditional thimble or shackle hardware used by other manufacturers of parachute anchors. Fiorentino did keep one item from the buord parachute—its 5/16-inch braided shroud line that the Fiorentino team believed offered superior strength and a proven track record of 40 years. And every part is still made in the USA.

"We got a lot of ideas from the surplus parachutes I modified in the 1940s, but we used stronger parts and a better design," said Fiorentino. "We also improved on the original hardware

The new 1995 mesh buord manufactured by Fiorentino was awarded a patent for design improvements, but failed in the market place since it still looked too much like its inexpensive 1950s counterpart.

setup that I invented for Transcon in the 1950s." The new para-anchor, called the Para-Buckle, worked well. The solid fabric of the canopy captured more water, and the buckles that spread the shroud lines, coupled with the use of canopy weights, further reduced tangling. The devices were also lighter in weight than the 1995 buords. By 1998, the Para-Buckle became the first manufactured para-anchor to be sold in volume by Fiorentino. Not only did the Para-Buckles outperform the buord class of parachutes, they did not look like they came from a military supply store.

Swivel malfunctions were something that other United States para-anchor manufacturers also discovered, but no one had a practical solution.

Fiorentino's research team continued testing the new Para-Buckle anchor along with devices made by other manufacturers to study behavior and performance capabilities in changing sea states. Total equipment failure seldom occurred, but tangled shroud lines happened frequently with all brands. "We realized that the traditional thimble and shackle hardware they used to attach a spinning swivel to keep shroud lines from twisting simply failed," said Fiorentino. Swivel malfunctions were something that other para-anchor manufacturers in the United States also discovered, but no one had a practical solution.

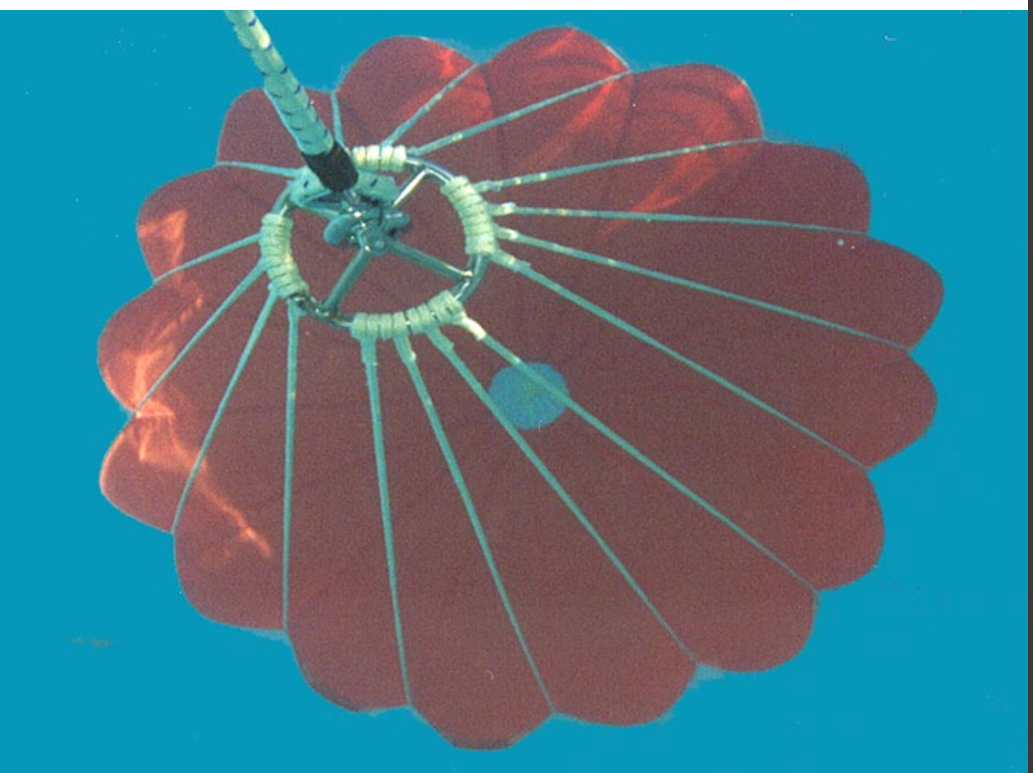
Fiorentino's Para-Buckle anchor became the first high volume selling para-anchor in 1998. It was also the first para-anchor in the world to replace the traditional use of the thimble and shackle arrangements used by other manufacturers. The patented hardware separated the shroud lines individually to reduce shroud tangles and it increased the speed of deployment by quickly sinking the para-anchor underwater.

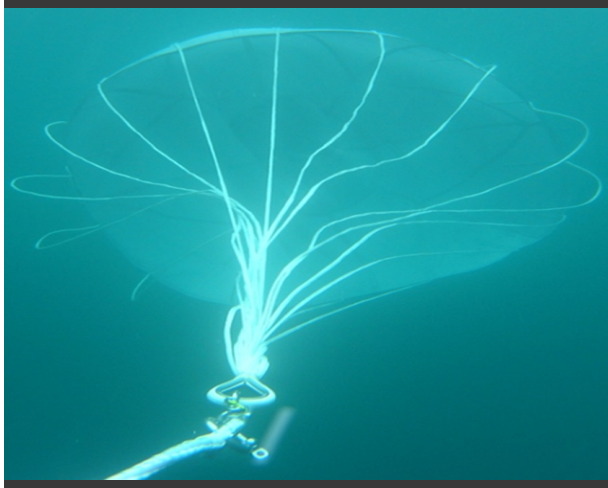
Although swivels were more effective at straightening shroud lines with the Para-Buckle design than with other parachute sea anchors, they still failed too often for Fiorentino's crew's peace of mind. So, the research and design team began focusing on the creation of an anti-tangle device.

"We knew that anytime a swivel has force placed on it, it tends not to spin," Fiorentino said. "That's what happened with my first Transcon swivel."

It took several design changes and dozens of sea trial disappointments over several years before the team discovered the answer. The new hardware was "a round ring with a dome shape and two bars like Vs inside; its weight and shape allow the swivel to spin and stop the shroud lines from tangling," Fiorentino explained. "We patented what we call our Para-Ring technology. It's a first-of-its kind product… a real chart buster."

Since the inception of the Para-Ring, Fiorentino's Para-Anchor has been awarded more patents than any other drag device company in the history of sea anchoring. The Newport Beach team even won a NASA achievement award related to this technology.





The shroud lines on this Fiorentino buord are beginning to show signs of twisting during this underwater sea trial. If lines twist badly enough they can collapse the canopy.

Fiorentino's Para-Ring technology is designed with the most advanced technology in the history of storm drag development. The use of the Para-Ring to prevent tangles coupled with the use of heavier fabrics, extra shzroud lines for canopy shape and strength, fishing weights to sink the device, plus the Fast-Pak deployment and packing method, has led to a record breaking number of awards for the Fiorentino team.

Gerrard Fiorentino turned 89 in April 2013. The slim, handsome sailor still has the spirit and determination of a 23-year-old entrepreneur. Weekdays, he can usually be found in his busy Newport Beach office which showcases his memorabilia and a lifetime of achievements. He is still very active, often hand-rigging the para-anchors that bear his name—a job, he says, he will only leave in a pine box.

Fiorentino's massive, experienced hands are perfect for securing shroud lines to the Para-Ring hardware built for the pictured 50-foot (15 m) para-anchor. It takes surprising hand strength to insure the lines are very taut before they are anchored to the Para-Ring.

Zack Smith

In 1995, Smith began interviewing retired commercial fishermen to learn more about heavy weather tactics, including the use of parachute sea anchors and storm drogues. Smith also participated in extensive sea trial testing of storm drags under the guidance of Gerrard Fiorentino. These experiences led to many discoveries, which Smith published in technical reports and videos, including the well-established "Complete Para-Anchor Set-Up" DVD.

In memoriam of
Jenero “Gerrard” Fiorentino
1924– 2014

Gerrard Fiorentino died in Costa Mesa, CA after a long illness. He was laid to rest next to his wife Kay with full military honors at Green Hills Memorial Park in Rancho Palos Verdes. A legend in the para-anchor industry, he will long be remembered for his innovation and dedication to increasing marine safety. He continued to work, despite illness, right up until his death. If life is a voyage, Gerrard conquered rough seas and navigated his way to success. I bid farewell to my dear friend with my favorite Gerrard quote:

“We are all just passing through…”